HANDBOOK OF TOURISM ECONOMICS

Analysis, New Applications and Case Studies

editor

Clement A Tisdell

World Scientific

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Clement A Tisdell

University of Queensland, Australia

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CONTENTS

Preface ix

About the Editor xi

Part I: An Overview **1**

1. Overview of Tourism Economics 3
Clement Tisdell

Part II: The Demand for Touring **31**

2. Tourism Demand Models: Concepts and Theories 33
Sarath Divisekera

3. Empirical Estimation of Tourism Demand Models: A Review 67
Sarath Divisekera

4. Tourism Market Segmentation: A Step by Step Guide 87
Sara Dolnicar

5. Tourism Demand in Singapore: Estimating Neighbourhood Effects 105
Habibullah Khan and Tan Tat Teck, Francis

6. Demand and Cost Consequences of Violence Affecting Domestic Tourism: An Indian Case Study 121
Kunal Chattopadhyay

Part III: The Supply of Tourist Services **135**

7. The Internationalisation Process of Tourism Firms: The Case of the Hotel Sector 137
Zélia Breda and Carlos Costa

8. The Lodging Sector and the Global Economy: China's Hotel Industry in International Context 171
Liang Larry Yu and Huimin Gu

9. Travel and Tourism Intermediaries: Their Changing Role 191
Nevenka Čavlek

10. The Importance of the Air Transport Sector for Tourism 207
Andreas Papatheodorou and Petros Zenelis

11. Technical Progress in Transport and the Tourism Area Life Cycle 225
Andrew Kato and James Mak

Part IV: Studies of Particular Segments of the Tourist Industry 257

12. The Nature and Development of Visitor Attractions 259
Stephen Wanhill

13. Travelling for Treatment: The Emergence of a Medical Tourist Industry 281
Grace Lordan

14. Education Tourism 299
LA Duhs

15. The Business of Amusement Parks: Their Development and Operation 317
Stephen Wanhill

16. Cruise Tourism 339
Adrian O Bull

17. Beach, Sun and Surf Tourism 361
Neil Lazarow, Mike Raybould and David Anning

Part V: Cost-Benefit Analysis, Public Economics and Tourism 391

18. Tourism Projects and Cost-Benefit Analysis 393
Norbert Vanhove

19. Public Economics and the Assessment of Tourism Developments and Policies 417
Clement Tisdell and Clevo Wilson

20. Beaches as Societal Assets: Council Expenditures, Recreational Returns, and Climate Change 443
Boyd Dirk Blackwell, Mike Raybould and Neil Lazarow

Part VI: Inter-Industry Features of Tourism, Tourism Satellite Accounts **469**

21. Estimating Tourism Impacts Using CGE Models: A Historical Review and Future Developments 471
Stephen Pratt

22. Tourism Satellite Accounts and their Applications in CGE Modelling 493
Tien Duc Pham and Larry Dwyer

23. The Direct and Indirect Contributions of Tourism to Regional GDP: Hawaii 523
Eugene Tian, James Mak and PingSun Leung

24. The Economic Impact of Tourism in the Central Region of Portugal: A Regional Economic Impact Study with Marketing Implications 543
Celeste Eusébio, Eduardo Anselmo de Castro and Carlos Costa

Part VII: International Economic Issues and Tourism **573**

25. Globalisation in Tourism: A Theoretical and Empirical Trade Examination 575
Jean-Jacques Nowak, Sylvain Petit and Mondher Sahli

26. International Tourism: Its Costs and Benefits to Host Countries 605
Chi-Chur Chao and Pasquale Sgro

27. Inbound Tourism and Economic Growth: A Review of Theory and Empirics 619
Mondher Sahli and Simon Carey

Part VIII: Studies of the Contribution of Tourism to Economic Development **643**

28. Economic Impacts of Tourism, Particularly its Potential Contribution to Economic Development 645
Tanja Mihalič

29. Tourism Development, Conflicts and Sustainability: The Case of Goa 683
Zélia Breda and Carlos Costa

30. Tourism Development in a Remote State: A Case Study of Arunachal Pradesh, India 705
Amitava Mitra and Maila Lama

31. Tourism Development at Zhangjiajie, China: Korean Tourists and their Impacts 725
Chao-zhi Zhang and Julie Jie Wen

32. The Contribution of Tourism to the Development of Fiji and other Pacific Island Countries 741
David Harrison and Biman Prasad

Part IX: Environmental and Conservation Matters Involving Tourism 763

33. An Overview of Environmental and Conservation Issues of Consequence for Tourism Policy 765
Kristin M Jakobsson and Andrew K Dragun

34. Sustainable Tourism Development: Its Feasibility and Economic Value 787
Rajasundram Sathiendrakumar

35. Ecotourism as an Instrument to Conserve Biodiversity 813
Andreas Hohl

36. Eco Certification in Queensland's Wet Tropics World Heritage Area: Is it Good for Business? 845
Michelle Esparon, Natalie Stoeckl and Emma Gyuris

37. The Economic Value of National Parks and Protected Areas as Tourism Attractions 871
Sally Driml

38. Communal Management of Ecotourism Based on Use of Common Pool Resources: Self Imposed Rules on Minami-Jima Island, Japan 885
Takayuki Arima, Toshio Kikuchi and Yoshihiro Kuronuma

39. Ecosystem Services Approach to Dive Tourism Management: A Case Study, Ras Mohammed National Park, Egypt 911
Rady T Tawfik and R Kerry Turner

Author Index 943

Subject Index 967

PREFACE

Tourism economics has in the last 20 or 30 years rapidly established itself as a distinct branch of knowledge. Its emergence and expansion is marked by the increasing frequency with which universities and tertiary educational institutions offer courses in tourism economics, the growing number of text books available on this subject, the accelerating number of research articles published in learned journals, and the fact that a successful international journal, *Tourism Economics*, has been established.

As a consequence of these events, there has been a massive increase in knowledge and information about tourism economics and considerable advance has occurred in the methods and techniques employed by it. In addition, new applications have emerged and several interesting and novel case studies have been completed as well. One of the purposes of this handbook is to make this new knowledge available to readers in an easily accessible and relatively comprehensive form. Consequently, this book provides an up-to-date overview of tourism economics — its analytical methods and techniques, its relevant theories and its applications. These are backed up by illustrations. Fresh insights on tourism economics are provided by several case studies. Contributors also put forward innovative ideas about this subject and provide critical but constructive assessment of developments in the field of tourism economics.

It should also be noted that although tourism economics has emerged as a distinct subject, it nevertheless, remains more interdisciplinary in character than mainstream economics. Thus, the subject matter of tourism economics often includes consideration of institutional and psychological features not given much consideration in mainstream economics. This is reflected in several contributions in this book.

It is gratifying that experts from many countries and cultural backgrounds have contributed to this book. This has made the preparation of this handbook a truly global enterprise and has widened its perspectives. I sincerely thank all contributors for their efforts, their willingness to respond to my queries, and suggestions and their patience in waiting for the publication of the book.

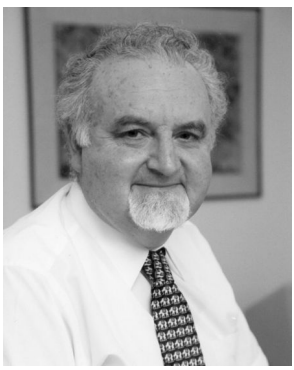
I also want to thank Evelyn Smart for the uniform formatting and word-processing of the complete manuscript for this book and for assisting

in other ways. It has been a major task; not one for the faint-hearted. Production of the manuscript was assisted by my use of facilities in the School of Economics at The University of Queensland. This access is appreciated. I am also indebted to the staff of World Scientific Publishing in suggesting the publication of this book and attending diligently to all the steps needed to prepare the final product.

Mariel, my wife, has had to forgo some of our time together while I attended to this manuscript. Thanks, Mariel, for your patience. Also, unknown to them, by joining me on my early morning starts for the day (usually around 4 am), our two small dogs, 'Sparkie' and 'Rani', have helped in a small way to keep me on track with my editing of this manuscript. So both directly and indirectly, the production of this book has been a cooperative shared enterprise.

Clement Tisdell

ABOUT THE EDITOR



Clement A Tisdell is Professor Emeritus in the School of Economics of The University of Queensland. He has been actively engaged in researching and writing about tourism economics since the early 1980s and has developed a special, but not exclusive, interest in the relationship between the development of tourism and environmental conservation. He is identified as one of the pioneers of the discipline of tourism economics. In an invited contribution to L Dwyer (ed.), *The Discovery of Tourism Economics,* he outlines his discovery and the nature of his exploration of this subject.

With his research contributions to agricultural economics, development studies, environmental and ecological economics, managerial economics, science and technology policy, social policy, and tourism economics, Prof Tisdell is ranked by RePEc as one of the top economists globally in terms of research impact and recognized as contributing to cross-disciplinary studies. He has completed a wide range of consultancies including for FAO, ESCAP for UNCTAD, World Bank, WorldFish, ISBRAM, and World Vision. Recent consultancies about tourism development have been completed for the Botswana Institute of Development Policy and for the Department of Town and Country Planning of Brunei Darussalam.

Professor Tisdell has been a Visiting Fellow of Princeton University and a Visiting Scholar of Stanford University and the University of York (UK). He has undertaken research and given guest lectures at universities in many countries including Belgium, Canada, France, Germany, India, Japan, New Zealand and Sweden, including guest lectures on tourism economics at Zurich University, the University of Mauritius and Nankai University, China. His edited or authored books include *The Economics of Tourism*, *The Economics of Leisure*, *Tourism Economics*, *the Environment and Development*, *Resource and Environmental Economics*, *Tourism and China's Development*, and *Nature-based Tourism and Conservation*. He is a Fellow of the Academy of Social Sciences, Australia and a Honorary Professor of Economics, Renmin University, China.

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PART I

AN OVERVIEW

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Chapter 1

OVERVIEW OF TOURISM ECONOMICS

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Abstract: This chapter provides an overview of the contributions to this handbook and this is accompanied by some editorial observations. The range of these contributions is wide. They cover the demand for tourism, the supply of tourist services and include studies of particular segments of the tourist industry. Attention is also given to the application of cost-benefit analysis and public economics to tourism economics as well as to the importance of inter-industry analysis and tourism statellite accounts in assessing the economic consequences of tourism. International economic aspects of tourism are analysed as well as tourism's role in economic development. The interconnection between tourism, conservation and the state of the environment is emphasised.

Keywords: Conservation and tourism; cost-benefit analysis; demand for tourism; economic development and tourism; environment and tourism; international economics and tourism; inter-industry analysis; tourism satellite accounts.

1.1. Introduction

The substantial development of tourism economics in recent decades is probably the result of a combination of factors. However, one of the main drivers undoubtedly has been the growing global importance of tourism as an economic activity. Tourism is a composite commodity to which many industries contribute. When this is fully accounted for, tourism is the world's largest 'industry' in terms of employment and global production. Moreover, it is an industry that continues to expand. On the demand side, its expansion is a reflection of global economic growth. The number of people worldwide obtaining increased per capita income and more leisure-time has risen. Because the demand for tourism is income elastic and tends to increase as available leisure-time grows, this has stimulated the demand for tourism. On the supply side, contributors to the expansion in tourism globally have been a reduction in the real cost of travel, a lowering of the time needed

to travel a given distance, greater frequency and density of travel services, and lower transaction costs in arranging tours. Arguably also, despite terrorism, the overall risks associated with touring are fewer than in the past. In addition, knowledge about travel and tourism possibilities is more easily available than in the past, for example, due to advances in information technologies. All of these factors (and most likely others) have contributed to the global growth of tourism and have increased the relevance of tourism economics to the modern world. Furthermore, for at least the foreseeable future, global tourism, despite short-term and cyclical effects (such as those caused by economic recessions), is likely to continue to expand.

Much of the current growth in global tourism is being generated by the economic growth of major Asian economies, such as China and India. As economic growth continues in Asia and in several lower income countries, this will continue to fuel the expansion of global tourism. With economic growth, service industries (of which tourism is a part) increase in relative economic importance whereas many other industries, such as agriculture, decline in their relative importance (Clark, 1957). As a result, comparative interest in tourism economics has increased whereas interest in subjects like agricultural economics has waned to some extent, even though such subjects are not unimportant.

A challenging feature of tourism economics is that it involves the study of composite commodity. This means that a number of economic techniques or methods (such as Tourism Satellite Accounting and its application) have to be developed by tourism economists to ensure that their analyses are applicable. This requires significant innovation because mainstream economics concentrates mostly on economic analysis associated with well-defined singular commodities each of which is associated with a particular industry. However, as observed many years ago by Robert Triffin (1941), it is not really clear in practice (even if products or commodities are not composite ones) where the boundaries of industries are located. This is also true to some extent of the tourism industry or sector. For example, a significant portion of tourism (but not all) is a leisure or recreational activity, and other leisure and recreational activities are partial substitutes for it. However, in some cases these activities are complements. Therefore, in defining the boundaries of the tourism industry or sector, one ought not be inflexible. A flexible approach is followed here.

The purpose of this chapter is to provide an overview of the contributions in this book. These provide a contemporary coverage of the current state of tourism economics by outlining relevant theories, providing applications and

case studies. While the coverage of tourism topics in this book is very comprehensive, it does not cover every topic to which tourism economics relates because the range of possible topics is very wide. For example, in the part of the book containing studies of particular segments of the tourism industry, scope exists for considering additional segments such as religious tourism and adventure tourism. Nevertheless, this book outlines and illustrates principles and techniques that can be applied to studying all segments of the tourism industry.

In order to organise this book systematically, the remaining chapters of this book have been grouped into the following parts:

- The demand for touring (Part II);
- The supply of tourist services (Part III);
- Studies of particular segments of the tourism industry (Part IV);
- Cost-benefit analysis, public economics and tourism (Part V);
- Inter-industry features of tourism, tourism satellite accounts (Part VI);
- International economic issues and tourism (Part VII);
- Studies of the contribution of tourism to economic development (Part VIII);
- Environmental and conservation matters involving tourism (Part IX).

It should, however, be noted that these are not exclusive partitions. For example, there are many chapters in parts other than Part VII which include at least some coverage of international economic issues involving tourism.

The nature of each of the contributions in this book will now be outlined and discussed in order to provide an overview. This is a general overview and is not a substitute for the detailed reading of each of the chapters themselves.

1.2. The Demand for Touring

Demand and supply analysis is basic to the economic study of industries and sectors of economies. Consequently, Parts II and III of this book focus on supply and demand analysis involving tourism.

In Chapter 2, Sarath Divisekera provides a comprehensive review of tourism demand models based on mainstream economic concepts and theories. These models rely on the assumptions of standard economic theory and in particular, the neoclassical theory of consumer behaviour which, as Divisekera points out, assumes that consumers are rational and strive to maximise their satisfaction subject to their income constraints. In this chapter, he gives most coverage to tourism demand models which take into

account economic changes involving multiple commodities or groups of commodities, that is, system-based models. These models are important building blocks for economic general equilibrium analysis. A number of different functional forms have been suggested for specifying complete demand systems. How should modellers and policy-makers choose between these? Divisekera outlines both theoretical and empirical factors that should be considered in making this choice. He points out that sometimes theoretically appealing functional forms have to be rejected for empirical work because they cannot be applied easily.

In Chapter 3, Divisekera outlines issues that need to be addressed in applying these demand systems and reviews empirical econometric studies of the demand for tourism based on demand systems. The demand elasticities obtained from one such model are specified and discussed in order to illustrate the value of this approach to estimating the demand for tourism.

From the coverage of these two chapters, it is clear that alternatives to neoclassical economic methods of modelling demand have had little impact on mainstream economic studies of tourist demand. Alternative or different theories associated with psychological economics and behavioural economics (Bowles, 2004; Kahneman and Tversky, 2000) for example, seem to have had little influence but have some indirect relevance. Many of these theories assume bounded rationality (Simon, 1957; Tisdell, 1996) in contrast to the basic assumption of neoclassical economics which supposes a very high degree of rationality. Nevertheless, the separability concept of demand which Divisekera discusses in Chapter 2, and which he states plays a major role in applied demand studies, can be associated with the occurrence of bounded rationality. Firstly, this separability approach has similarities to the theory of mental accounting and consumer demand as developed by Thaler (1980). Mental accounting is a part of behavioural economics. Second, the separability assumption may be widely made use of because it makes econometric measurement of demand relationships tractable. Furthermore, to some extent, tourism market segmentation analysis involves separability assumptions about tourist demand and consequently, it may also provide useful clues as to how markets can be reliably separated.

In Chapter 4, Sara Dolnicar provides an up-to-date, practical (yet critical) guide to the application of market segmentation analysis to tourism. Tourist firms often use this type of analysis to determine which segment (or segments) of the tourism market they will target in developing projects and in promoting their offerings. This approach recognises the heterogeneity of tourism markets but treats each identified segment of it as being homogenous. This supposes that a very high degree of substitutability exists

within segments but only a very limited degree of substitutability between different segments of the market. Therefore, simplifying assumptions are involved.

One problem is how to identify the relevant segments appropriately. One way is to base market segmentation on 'common sense' exogenous assumptions about the relevant segments, for example, differentiation of segments by age, gender, income levels of tourists. Another approach is to examine the available data and to see if it highlights factors that appear to be important in delineating the market segments. Dolnicar examines the alternatives and the benefits and drawbacks of these different approaches and argues that practitioners need to be transparent with their clients about the way in which their analysis has been developed. They should be transparent about procedures adopted for the selection of the segments and the possible limitations of the methods used.

As with all demand analysis, it is also important to take into account dynamic factors. The past is often an incomplete guide to the future. Therefore, changing trends in demand and possible alterations in market segments with the passage of time must also be considered.

In Chapter 5, Habibullah Khan and Francis Tan present the results of an econometric study designed to determine the extent to which tourism demand in Singapore is complemented by demand for tourism in the ASEAN region, particularly by demand for tourism in its nearby countries — Malaysia, Indonesia and Thailand and also consider the influence on tourist demand of traditional explanatory variables such as income levels of tourists and prices. This enables them to draw interesting conclusions about the type of tourism policies that Singapore should pursue. The results have important implications for regional policies for promoting tourism and involve the first formal modelling of the influence of 'neighbourhood effects' on tourist demand in countries in the same neighbourhood.

Terrorism has a major negative impact on the demand for tourism. Initially in Chapter 6, Kunal Chattopadhyay reviews the relevant literature about the impact of terrorism and violent political unrest on tourism and the costs involved. He then focuses on the consequences for tourism in India of political violence there giving particular attention to its effects on tourist demand within India. The adverse tourism consequences of the activities of India's Maoist rebels are given particular attention. His exposition also provides some interesting information about domestic tourism in India. For example, he outlines the motives for domestic tourism in India and provides data on the spatial distribution of tourism in India.

1.3. The Supply of Tourist Services

Most of the contributions in Part III of this book focus on international aspects of the supply of tourism services. Topics include the internationalisation of the hotel sector, a case study set within a global context of the development of the lodging sector in China; changes in the role of tourism and travel intermediaries in recent times, primarily as a result of advances in information technology; the significance of air transport for tourism, and the consequences for the geographical distribution of tourism of technological advances in transport. It is argued that these advances influence the nature of the tourism area life-cycle.

It is well-known that the tourism sector is becoming increasingly globalised. Zélia Breda and Carlos Costa (in Chapter 7) outline and review a range of modern theories about why and how firms have become more international in their operations. They argue convincingly that significant differences exist between the reasons for and patterns of internationalisation of manufacturing firms and those in the service industry, such as in the hotel sector. To date, most theories of the internationalisation of business firms have been based on the behaviour of manufacturing firms. After outlining general theories of factors leading to international operations by firms, Breda and Costa focus on the behaviours of firms in the hotel sector. They find that the most common practice is for hotels to begin international operations by means of management contracts with overseas organisations and businesses. Franchising and foreign investment is less common. However, the situation is not static. They suggest that patterns of internationalisation in the hotel sector could be changing and that as hotel groups obtain more experience in overseas markets, the vehicle for their involvement is liable to alter, for example, they may be more inclined to undertake direct investment.

The development of China's hotel industry provides some support for the above observation of Breda and Costa. Larry Yu and Huimin Gu (in Chapter 8) outline the way in which China's hotel industry has evolved in an international setting and has adapted to, and reflected changes in the structure of the Chinese economy since China began its reforms in 1978. First, with foreign involvement, China's lodging sectors catered mainly for inbound tourists, then increasingly for domestic tourists, and now it has a focus on outbound Chinese tourists. Yu and Gu analyse how international involvement in the Chinese hotel industry has helped China catch up with more developed economies in managing its hotel industry and how in the latest phase, some Chinese hotel companies are investing abroad. Both supply and demand side features of China's lodging sector are explored. These

include changes in the productivity of China's hotel industry and its adaptation to change in the demand for lodging services.

Aspects of the internationalisation of the tourist industry are also covered in the contribution of Nevenka Čavlek in Chapter 9. She examines the changing role of travel and tourism intermediaries giving particular attention to the effect on travel and tourist agents of advances in information and communication technology (ICT). Some 'futurists' predicted that the services provided by travel and tourist agents would be little demanded given advances in ICT. According to the research results reported by Čavlek, the fact of the matter is, nevertheless, that travel agents still account for most of the holiday bookings in Europe and USA. However, there have been some changes in the composition of services supplied by travel and tour agents and significant structural changes in this segment of the tourist industry. This market has become more concentrated in hands of fewer firms and through mergers, acquisitions, vertical expansion and horizontal (backward) integration, large-sized travel and tourism agencies have become even larger. As a result, they have achieved greater economies of scale, more bargaining power and have gained more economies from increased scope. Furthermore, they have increased the extent of their international operations. The more successful intermediaries have used electronic and internet possibilities to expand this market. They are now able to offer more economic tours customised to better meet the needs of individual tourists who can 'pick and mix' tour combinations using the internet. Čavlek is confident that tourist intermediaries will still continue to play a major role in the travel and tourism market.

Adequate transport, especially air transport, is essential for the development of tourism. The contribution of Papatheodorou and Zenelis (Chapter 10) explains the importance of the transport sector for tourism and concentrates on the role of air transport in developing tourism. Airlines carry over half of the world's international travellers and many countries (such as island countries and those consisting of archipelagos) are almost completely dependent on air services to carry their international tourists. After considering the influence on tourism of the supply of air transport and its attributes, they examine the evolution of the airline sector. This evolution has involved changes from a situation dominated by flag carriers, to the emergence of charter airlines associated with large tourist operations and in more recent times, radical changes brought about by market penetration by low cost carriers. They show that both institutional changes and technological innovations have played a major role in the changing structure of

the airline sector and in the type of services supplied by it. They point out that while these changes have helped to grow the tourist industry in some regions and countries, environmental problems have emerged as a result of this growth.

Airports also play a vital role in tourism development. Papatheodorou and Zenelis explain why and consider the occurrence of competition between localities to attract airlines and tourists to land in their locality rather than others. They also discuss the role that information and communication technologies are playing in facilitating modern air transport. They argue that 'aviation policies concerning the smooth cooperation of tourism and aviation can make a big difference in the prosperity of a leisure destination'. Today, it is impossible for tourism to thrive in many parts of the world without adequate and reliable aviation services.

Kato and Mak (Chapter 11) provide an interesting long-period case study of how technical progress in transport has influenced the development of tourism in Hawaii. They point out that tourism in Hawaii depended initially on shipping and subsequently on air transport and altered as transport innovations began to occur. They find that as a consequence of innovations in transport that the number of tourists visiting Hawaii as a function of time is of a logistic form. This means that it is similar in form to the first portion of the area life cycle proposed by Butler (1980). They find however, that the causes of this development differ from that proposed by Butler. They ascribe this mainly to changes in the supply and nature of transport as a result of technical innovation. They are convinced that the slowdown in tourism growth in Hawaii is not due to environmental or social deterioration which would be the case if Butler's theory applied.

1.4. Studies of Particular Segments of the Tourist Industry

The tourism industry and the reasons why people engage in touring are diverse. Studies of the tourism industry can, therefore, be divided into many different focal segments. Studies may, for example, be segmented by the socio-economic attributes of tourists (for instance, their age, gender, income level, nationality and level of education), by the geographical location of the tourism, and by its purpose (for instance, for leisure, visiting friends and relatives, business, seeking medical treatment, education, adventure, religious experiences and so on). Many of these segments can be further divided into sub-segments. Only a limited number of these segments are covered in Part IV of this book, but they provide worthwhile insights into particular segments of the tourist industry.

Leisure tourists and recreationists are drawn to particular locations by their attractions. Wanhill in Chapter 12 examines the attributes of attractions, considers the importance of their 'imagescape' and support services as factors in generating visits to attractions, and also shows that their ability to draw visitors depends on the social and cultural context in which they are developed. He gives particular attention to the role of innovation in generating demand and economic returns from attractions. Apart from linking this part of his study to Schumpeter's (Schumpeter, 1952) theory of business innovation and the economic dynamics of the development of capitalism, Wanhill suggests that the institutional ownership and management of attractions (that is, whether this is in the hands of public bodies, voluntary organisations or private business) is influenced by the extent to which attractions provide scope for innovation. Those attractions which afford little or no scope for innovation are likely to be in the hands of public bodies whereas those where significant innovation can occur are likely to be business-dominated. The best way to develop attractions and suitable methods of regenerating localities by developing attractions, including industrial attractions, is considered by Wanhill along with strategies that may be adopted to maintain visitor attendance. The question of appropriate admission charges for attractions is complex. Wanhill points out that the normative economics of this varies depending on whether the attractions are supplied by the public sector, voluntary organisations, or private enterprises. This leads on to the interesting question of what constitutes the successful development of an attraction. Obviously, this depends on the purpose or objectives of those developing it. The relevant test, may, therefore, differ depending on whether the attraction is supplied or developed by a public body, a voluntary organisation or a commercial business. For instance, the public sector may treat the supply of some attractions as merit goods and most voluntary bodies have non-profit missions.

Different attractions cater for different segments of the tourism market. Stephen Wanhill's focus is on attractions that cater for the leisure-market and which are site specific once supplied. Travelling for medical attention and for education is not location specific. Beach, sun and surf tourism is to some extent site specific. These are all additional topics considered in Part IV of this book. In Chapter 15, Wanhill provides a worthwhile analysis of the business of amusement parks which are also site specific (once established). Stephen Wanhill (personal communication, 29/4/11) has mentioned that Chapter 12 reflects his experience in researching and funding attractions when he was at the Wales Tourist Board.

In Chapter 13, Grace Lordan examines the development of international health tourism. After providing evidence on its economic importance, she gives reasons why it is happening, charts its growth using internet-based data, and assesses the effects of this tourism on host countries. Host countries are usually developing nations but not always low-income countries. For example, Singapore is a country in which incomes are relatively high but which also caters for a substantial number of inbound medical tourists. She then outlines and addresses major concerns that have arisen about medical tourism and specifies ways in which these could be addressed. She believes that international medical tourism will continue to grow, particularly because populations are ageing in higher income countries. Consequently, the urgency of addressing several of the significant issues which she raises (such as the risks faced by patients in seeking medical services abroad) is likely to grow in importance.

Travelling abroad for education has become a major international economic activity in recent years. Several higher income countries earn a substantial amount of foreign exchange from this activity as pointed out by Duhs in Chapter 14, OECD data for 2010 indicates that over 20% of students in Australian tertiary education institutions were international students as were 13–15% of tertiary students in Austria and the UK, Switzerland and New Zealand. The number of foreign students is also substantial in several other countries. Today, many nations are seeking international fee-paying students for economic reasons. However, if some standard definitions of tourists are adopted, many of these students would not be classified as tourists, because they stay in their host country for more than a year. Nevertheless, it is not entirely inappropriate to discuss this topic in this book.

In his contribution, Alan Duhs uses Australia as a case study to identify relevant economic and related issues that have arisen in the development of international travelling for education and considers the future for educational tourism. He foresees the possibility that growth in this type of tourism will taper off in the future and may even decline. Particularly, the number of outbound students from China and India may decline as these countries continue to experience economic growth and strengthen their own educational institutions.

In Chapter 15, Stephen Wanhill (apart from applying concepts of attractions developed in Chapter 12) outlines the historical developments of amusement parks, gives reasons for their development, and analyses the economics of their operations as well as market influences on this. Strategies are identified that are expected to improve the economic performance of amusement

parks. Particular attention is given, among other things, to the economic implications of the high level of overhead costs of most amusement parks, the mixture of their attractions, changes in their attractions in order to generate repeat visits, their location, and issues involving queuing. Wanhill observes that a large proportion of the revenue of many amusement parks comes from sales of incidental items such as food and drink. It is also evident that the commercial development of amusement parks involves a considerable degree of business risk, and therefore, banks limit their financing of such parks. Choosing an appropriate theme for an amusement park is of considerable economic importance. Wanhill observes that 'complex or scholarly themes have difficulty producing the emotional experiences necessary to attract family groups and have limited repeat visit potential'.

To some extent, cruise ships have become floating amusement parks. At least, amusement possibilities are an important part of the cruise product-mix today. Adrian Bull explores cruise tourism as a segment of the tourism industry in Chapter 16.

He reports that cruising is divided into several sub-markets, the industry is becoming increasingly concentrated in the hands of just a few suppliers and is oligopolistic in nature. He shows that there has been substantial growth in the number of cruise passengers since 1990, examines the nature and geography of cruising markets and details the structure and marketing strategies of the industry. Particular attention is given to product differentiation as a competitive strategy. Furthermore, factors that influence the demand for cruising are identified and the types of changes that have occurred in cruising products in recent years are outlined. These changes partly reflect changing tastes as well as the availability of new technologies. Significant innovation has occurred in this industry. The economics of cruise ship operations and the sourcing of factor inputs (including cruise ships) by this relatively 'footloose' industry are considered as well as the controversial subject of the economic impact of cruises on destinations.

Beaches, sun and the surf combined are important magnets for tourism and recreation in many coastal locations. After summarising the uses made of sandy beaches in sunny places and providing background information, Lazarow, Raybould and Anning (Chapter 17) outline economic methods that may be applied to measure the economic value of beaches tourism and recreation. The purpose of such methods (for example, the travel cost method, contingent valuation, choice modelling) is usually to measure how much tourist and recreationists are willing to pay to utilise the resource, access to which in most cases is not marketed. In Australia, for instance, as in Britain, there is open access to beaches. These beach valuations can

(in suitable circumstances) be employed in social cost-benefit analysis (see Part V) to determine whether the economic value of beach maintenance and improvements by public authorities exceeds the cost involved, that is whether such expenditure is worthwhile from a social economic point of view. These valuation methods depend for their accuracy on the basic assumptions of neoclassical economic being satisfied, such as strong assumptions about the rationality of individuals (see Tisdell and Wilson, 2012). Empirical evidence, however, demonstrates that these methods can have serious limitations in some circumstances (see Tisdell and Wilson, 2012). This is especially so when they are applied to first-time visitors (tourists) compared to more frequent visitors (recreationists). Basically, this is because of knowledge limitations and bounded rationality. However, this is not a serious problem in the surveys by Lazarow, Raybould and Anning because most of the visitors surveyed would have been repeat visitors.

The second portion of the contribution by Lazarow, Raybould and Anning involves case studies based on the beaches of the Gold Coast in Queensland, Australia. First, they estimate the direct total expenditure on surfing on the Gold Coast. Strictly this is not economic valuation as such but is an element of economic impact analysis (see Chapters 18 and 19). They then report the results of a contingent valuation study of the willingness to pay for alternative measures to protect the beaches of the Gold Coast from erosion and consider the sensitivity of the results to variations in the information provided to those surveyed. They found, in their particular case, that there was little effect on the level of willingness to pay for beach protection for the changes in information which they supplied. Nevertheless, this is not always so (see, for example, Tisdell, 2006) and depends on the prior information which respondents have about the focal good, as noted by Lazarow, Raybould and Anning. In many circumstances, it is inappropriate to assume that tourists are recreationists and are fully informed and therefore, one needs to be cautious in applying methods of economic valuation based on neoclassical economics. However, that does not mean that they are always inadequate methods of economic valuation.

1.5. Cost-Benefit Analysis, Public Economics and Tourism

In Chapter 18, 'Tourism, projects and cost-benefit analysis', Norbert Vanhove discusses tourism project appraisal and argues that it is important that such appraisals be done from both a private and social point of view. If tourism projects are to succeed, they must be economically viable

from the point of view of private investors. Furthermore, it is also desirable for them to provide net social benefits because, among other things, such projects often require significant investment in infrastructure by governments. Both private and social cost-benefit analysis are valuable means for completing the economic assessment of tourism projects. Vanhove considers private cost-benefit analysis to be a micro-approach and social cost-benefit analysis (SCBA) to be a macro-approach because the latter takes into account the economic side-effects of projects. In SCBA, allowance is made for externalities and other market failures but not in private CBA, as is demonstrated by Vanhove.

After placing CBA in context, Vanhove outlines the basic steps that need to be followed in applying CBA. These are:

1. Identifying the items involving costs or benefits;
2. Quantifying these;
3. Placing economic values on these; and
4. Allowing for the time-factor in the way usually done in estimating the net present value or the internal rate of return from projects.

An informative feature of Vanhove's coverage of social cost-benefit analysis is his comparison of it with economic impact analyses, such as analyses based on the use of income and employment multipliers, input–output analysis and compatible general equilibrium models. The latter are given particular attention in Part VI of this book. Vanhove also demonstrates in an illuminating manner, the difference between social cost-benefit analysis and economic impact analysis by his examination of a project involving a special event, namely a formula one motor racing event.

After identifying potential problems, including how to allow for risk and uncertainty about costs and benefits that are likely to arise in applying social cost-benefit analysis, Vanhove concludes by strongly advocating the use of social cost-benefit analysis as a means for assessing tourism projects. In doing so, he reinforces a similar view to that expressed by (Stabler *et al.*, 2010). Nevertheless, the question remains of why there is a tendency in practice to rely so heavily on economic impact analysis in assessing tourist projects. Some suggestions about why this is so are given in Tisdell and Wilson (2012). Possible reasons include the greater cost of completing cost-benefit analysis compared to some types of economic impact analysis, the insufficient attention of CBA to the regional distribution of economic impacts, and the greater political clout of those who depend for their livelihoods on *marketed* goods compared to those desiring non-marketed goods. In many cases, results from

both social cost-benefit analysis and economic impact analyses are useful for assessing the same tourist project because these methods measure different attributes of it. However, funding for the purpose of decision-making (storage, collection and processing of data and so on) is usually limited and the optimality of imperfect decisions (Baumol and Quandt, 1964; Tisdell, 1996) needs to be kept in mind. Taking into account such factors, bounded rationality is likely to influence the choice of decision-making techniques for assessing tourism projects as well as the optimal degree to which they should be refined from applications (Tisdell, 1996).

Tisdell and Wilson in Chapter 19 ('Public economics and the assessment of tourism developments and policies') give further consideration to some of the issues raised by Vanhove, particularly the value of social cost-benefit analysis and economic impact analysis as a means to assess tourism developments. Their discussion is set within the framework of public economics. Sustainability issues are examined and the costs and benefits of inbound tourism are considered as an illustration. Subsequently, drawing on the relevant literature, economic implications of taxes and subsidies on tourism are reviewed. This contribution then considers the application of the user-pays principle to tourism and focuses on the desirability (or otherwise) of charging fees for entry to national parks and protected areas. The tourist services provided by these government-supplied facilities are modelled as quasi-public goods. Many other facilities supplied by governments and used for tourism and recreation also have this quality, for example museums and art galleries. However, the services provide by natural areas are very diverse. Their capacity to cater for tourist and recreationists is just one of their economic attributes. They normally provide a range of ecosystem services and these all need to be taken into account in determining their economic value and in devising appropriate policies for their use and conservation.

In Chapter 20, Boyd Blackwell, Mike Raybould and Neil Lazarow present a case study using public economics to assess expenditures by two Australian local governments on beach protection and maintenance. Access of users to these societal assets is free in Australia. In their study they focus on beach and foreshore expenditures by the Gold Coast City Council and the Sunshine Coast Council (both of which are located in Queensland and which can be reached in under two hours driving from Brisbane) and report these expenditures for 2010–2011. They then provide estimates of the economic recreational benefits obtained from these beaches in each of the two local government areas. They find that recreational benefits from beaches in these

areas are very high compared to the expenditure by the councils on beaches. However, they did not have data to estimate the marginal returns to expenditure on beaches in these local government areas nor to estimate benefit-expenditure ratios corresponding to different levels of expenditure on beach conservation and maintenance. Therefore, the study remains indicative from a cost-benefit point of view.

An important observation by these authors is that beach and foreshore assets on the Gold Coast and the Sunshine Coast differ markedly in nature. When the Gold Coast was increasingly urbanised, building on the sand dunes abutting its beaches was not prohibited. However, when later development of the Sunshine Coast occurred, the foreshore dunes were protected as a buffer zone between the sea and buildings. The dunes constitute a form of natural capital and provide significant protection from seaside erosion which is likely to increase with climate change. The Sunshine Coast Council therefore, needs to spend less on beach protection and maintenance than the Gold Coast City Council. From several different points of view, the protective zoning of a wide strip of foreshore coastal dunes on the Sunshine Coast has been a worthwhile investment in the conservation of natural capital. It results in less economic investment being needed to protect beaches, buildings and so on, and it provides several ecological benefits (for example, the conservation of wildlife species). This is evident on the Sunshine Coast of Queensland.

1.6. Inter-Industry Features of Tourism and Tourism Satellite Accounts

Contributions in Part VI mostly concentrate on the economic impact analysis of tourism. Tourism is complex from the point of view of the analysis of its economic impacts because it draws on services and commodities supplied by several industries and therefore, studying its economic impacts requires inter-industry analysis and accounts. The contributions in this section outline contemporary techniques that have been used for this purpose and also provide application of these techniques. Topics such as tourism satellite accounts, and tourism in relation to inter-industry models, input–output analysis and computable general equilibrium (CGE) are discussed in Part VI.

Stephen Pratt's chapter 'Estimating tourism impacts using CGE models: a historical review and future developments', provides a very useful introduction to Part VI. In this chapter, he considers 36 articles which have applied CGE models to tourism-related topics. He organises his in depth

review by dividing these applications of CGE models into seven categories. These are:

1. Economic impacts of tourism booms and busts;
2. The economic consequences for tourism of natural and man-made disasters and their overall economic impacts;
3. Trade-related issues involving tourism;
4. Taxation and tourism;
5. The environment and tourism;
6. Tourism and special events; and
7. Economic impacts of 'shocks' or occurrences on segments of the tourism industry and the economic impacts on the wider economy of changes in segments of the tourism industry.

Therefore, the range of application of CGE models is quite wide. However, Pratt argues that it is desirable to give greater attention to sensitivity analysis in this modelling and to dynamics than in the past. He also believes that it would be beneficial to have more CGE applications examining the environmental impacts of tourism and exploring its consequences for poverty. He states that there is scope for greater creativity in CGE modelling and compared to CGE modelling, he finds IO analysis to be inadequate.

Chapter 22 is entitled 'Tourism Satellite Accounts and their application to CGE modelling'. In this chapter, Tien Pham and Larry Dwyer provide a detailed outline (with examples) of Tourism Satellite Accounts (TSAs) and CGE models. These methods are assessed and the connections between TSAs and CGE models are carefully explained. TSAs for Australia are used to illustrate and explain TSAs, and a CGE model for the state of Queensland, Australia, illustrates CGE modelling and its application to tourism-related issues. They conclude by providing an overall evaluation of the relevance of TSAs and CGE models to the enhancement of our economic knowledge about tourism. They conclude that both techniques are valuable and emphasise that TSAs and CGE modelling are complementary.

The next two contributions in Part VI utilise input–output analysis to analyse regional economic issues involving tourism. Eugene Tian, James Mak and Ping Sun Leung (Chapter 23) examine the direct and indirect contributions of tourism to Hawaii's GDP. They find that in 2010, it accounted for 16.4% of Hawaii's GDP when direct and indirect effects are accounted for and 22% if induced effects are included. This is significantly less than an estimate published by the First Hawaiian Bank. They stress that as a rule, reliance on the tourism satellite account alone to estimate the economic

impacts of tourism results in underestimates. They also claim that if a destination already has an input–output table, TSAs are not needed to estimate tourism's contribution to GDP.

Eusébio, de Castro, and Costa use input–output analysis in Chapter 24 to complete an economic analysis of tourism in the Central Region of Portugal. A distinguishing feature of their study is their analysis of different economic impacts of various clusters or segments of tourists according to their socio-demographic attributes. They examine the possibility of using this information to refine the marketing of tourism for this region by improving its targeting of these different tourist clusters or segments. They also provide an informative historical review of earlier studies of the economic impacts of tourism.

1.7. International Economic Issues and Tourism

Although all the chapters in Part VII deal with international economics and tourism, it should be noted that several other chapters in this book also consider economic aspects of international tourism. For example, they are considered in Chapter 5 ('Tourism demand in Singapore: estimating neighbourhood effects'), in Chapter 7 dealing with the internationalisation process of tourism firms, and in several other chapters, including most contributions in Part VI dealing with the economic impacts of tourism. All the chapters in Part VII contain a significant amount of economic theory although two also pay attention to empirics.

In Chapter 25 ('Globalisation in tourism: A theoretical and empirical trade examination'), Nowak, Petit and Sahli point out that tourism is a composite product involving multiple sequential stages. Therefore, scope exists for international specialisation in supplying different parts of this product and in catering for different stages in its supply. They hypothesise that specialisation in different stages will tend to occur in accordance with comparative advantage. They develop a simple analytical framework to explore this aspect. They then use the revealed comparative advantage index to investigate empirically the international division of tourism production. They find empirical support for their hypothesis that international specialisation in supplying parts of the tourism chain occurs. This specialisation accords with differences in the comparative advantages of potential suppliers of the components of tourism.

In Chapter 26 ('International tourism: its costs and benefits to host countries'), Chi-Chur Chao and Pasquale Sgro employ comparative statics relying on neoclassical economic modelling to examine the costs and benefits to a

host country of inbound tourism. To do so, they extend the model put forward by Copeland (1991). Within their model they consider the costs and benefits of various public policies relating to tourism. For instance they consider the consequences of a tax on tourism. They argue that the implications of their model 'lends support to the levying of taxes on inbound tourists'. While this is so within the model considered, this policy issue is probably more complicated in practice (see, for example, Tisdell, 1983). Chao and Sgro also point out that the short-run economic advantages to a host country of an increase in inbound tourism may be offset to some extent if it results in the 'Dutch Disease', a consequence of which is likely to be reduced capital formation in the non-tourism sectors of the host country and the host's foreign reserves may drop. So, short-run and long-run considerations need to be balanced against one another.

In Chapter 27 ('Inbound tourism and economic growth: A review of theory and empirics'), Mondher Sahli and Simon Carey find that theoretical studies of whether inbound tourism stimulates economic growth are inconclusive but they state that 'empirically, the notion of tourism-led growth finds strong support'. They conclude that more research is required to discover the processes linking substantial tourism exports with economic growth in host countries. In practice, the processes involved are likely to be complex and may vary between situations. In some instances, a substantial rise in inbound tourism may result in sustained economic growth but not in all cases. It is, therefore, necessary to isolate the reasons for such differences.

1.8. The Contribution of Tourism to Economic Development

Part VIII of this book contains five contributions, the first of which discusses generally the relationship between tourism and economic development. The remaining contributions are case studies concentrating respectively on tourism and development in Goa (India), Arunachal Pradesh (India), Zhangjiajjie (China) and the Fiji and other Pacific island countries.

The title of Chapter 28 is 'Economic impacts of tourism, particularly its potential contribution to economic development'. In this chapter, Tanja Mihalič after pointing out that measures of economic development and economic growth (as, for instance indicated by rising GDP or GDP per capita differ), provide useful background information on the relative importance of tourism in selected advanced, emerging and developing countries. Then taking into account sectoral change, she outlines the thesis that a tourism cycle exists and relates this to economic growth. She provides empirical evidence

that advanced countries usually have a deficit in their international tourism account whereas emerging and developing countries normally have a surplus. She subsequently considers different ways in which inbound tourism may contribute to economic development and reduce the income gap between rich and poor nations. She finds that inbound tourism brings in foreign currency (which may be used for the import of capital and new technologies as suggested by Tisdell (1993) in China's case), has other development benefits and creates employment. Furthermore, inbound tourism can enable host countries to appropriate extra economic value from their environmental assets as a result of visits by inbound tourists. The assets involved may be natural goods or man-made ones in limited supply. The extra economic value appropriated as a result of inbound tourism due to their presence may be obtained directly and indirectly. Basically, inbound tourism enables rents or extra rents to be earned from a nation's tourism assets, provided their supply is not perfectly elastic (see, for instance, Tisdell, 2001). Mihalič also points out that situations can occur in which the above hypothesis needs to be qualified.

The next two chapters (29 and 30) consider tourism development in two very different parts of India, namely Goa in its west and Arunachal Pradesh in its far east. These two states of India differ significantly in the extent of their economic development, their types of tourist attractions, their accessibility and the extent to which they attract tourists. They also differ considerably in their geographical attributes and their historical background. For example, Goa (a former colony of Portugal has coastal attractions but Arunachal Pradesh (a part of India's Northeast Frontier) is landlocked and most of its terrain is mountainous. It receives few tourists compared to Goa which has become a well-known international tourist attraction.

In Chapter 29, Zélia Breda and Carlos Costa analyse the evolution of Goa as a tourist destination paying particular attention to the socio-cultural conflicts that this development has generated and the environmental changes that it has brought about, many of which make Goa less attractive as a tourist destination. Special consideration is given to the public administration of tourism development in Goa and its shortcomings. However, such shortcomings are not peculiar to Goa. For example, tourist developers (with differing rates of success) may 'capture' public administrators and gain their support for projects that serve their special interests but which are contrary to the public interest. The extent to which tourist developers are able to do this depends on the nature of the political system but all political systems are prone to such problems.

According to Amitava Mitra and Maila Lama, Arunachal Pradesh is one of the most backward states economically of India. However, it is rich in natural resources, in natural environments and in ethnic diversity. These authors, therefore, argue in Chapter 30 that it has tremendous tourism potential, especially to support ecotourism. However, this potential is far from being realised because of several impediments identified by Mitra and Lama. They argue that if these obstacles can be reduced, tourism growth can make a substantial contribution to the economic development of Arunachal Pradesh.

Drawing on their survey data and other data, Chao-zhi Zhang and Julie Jie Wen analyse in Chapter 31, the process of tourism development at Wulingyuan, a World Heritage site in the Zhangjiajie National Park located in Hunan Province in China, not far from Zhangjiajie city. The major contributor to tourism development in this area has been made by the influx of Korean tourists, the so called 'Korean Wave'. Zhang and Wen explore and explain how and why the Korean Wave emerged and examine its impacts. They argue that both private (market) initiatives and government support played important complementary roles in the development of Zhangjiajie as a significant destination for Korean tourists. In their view, this complementary model of the marketing of inbound tourism might be successfully applied in other parts of China and elsewhere. This is an interesting in-depth study of tourist development in a local area.

Part VIII concludes with a chapter on 'The contribution of tourism to the development of the Fiji and other Pacific Island countries'. Harrison and Prasad point out that in recent years, the rate of growth of international arrivals to the Pacific Island countries have exceeded the rate of increase in global tourism and that inbound tourism is a major contributor to economic activity in several Pacific Islands countries (PICs), even though its importance in that regard varies greatly. Some indication of the relative economic importance of inbound tourism to PICs is obtained by comparing their international tourist receipts as a percentage of their GDP. For 2007, it is found that this was 67.1% for Palau, 28.0% for Vanuatu, 23.0% for Fiji, and 20.5% for French Polynesia. By contrast, it was only 0.1% for Papua New Guinea, 1.7% for the Solomon Islands, 2.5% for New Caledonia, and 2.9% for the Marshall Islands. These percentages, however, are based on gross rather than net tourism receipts. Because of large import leakages which occur in order to service tourism in these small island economies, their net receipts can be expected to be much lower than their gross receipts. After providing general background on the nature of tourism in the PICs and giving particular attention to recent tourism trends in the

Fiji, Harrison and Prasad consider whether tourism development generates a socially appropriate form of economic development, and in doing so give particular attention to its ability to alleviate poverty drawing on evidence from the Fiji. In doing this, they report the results of a survey of the corporate social responsibility activities of selected Coral Coast hotels in the Fiji.

1.9. Environmental and Conservation Matters Involving Tourism

Part IX contains the largest number of contributions in this book. This is a reflection of the importance of natural environments and resources as tourist attractions and the view that with increasing global production and levels of human population, such environments are under growing threat from increasing tourism and other causes such as growing demand to use these resources to provide materials for physical economic production. In addition, some are threatened by man-made pollution which causes their environmental deterioration. Therefore, there is increased concern about how best to manage the use of these resources, including their use to cater for tourism. Furthermore, there is a desire to find means that are likely to be effective in fostering the conservation of environmental resources. For instance, the promotion of ecotourism is widely seen as an effective means for satisfying economic and conservation objectives. Whether it is, however, is a subject of continuing debate.

The contributions in Part IX address a variety of subjects. Some involve mainly analysis and discussions of concepts whereas others focus on specific case studies, for instance, a study of the management of ecotourism in a part of Japan, and a case study of the management of tourism involving diving in Egypt.

Kristin Jakobsson and Andrew Dragun introduce Part IX by providing, 'An overview of environmental and conservation issues of consequence for tourism policy' (Chapter 33). They identify a range of environmental and conservation issues that tourism policy needs to address, and point out that devising appropriate and socially acceptable tourism policies often requires complex compromises and trade-offs. They argue that environmental and conservation issues need to be given increasing attention in devising tourism policies and in evaluating tourism. Because tourism has grown globally at a rapid rate and the supply of many of the natural resources on which it relies are threatened by alternative economic uses, a serious economic problem has developed. The problem is exacerbated by the occurrence of market failures and missing markets.

They point out that the development of tourism can both contribute to environmental conservation and hasten environmental loss. Tourism can involve the supply of pure public and quasi-public goods and can generate positive as well as negative externalities or spillovers. Market systems fail to ensure optimal economic and social outcomes in such cases and hence, government policy intervention can be warranted. However, the existence of such market failures is, as Jakobsson and Dragun stress, insufficient to justify government intervention because this intervention involves transaction costs. Furthermore, political failures do occur and in some cases, they result in greater economic harm than no public intervention. Therefore, the circumstances of each case need to be assessed before deciding on whether intervention with tourism development is justified.

An informative feature of this contribution is its provision of examples. For example, cases are listed in which ecotourism has resulted in resource conservation rather than environmentally destructive development. These positive examples are, however, balanced by the authors giving cases in which tourism development has added to environmental deterioration. For instance, they point out that energy use by the tourism industry contributes to global warming.

Following the publication of *Our Common Future* (World Commission on Environment and Development, 1987), it has become widely accepted that achieving sustainable development is desirable. How and to what extent such development can be achieved is subject to continuing debate (see, for example, Tisdell, 2005, 2009). A consequential effect of this development has been a growing interest in the sustainability of various sectors of the economy, including tourism. Sustainable tourism development is the subject of Chapter 34 of this book. In this chapter, after introducing the concept of sustainable development, Dr Sathiendrakumar discusses market failures in tourism activity because such failures can be a source of unsustainable tourism development. After providing background information about market failures and the effects of tourism development on the environment, he concentrates on the concept of sustainable tourism and considers the extent to which sustainable tourism development is possible. Possible management strategies which can make for greater sustainability of tourism development are outlined and discussed. In conclusion, Dr Sathiendrakumar emphasises that the pursuit of sustainable tourism development requires cooperation between the private and the public sector and as well usually involves economic sacrifices. Furthermore, initiatives designed to promote sustainable tourist development need to be funded adequately.

Ecotourism is often promoted as resulting in a win–win situation, namely a situation in which both conservationists (environmentalists) gain as well as developers. In particular, ecotourism development has been touted as an effective means to conserve nature, or more specifically biodiversity. In Chapter 35, entitled 'Ecotourism as an instrument to conserve biodiversity', Dr Andreas Hohl considers this view critically and outlines conditions that need to be satisfied if ecotourism is to play an effective role in conserving biodiversity. In his thought-provoking contribution, he outlines significant obstacles that can be encountered in depending on ecotourism development to conserve biodiversity. Nevertheless, he concedes that 'ecotourism can play a central role in helping part of biodiversity through the [present] survival bottleneck' facing nature. Although, it can only partially contribute to the conservation of biodiversity, a partial contribution is better than none at all.

In Chapter 36, Esparon, Stoeckl and Gyuris explore the economics of ecological certification of tourism (ECO certification) on the assumption that such certification 'allows *responsible* enterprises to be identified so that consumers [tourists] who want to practice sustainability in their actions are able to make appropriate choices'. In order to examine the economics of such schemes, the effects of an ecological tourist certification programme in Australia are considered. The purpose of this certification scheme is 'to assure travellers that certified products are genuine, are of high quality and are backed by well-managed commitment to sustainability'. A contingent valuation study is undertaken to determine the willingness of tourists to pay for this certification. Assuming that ECO certified producers have to charge an increased price for their produce, some travellers will buy their product while others will not. Therefore, they find that in the short-run the profits of certified tourist enterprises may fall. However, in the medium-term (depending on the ability of travellers demanding sustainable tourism options to locate certified tour operations) the profits of ECO certified tourist enterprises could rise. Nevertheless, in the long-term, the profits of ECO certified tourist enterprises are unlikely to be maintained at above normal levels if it is easy for new firms to begin to competitively supply certified tourism products. This is a long-run implication of economic theory of perfect competition.

In Chapter 37, Sally Driml outlines various methods used to measure the economic value of national parks and protected areas as tourist attractions and reports the results of their application in Australia at regional and state levels. After providing background on different economic approaches to this valuation, she concentrates on the application of expenditure methods as a guide to the economic value of Australian national parks and protected areas.

She reports on and discusses the empirical findings from several Australian studies of these valuations, including those in which she has participated. As she points out, expenditure estimates are usually a part of (or a precursor to) economic impact analysis. There is considerable political interest in the regional economic impacts of national parks and protected areas. The reported results show that 'tourism expenditure associated with visiting protected areas is an important component of tourism in many regions in Australia and for Australia as a whole' and that annual public expenditure on tourism management in protected areas in Australia falls far short of their contribution to Gross State product in the states for which information is available.

Driml also brings attention to the 'conservative spending' measure of expenditure generated by tourist attractions, such as national parks and protected areas, and the fact that many alternative measures over estimate such expenditure. The 'conservative measure' was used by Tisdell and Wilson (2002) in studying the expenditure generated in the Bundaberg region by the Mon Repos turtle attraction and subsequently, it was also employed by Lindberg and Denstadii (2004). While there are some practical difficulties (noted by Driml) in estimating the conservative measure (for example, it relies on interviews with visitors), it provides a more accurate measure than one alternative, namely the alternative of attributing the total expenditure in a region by all those who visited a particular tourist attraction to the presence of this attraction. This estimate is normally a gross over estimate of the regional expenditure that can be really attributed to the presence of the attraction.

Takayuki Arima, Toshio Kikuchi and Yoshihiro Kuronuma contribute an in depth study in Chapter 38 of the physical, biological and other impacts of tourism on a natural environment in Japan and outline and examine the application of socially agreed rules to manage those impacts. The main focus of their case study is the management of tourist visits to Minami-jima island in Ogasawara group of islands located in the Pacific Ocean to the east of the main islands of Japan. The Ogasawara Islands were listed as a World Heritage site in 2011, and are promoted as an ecotourism destination.

The contribution of these authors begins with an outline of the historical development of interest in Japan in ecotourism and they specify a spectrum of concepts of ecotourism. The predominant view of the Japanese about what constitutes ecotourism is located by the authors in this spectrum. They then explain why the management of ecotourism on Minami-jima island depends on adherence to self-imposed rules and how these rules were developed. Subsequently, they provide data on the effectiveness of the implementation

of these rules. They conclude that these voluntary rules have been effective in managing tourism on Minami-jima island and its environmental impacts. However, they are concerned that visitor numbers to the Ogasawara Islands will increase (particularly now that they have been World Heritage listed) and social pressure may mount locally to abandon these rules. For example, social pressure may grow to allow an increasing number of tourists to visit Minami-jima island in larger groups than is currently agreed. This type of social approach to governing the use of common resources based on voluntary adherence to social rules is rare in Western countries but its value has been extolled by Ostrom (1990). This study by Arima, Kikuchi and Kuronuma illustrates (for this case) the evolution of institutions for such collective action in relation to tourism management. Both the evolution and the effectiveness of rules for collective management of natural resources are however, likely to depend on the specific circumstances (as this study indicates) and on the nature of cultural values where the rules are developed.

The last chapter in this book 'Ecosystem services approach to dive tourism management: A case study, Ras Mohammed National Park, Egypt' is by Rady T Tawfik and R Kerry Turner. Apart from providing interesting information about dive tourism itself, they adopt an ecosystem approach to conservation, and outline various strategies for improving the management of dive tourism in the Ras Mohammed National Park. Their contribution includes economic assessments of the net economic benefit of alternative policies that may be adopted to achieve different degrees of sustainability of dive tourism in this park. They find that the current policy of not managing visitor numbers and their distribution between dive sites is resulting in the rapid loss of coral cover and reef biodiversity in the most frequented sites. The expected consequence in the long-term is to make diving in this national park less popular and to reduce visitor numbers. If the current policies continue, the long-term economic benefits will be lower than if the number of divers is reduced and if the reduced numbers of divers are distributed more appropriately between more dive sites. They state: 'the difference in [economic] value between 'towards sustainability' scenarios and 'business-as-usual' scenarios seems to be sufficient to justify the commitment to conserve and manage the reef ecosystems'.

1.10. Concluding Comments

Thus, it can be seen that a wide range of topics relevant to contemporary tourism policy are covered in this book and that it highlights recent advances

in this subject.[1] This handbook provides a comprehensive coverage of the current state of tourism economics. It does this by outlining and reviewing relevant theories, demonstrating their applications, and by providing illustrative case studies. In addition, innovative ideas are to be found in the individual contributions in this handbook as well as constructively critical assessments of topics in tourism economics.

To some extent, developments in tourism economics reflect changes in economics generally. However, the relationship between tourism economics and economics generally is not a one-way process. Developments in tourism economics have sometimes alerted economists to the need to modify their general economic hypotheses. For instance, it became evident from the research of Gray (1970) on international tourism, that nations frequently trade in like commodities rather than specialising in the production of different commodities to the extent predicted by the theory of comparative international advantage. Furthermore, tourism economics has developed methods and procedures which are uniquely tailored to its own requirements, such as tourism satellite accounting.

However, general economic theories and methods as well as tourism economics are not static. Developments have been occurring in economics (such as research findings from behavioural economics, experimental economics and psychological economics) which result in economic theory being less dependent on deductive methods. These developments can be expected to influence the future development of tourism economics. For example, Tisdell and Wilson (2012) adopt a non-deductive behavioural approach in studying how tourists make decisions to holiday in a particular area and visit its attractions.

As argued by Steve Pratt in Chapter 21, future innovative advances are possible in the applications of computable general equilibrium analysis. Furthermore, major issues still remain to be resolved about how tourism developments should be evaluated so as to take account of economic considerations. For example, to what extent is the use of social cost-benefit analysis appropriate? What are the advantages and pitfalls of using economic impact analysis for the assessment of tourist developments? Is it desirable to use multi-criteria analysis? What role, if any should political feasibility play in

[1] Collections of past writings on tourism economics and leisure tourism provide some guidance to the development of contemporary thought about tourism economics (see, for instance, Tisdell, 2006, 2000).

economic assessment?[2] These are all issues that will continue to be debated, and much further development of tourism economic can be expected in the future. For now, however, this handbook provides a valuable overview of the subject.

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About the Author

Refer to *About the Editor.*

PART II

THE DEMAND FOR TOURING

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Chapter 2

TOURISM DEMAND MODELS: CONCEPTS AND THEORIES

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Abstract: This chapter reviews the conceptual and theoretical foundations underlying the specification of empirical tourism demand models. It begins with a review of basic concepts, theories, and the literature on the determinants of tourist flows. Its goal is to synthesise a conceptual framework within which issues in relation to tourism demand can be analysed systematically. The process of modelling and the specification of empirical demand models are discussed. This discussion includes a critical and up-to-date survey of the state of the art in consumer demand analysis, theoretical background, modelling procedures, and specification of theoretically consistent empirical demand models. The relative merits of the established demand systems and approaches are reviewed; the concluding remarks in this chapter are on the relative merits of each approach. Criteria are proposed for choosing between different available empirical demand models.

Keywords: Specification of empirical demand models; almost ideal demand system; linear expenditure system; tourism demand; translog demand model; consumer theory of demand.

2.1. Background and Introduction

Tourism is a fast-growing economic activity in many countries around the globe, and it plays an important role in the economic and technological development of nations. Its contribution to employment generation, stimulation of investment, infrastructure development, and foreign exchange earnings is well-recognised. With growing economic affluence globally, the last three decades evidenced an impressive growth of tourism; global tourist arrivals increased three fold from 285 million in 1980 to 935 million in 2010 and receipts by nine fold from US$102 billion to US$919. The rapid and sustained growth of global tourism — against the backdrop of a volatile global economic environment — created a new hope for those nations struggling

to revive their economies. With the realisation that tourism is an activity with appreciable economic benefits and a potential to stimulate the economy and future growth, many nations have embraced tourism promotion as an alternative growth strategy. Often, tourism is seen as a 'passport' to growth.

Tourism as a traded service has unique characteristics; unlike the most traded commodities, consumption takes place at the point of supply and thus the consumers (tourists) must travel to the destination to consume tourism services. Moreover, consumers are forced to consume available goods and services at the destinations they visit. Many destinations provide different types of tourism services, and the economic benefits that can be realised from them depend mainly on the level of demand. Thus, what factors determine the demand for tourism at a given destination and their impact on the level of demand have been key areas of research and interest among academics, industry practitioners, and in policy circles.

There is a sizeable literature on empirical tourism demand analysis that sheds light on the determinants of tourism demand (for a review of existing studies, see Lim (2006), Morley (2009) and on the related issue of forecasting future tourist flows (Sheldon and Var, 1985; Carey and Law, 2011). Often, the two types of studies are identified in the same vein but they need to be distinguished from each other, as the focus of each is different. For example, demand studies attempt to explain and predict the *nature* and *determinants* of tourist flows, while forecasting studies focus on predicting the *rates* of future tourist flows (Song *et al.*, 2010). An overwhelming majority of these studies are based on the classical time series method, its variants, and other related statistical models. The standard practice is to generate forecasts of tourist arrivals (one or two periods ahead) using several statistical models, and then comparisons are made using summary measures to identify the best forecasting method. In contrast, tourism demand analysis has a rich theoretical foundation drawn from the economic theory of consumer behaviour, a variety of approaches to model the demand, and well-developed econometric techniques with which to test and predict the determinants of demand. Despite the existence of well-established theoretical foundations and a wide variety of models with which to analyse consumer demand, except for a few studies, most empirical tourism demand studies are based on *ad hoc* formulations with little or no relationship to underlying theory. This is an appreciable issue, given that tourism is a multi-disciplinary field of research dominated by researchers from a wide variety of spectrums with little or no training in economics.

The objective here is to synthesise a framework that can be used as a guide for the modellers of tourism demand. More specifically, this is an

attempt to explain the process of analysis of demand for tourism systematically, which includes a critical and up-to-date survey of the state of the art in consumer demand analysis, theoretical background, modelling procedures, and model choice and specification. The chapter is organised as follows. In the introductory section, basic concepts, definitions, and the general literature on the determinants of tourist flows are presented and discussed. Determinants of international travel flows are discussed in the context of international trade theory. The second section of this chapter exploits theoretical aspects that underlie the demand analysis. It begins with a brief review of the two existing approaches to demand modelling and their relative merits in the context of modelling tourism demand. Then the economic theory of consumer behaviour — the foundation of empirical demand analysis — is presented as a guide to the derivation of demand functions consistent with the theory. This is followed by a discussion of the theoretical properties of demand functions. In Sec. 2.3, different approaches to the specification of complete demand systems consistent with the theory of consumer demand are discussed and analysed. The section concludes with a discussion on the relative merits of each approach and proposes criteria on how to choose between different available empirical demand models.

2.2. The Nature and Characteristics of Tourism

Tourism, which comprises the activities of persons travelling to and staying in places outside their usual environments, takes place both within and between nations. Much of the attention in the literature has focussed on the latter, which enters the arena of international exchange.[1] Individuals travel for different purposes and the World Tourism Organisation (WTO) and the Organisation for Economic Co-operation and Development (OECD) Tourism Committee established that international tourists should be classified by the purpose of their visit under one of the following groups:

a. Pleasure, recreation, or holiday;
b. Business, visiting friends and relatives, health, or religion.

[1]An international tourist is someone visiting a country other than that in which they usually reside for a period of at least 24 hours (United Nations, 1963). Gray (1970, p. 7), emphasising the need for distinguishing international travel from similar activities like migration, colonisation, and invasion, defined this activity as 'leaving a base or domestic nation with the intent of travelling peacefully to or through another nation or nations with the intent of returning within a foreseeable time period'. Thus, in defining international travellers, those who travel to establish residence or to seek employment are excluded.

The motivation for international travel (in particular, travel for pleasure) stems from the human desire for fun, recreation, and the undefined motive to seek and explore the unknown and unseen (Gray, 1970). The latter includes different social, cultural, and physical attributes, including natural and (or) man-made attractions. Gray (1970) identified two variants in pleasure travel: *wanderlust* and *sunlust*. The wanderlust travellers are those travelling to seek and explore other cultures and places, motivated by a basic human characteristic of curiosity. Sunlust travel, on the other hand, is determined by the existence (or lack) of better or different amenities for a specific purpose than those that are available locally.

In addition to the basic pleasure motive, there are other factors that influence international travel. First, migration between nations has a significant effect on the numbers travelling internationally — those visiting friends and relatives are in this category. Second, the growth of international capital movements, both human and physical, gives rise to international travel. Those travelling for business and educational purposes account for this category. Third is the growing international co-operation among nations — those travelling to international sporting meetings and conferences are examples of this category.

While one can conveniently classify travellers (tourists and (or) visitors)[2] by the motive or the purpose of their visit, the common characteristic of all types of travellers (domestic, regional, and international) is that they consume destination attributes jointly with a bundle of available goods and services at the destination visited. These include food, accommodation, local transportation, and various recreational and related services — henceforth *tourism goods and services*. This, along with the fact that tourists must visit the place of supply to consume destination attributes, means that international and (or) domestic travel give rise to two types of demand: demand for international and (or) domestic transportation (henceforth *travel*), and the demand for tourism.

Tourism is an integral part of international trade in services. Like most services traded internationally, tourism has received little attention in the literature.[3] For example, compared with the vast literature addressing

[2]The terms 'traveller', 'tourist', and 'visitor' are used interchangeably throughout.
[3]The service sector, in general, has had less scrutiny among trade theorists, which may be due to the widely held view that the major concern of economics is to create and distribute wealth, and that the service economy is essentially concerned with developing strategies for creating wealth. According to John Stuart Mill (1848), the economic process was aimed exclusively at producing utilities fixed and embodied in

various aspects of commodity trade, literature incorporating tourism within a coherent theoretical framework is relatively lacking (Tisdell *et al.*, 1988). In this context, the work of Gray (1970) is an important contribution. It is a departure from the conventional treatment of travel as an interchange of individuals among the links of a travel network and workplace, where the concern was discrete trip making, Gray attempted to analyse tourism within a trade-theoretic perspective. He treated international travel as a traded service — the tourist trade, with receipts and payments being the central issue. Payments are made by tourism-importing countries (visitor-origin countries) and receipts are drawn by tourism-exporting countries (host nations and (or) destination countries).

2.2.1. *Determinants of travel flows: A trade-theoretic perspective*

The traditional theory of international trade — Heckscher–Ohlin (HO) or factor endowment — asserts that trade takes place between nations as a result of the differences in factor endowments and relative costs. In the tourism context, one can conceptualise that a nation endowed with attributes such as a warm climate, sunny beaches (in the case of sunlust travel), and heritage, unique natural or man-made wonders (in the case of wanderlust travel) will export tourism services, and those nations lacking such resource endowments will import tourism services. Thus, trade in tourism obeys the general properties of the orthodox trade theory and demand-adjusted factor supply differences are the basic determinants of trade/tourist flows. However, the implied supply-side reasoning poses some difficulties in understanding the nature of tourist trade, as two-way trade is common.

The existence of two-way (intra-industry) trade indicates that variations in factor supply are not the sole cause of trade. Recent literature offers many explanations, such as product differentiation, transport costs, and imperfect substitutability as to the existence of two-way trade patterns (see, for example, Bhagwati *et al.*, 1971; Dixit and Norman, 1980; Helpman and Krugman, 1985; Krugman and Obstfeld, 1991). Among the different explanations, it appears that the relative significance of specific factors required to provide tourist services — which are one of either an inadequate supply or a complete

outward objects. 'Services *per se* are of little economic significance' (Adam Smith, 1776). Consequently, a service (or function) rendered by a tool does not need to be considered separately (Giarini, 1987).

lack in the importing country — is the most revealing explanation of two-way trade in tourism.

In the above context, assuming a sunlust traveller's basic motivation is to enjoy sunny beaches or places where sun is in ample and regular supply, all countries endowed with abundant sunlight will produce (and export) sunlust travel services. Wanderlust travel is motivated by particular attributes attached to each destination. Thus, wanderlust travel may be seen as a highly differentiated product and, depending on the taste of individuals who export or import such services, it will be determined by the particular attributes possessed by a nation or nations and (or) destinations. Therefore, a broad distinction between sunlust and wanderlust travel can be made — the former is expected to be highly competitive and the latter is highly differentiated and imperfectly competitive.

Given the existence of many destinations competing with each other, and the fact that each one supplies differentiated tourism products, it follows that trade in such services is largely influenced by demand conditions. More specifically, each supplying nation has its own negatively sloped demand schedule (Gray, 1970). This implies that, given the taste patterns of consumers, each country with specific factors or attributes will enjoy some degree of market power. Thus, regardless of a country's relative physical size or resource endowments, a country catering for specific demands possesses some market power in tourist trade. This power can be exploited to increase the gains from tourist trade and hence the economic welfare of the nation.

The market power enjoyed by a nation derives from the specific tourist attributes and resources possessed by that nation. Rents associated with such scarce resources can either be extracted by the national government or by the owners of these resources. The level and magnitude of the potential rents and their extractability depends on the elasticity of the demand for tourism facing the nation. The lower is the elasticity of demand, the higher is a nation's ability to extract potential rents (provided that they are not extracted by suppliers) and vice versa. Thus, sound knowledge about the nature and magnitude of the determinants of tourism demand and their sensitivities is a prelude to the evaluation and identification of potential benefits from tourism and, subsequently, to the development of appropriate policy measures.

2.2.2. *Determinants of demand for travel and tourism: A conceptual framework*

The factors affecting travel for leisure can be viewed under two broad categories: those general factors influencing travel — *ex ante* — and those factors

influencing the choice of destinations — *ex post*. Among *ex ante* factors, the level and magnitude of discretionary incomes available to consumers is a key factor. This is influenced by the general growth pattern of incomes of a society and the distribution of consequent increased incomes among individuals. As the levels of income of individuals grow, the amount required for meeting basic needs becomes a smaller proportion of their income. Increases in discretionary incomes enable the individuals to realise consumption of luxury goods and services such as foreign travel, yielding higher utility. Therefore, levels and magnitudes of discretionary incomes, a result of increasing affluence, are a major determinant of demand for travel and tourism. This, together with non-economic factors such as the rising popularity of foreign travel (*bandwagon effect*), availability of leisure time, and institutional factors such as government policies that promote or discourage foreign travel, influence travel decisions.

Once sufficient income is available, and the decision to travel has been made, the next stage involves the choice of *which* tourism products. Depending on taste, one may choose to consume tourism services available locally or in distant offshore destinations. If foreign travel is preferred, then the question of which country or destination to visit arises. In this *ex post* decision process, a key influencing factor is associated costs. The costs are two-fold: First, a traveller must visit the place of supply of tourism services thus involving costs of transportation. Second, a traveller must purchase tourism goods and services while visiting the destination. Not only may these costs constitute a large proportion of one's limited income, they could also vary significantly from destination to destination. The cost of transportation could vary substantially with the distance and the available modes of travel from an origin country to different destinations. The cost of tourism goods and services among destinations can vary — even if they share similar cost structures — because of differences in price levels and exchange rates. These, together with special factors of a non-economic nature, influence the destination choice.

Among non-economic factors, the uniqueness of tourism attributes possessed by a given country or destination is the most influential factor. Such attributes could include natural wonders, man-made monuments, climate, cultural heritage, historical and archaeological artefacts, and (or) they may arise from socio-political factors such as historical relationships between countries and migration. However, there remains a trade-off between destination attributes and destination choice. For example, no matter how strong is the desire to visit a place with distinct attributes, if the associated cost is prohibitive, an individual may tend to substitute a low-cost destination

(or consume less tourism products at the chosen destination). Substitution in leisure travel depends, among other things, on similarities of destination attributes and location factors. In addition, there are apparent complementarities — travellers often include more than one destination in their itinerary. Given the highly competitive nature of the world tourism market that provides services with varying degrees of substitutability and complementarities, in evaluating the impact of *ex post* choice factors not only must one consider the travel and country costs between a pair of origin-destination countries, but also those of competing or complementary destinations. These characteristics have important implications for modelling tourism demand: The demand for a given destination should be derived considering the associated costs of all potentially substitutable and complementary destinations.

2.2.3. *Measures of tourism demand*

One of the distinct characteristics of tourism compared with most other goods and services consumed by an individual is that their consumption involves a bundle of goods and services (Copeland, 1991). Thus, for analytical purposes, tourism may be defined as a composite of commodities consisting of all goods and services that a tourist or visitor consumes while visiting a destination (Divisekera, 1995, 2003). Accordingly, demand for tourism for a given destination may be measured using a volume (that is, aggregate quantities of all commodities consumed by tourists) or a value measure (that is, aggregate value of consumption).

Data on aggregate quantities of tourism services consumed by foreign tourists at a given destination are, however, virtually non-existent and researchers often use two alternative proxy measures — visitor numbers or visitor nights or days. Each of these measures has different policy relevance and is useful for examining different aspects of tourism demands. For example, visitor numbers are useful for forecasting future visitor flows and for formulating policies in relation to the provision of transport infrastructure facilities such as airports and for determining airline capacities. However, its relevance as a measure of tourism demands is limited. This is because visitor numbers may not necessarily reflect the levels of demand for tourism. For example, a rise in visitor numbers for a given destination can be accompanied by a fall in demand for tourism goods and services due to reduced consumption (for example, shorter lengths of stay) or arrivals of visitors with low spending capacity.

In the above context, the second volume measure — visitor nights or days — may be considered as a better indicator of tourism demands, as the amount of tourism services consumed at a given destination depends, among other things, on the number of nights a visitor stays (length of stay). From a policy point of view, this measure is useful for discussing investment and planning issues in relation to one major element of tourism demands: Accommodation. However, this measure is not without limitations. For example, some visitors may choose to stay with their friends and relatives. Thus, visitor nights alone may not accurately reflect the amount of tourism services demanded by tourists.

Given the limitations of available volume measures and the lack of detailed quantity data, visitor expenditures (or receipts) may be considered as the appropriate indicator of levels of tourism demand. Most importantly, expenditure on tourism goods and services at any destination can be expressed as the product of three factors: visitor numbers, visitor nights, and *per diem* expenditure, which encompasses all relevant indicators. Thus, as O'Hagan and Harrison (1984, p. 921) noted, 'total expenditure, and not numbers, is in principle the most appropriate indicator of tourism services consumed in a country'. This leads to another important issue associated with tourism demand, namely the measurement of tourism prices.

2.2.4. *Measures of tourism prices*

The costs or prices affecting demand for tourism are two-fold: The cost associated with the consumption of tourism goods and services at a given destination (tourism prices) and the cost of transport (travel prices). Cost of tourism includes accommodation, food and drinks, local transportation, costs associated with consumption of tourism services such as access to tourist attractions, tourist guide services, entertainment, shopping, and other related personal services. Cost of travel between the place of origin and the destination depends on the distance and the availability of different modes of transportation. They could include international, inter-continental, and domestic airfares and the cost of other available long-distance travel modes such as trains, coaches, and private motoring. In addition to these two key components, in the case of international travel a third element that constitutes the cost of tourism is the rate of exchange of the currency of the country in which the tourist resides and that of the country being visited. Thus for empirical purposes, in the case of international tourism, an ideal measure of tourism prices should include the cost of a basket of goods and

services usually consumed by the tourists, adjusted for exchange rate variations (O'Hagan and Harrison, 1984; Divisekera, 1995).

2.3. Approaches to Modelling Tourism Demand

Two distinct approaches to modelling consumer demands may be identified: Partial and General equilibrium. The former concerns the demand for a particular commodity, involving single markets. The methodology involves the estimation of a single equation. The latter concerns the demand for a group of commodities — the system approach. According to the latter approach, the demand for a given commodity is derived considering the demand for all other goods and services simultaneously. The methodology involves the estimation of a complete system of demand equations involving multiple markets and (or) a group of commodities.

The system approach to demand modelling has stronger theoretical foundations. As consumer theory predicts, the demand for a given commodity is derived as part of a global system. Thus, one can derive consistent parameter estimates and both 'own' and 'cross-price' effects which are essential for policy discussion. However, neither the specification of a complete demand system nor the empirical estimation is easy. The single-equation approach has the advantage of simplicity in terms of both specification and estimation. However, it lacks sound theoretical underpinning. The method often adopted has been *ad hoc* with little reference to the underlying theory of consumer behaviour (Thomas, 1987). Further, as the demand for each good is considered individually, resulting parameter estimates are biased and may not be meaningfully interpreted. Further, the policy relevance of demand parameters derived from single-equation models is limited, as they fail to yield the cross-price relationships that are essential for policy discussions.

Most studies of the demand for international tourism have relied mainly on single-equation estimation for individual countries based on a functional form (double-log) employed in traditional import demand (trade) models (for example, see Artus, 1972; Gray, 1966, 1970 and many others).[4] Despite its inherent limitations, the single-equation approach to modelling trade flows may be justifiable, as the principal concern of most studies has been to examine the substitutability of imports and exports and domestic

[4]The traditional import demand function specifies the volume of imports to be a function of real domestic disposable income and the relative prices of foreign and domestic goods. For a detailed discussion on the conventional import demand equation specification and limitations, see Murray and Ginman (1976).

and foreign competing goods which are assumed to be homogeneous products (for example, see Goldstein and Khan, 1985; Houthakker and Magee, 1969; Leamer and Stern, 1970). However, the nature, the end use, and the geographical orientation of international tourism limit the merits of the single-equation approach as a modelling technique.

First, unlike the imports of many goods and services brought into a country, tourism imports are bought at the point of supply. To consume tourism services, the consumer must visit the place of supply (destination). The cost of travel from a given origin to different destinations varies with the distance and the mode of transport and constitutes a large proportion of the consumer's overall travel budget. The cost of transport (often ignored due to its negligible influence in traditional import demand studies), therefore, has a decisive effect on both the choice of destinations and the level of consumption of tourism services.

Second, the pricing structure of the major mode of transportation used by tourists, international airlines, is such that it gives an incentive for travellers to visit several destinations in a specified geographic region. For example, a US resident travelling to Australia can visit New Zealand on the return trip without incurring substantial additional travel costs. Further, for many consumers with limited income, a trip abroad is made occasionally and many tend to include more than one destination in an itinerary. This is particularly so in the case of visits made to a given region (see, for example, Bakkal and Scaperlanda, 1991; Gray, 1970; O'Hagan and Harrison, 1984; White, 1982, 1985; Divisekera, 2003; Cortés-Jiménez *et al.*, 2009). This multiple nature of tourism consumption has important implications for the demand for tourism to a given destination. Higher than expected prices in one destination, for example, may result in fewer tourism services being consumed in that destination, with a compensating amount of tourism services being consumed in another destination. Alternatively, travellers may avoid visiting a high-cost destination altogether. Therefore, demands for tourism services of a given destination must be derived simultaneously with demands for alternative destinations which are substitutes or are complementary.

Before a demand system is estimated, some consideration needs to be given to its specification. For example, what type of explanatory variables, functional form, and statistical methods are to be used? The specification of demand systems explicitly or implicitly employs the consumer theory of demand as the basis, with additional assumptions that relate to the problem in hand. The assumptions are usually motivated by empirical considerations, and the demand for tourism is no exception.

2.3.1. *Demand model specification: theoretical issues*

The neoclassical theory of consumer behaviour, a cornerstone of modern microeconomics, provides insight to an understanding of market demand and its determinants. The neoclassical perspective on consumer demand is rooted in the notion of a rational individual who strives to maximise their personal satisfaction. As a rational economic agent, the consumer is motivated to seek the highest level of satisfaction (utility). Neoclassical theory holds that consumers rank their preferences from a set of options for what to purchase, and they select the combination of goods and services that will bring them the greatest utility. Consumer demand, then, is driven in part by how individual consumers seek to maximise their utility. Further, the theory stipulates that the utility-maximising consumer's demand for any commodity depends on the prices of all commodities available to them and on their total expenditure on these commodities.[5] This formulation presumes the existence of a utility function that measures the level of satisfaction an individual achieves by consuming goods and services. The utility function (u), representing consumer preferences, is defined by,

$$u = u(q), \tag{2.1}$$

where $q = (q_i)$ is an n-element vector whose elements are levels of commodities consumed at a point in time.

The utility function (2.1) is assumed to be strictly increasing, strictly quasi-concave, and twice continuously differentiable. The rational consumer maximises utility subject to a budget constraint:

$$pq = m, \tag{2.2}$$

where $p = (p_i)$ is the n-element column vector of prices and m is the consumer's total expenditure (income). Both prices and incomes are assumed

[5]The neoclassical view of consumer demand has several important underpinnings. A central concept is the neoclassical view of the consumer as a rational choosing agent who is motivated to seek the highest level of satisfaction or utility. A consumer's requirements depend on the level of utility that a particular purchase will generate. This implies that the value of a particular good is dictated not solely by its price, but by a consumer's subjective feelings toward it. The neoclassical theory of consumer behaviour is well documented in the work of Hicks (1956) and Samuelson (1947). An extensive treatment of consumer theory leading to systems of demand functions can be found in Barten (1977), Deaton and Muellbauer (1980a), Deaton (1986), Goldberger (1967), Phlips (1974), Powell (1974), and Theil (1975, 1976).

to be given. Maximisation of (2.1) subject to (2.2), involves the use of the Lagrangian multiplier technique and forms the expression,

$$L(q, \lambda) = u(q) - \lambda(p'q - m), \tag{2.3}$$

where λ is the Lagrangian multiplier. Differentiating (2.3) with respect to arguments q_i and λ yields the first order conditions:

$$u_q - \lambda p = 0, \quad pq - m = 0, \tag{2.4}$$

where u_q is the vector of derivatives of the utility function with respect to the quantities, $q_i (i = 1, 2, \ldots, n)$. The system of equations obtained from the first order conditions yields $(n + 1)$ equations in $(2n + 2)$ variables: The n prices, the n quantities, λ, and income. Applying the implicit function theorem, (2.4) can be solved uniquely for q and λ as functions of m and p,

$$q = q(p, m), \quad \lambda = \lambda(p, m). \tag{2.5}$$

The n equations of $q = q(p, m)$ constitute the complete set of demand equations which express the quantity demanded of one good as a function of income and all prices,

$$q_i = q_i(p_1, \ldots .p_n, m). \tag{2.6}$$

The validity of the above procedure depends on one important assumption underlying the utility function noted earlier; the utility function must be strictly quasi-concave. This in turn implies that the consumer's preference ordering is strictly convex (or the indifference curves representing consumer preferences are convex to the origin). Thus, to obtain a specific functional form for demand equations (2.6), one has to specify a utility function (2.1) which is strictly quasi-concave. This poses limits on the types of preferences that can be allowed in empirical demand analysis (Deaton and Muellbauer, 1980a). However, an alternative approach not requiring strict concavity properties of consumer preferences follows directly from the *duality* theory (Diewert, 1971, 1974; Shephard, 1953).

Recall that the maintained hypothesis of consumer theory is that a consumer chooses a set of goods and services that maximises utility. The solution to the maximisation problem (the primal problem) yields a set of quantities demanded and a maximum utility level of u^*. This problem can be formulated equivalently so as to minimise the expenditure necessary to achieve a given level of utility u^*.

$$\text{Minimise } m = p'q \quad \text{subject to } u(q) = u^*. \tag{2.7}$$

The solution to this problem (the dual) yields the same set of quantities demanded, and the minimum expenditure m^* equal to the given m in the primal problem. In both cases — primary and dual — the optimal value of q is being sought. However, note that the resulting demand functions are different. In the primal case, the solution is a set of *Marshallian* or *uncompensated* demand functions, and in the dual case, they are *Hicksian* or *compensated* demand functions. Since the two solutions coincide, we have:

$$q_i = q_i(p, m) = h_i(p, u^*). \tag{2.8}$$

Each of these solutions can be substituted back into their respective problems to yield first, the maximum attainable utility given prices p and expenditure m — the *indirect utility function*:

$$u = u[q(p, m)] = v(p, m), \tag{2.9}$$

and, second, the minimum cost of attaining u at prices p — *the expenditure or cost function*:

$$m = (u, p) = c(u, p). \tag{2.10}$$

The advantage of considering the consumer choice problem in the above context is the ease of deriving demand functions. For example, uncompensated or Marshallian demand functions can be derived simply by differentiating the *indirect utility function* defined in (2.9) and applying Roy's identity. The compensated or Hicksian demand functions can be derived differentiating *cost functions* defined in (2.10) using Shephard's lemma. The cost function plays a major role in recent work on consumer demand theory due to its attractive properties. First, the cost function is homogeneous of degree unity in prices. Second, the cost function is increasing in u, non-decreasing in p, and increasing in at least one price. Third, the cost function is concave in prices. Fourth, the cost function is continuous in p, and first and second order derivatives exist everywhere except possibly at specific price vectors. Note that the concavity of the cost function is independent of whether consumer preferences are assumed to be strictly convex or not (Deaton and Muellbauer, 1980a; Thomas, 1987). Thus, any cost function that possesses the above properties can be regarded as representative of some underlying consumer preference ordering. Consequently, unlike the traditional approach which imposes limits on consumer preferences, the cost (expenditure) function approach provides a flexible alternative in deriving demand functions.

2.3.2. *Properties of demand functions*

The properties of demand functions (or alternatively, restrictions on consumer demand functions) — a consequence of utility maximisation (and equivalently cost minimisation) — are derived from the consequences of parameter shifts associated with the demand system given by (2.6). They are, respectively: *Adding Up, Homogeneity, Symmetry*, and *Negativity*. These are described by partial derivatives of the first order conditions for prices and income. On empirical grounds, it is convenient to express these restrictions in elasticity form, which are the derivatives of the logarithmic version of (2.6).

$$d \ln q_i = \eta_i \, d \ln m + \sum_j \varepsilon_{ij} \, d \ln p_j, \tag{2.11}$$

where the η_i is the income elasticity of the demand for commodity i and ε_{ij} is the price elasticity. The adding up or *aggregation* condition implies that expenditures on individual goods must 'add up' to total expenditure ($\sum p_i q_i = m$); there are two variants: the *Engel* aggregation and the *Cournot* aggregation. These two expressed in elasticity form are:

$$\sum_i w_i \eta_i = 1, \tag{2.12}$$

$$\sum_I w_i \varepsilon_{ij} = -w_j, \tag{2.13}$$

where w_i is the ith budget share ($w_i = p_i q_i / m$), η_i is the income elasticity and ε_{ij}, is the price elasticity of demand. The symmetry, homogeneity, and negativity conditions are respectively:

$$\mathrm{w_i}(\varepsilon_{\mathrm{ij}} + \eta_{\mathrm{i}} \mathrm{w_j}) = \mathrm{w_j}(\varepsilon_{\mathrm{ji}} + \eta_{\mathrm{j}} \mathrm{w_i}) \ \mathrm{i} \neq \mathrm{j}, \tag{2.14}$$

$$\sum_{\mathrm{i}} \varepsilon_{\mathrm{ii}} + \eta_{\mathrm{i}} \mathrm{w_i} = 0, \tag{2.15}$$

$$\mathrm{w_i}(\varepsilon_{\mathrm{ii}} + \eta_{\mathrm{i}} \mathrm{w_i}) < 0 \tag{2.16}$$

The homogeneity condition (2.15) implies that the consumer does not exhibit money illusion; that is, decisions on purchases of goods and services are made on the basis of relative prices and income alone. The Marshallian demand functions are homogeneous of degree zero in prices and total expenditure, and Hicksian demand functions are homogeneous of degree zero in prices. The Cournot aggregation (2.13) ensures that changes in quantities and prices which cause a rearrangement in purchases do not violate the budget constraint. The homogeneity and aggregation conditions are

attributes of the budget constraint and are independent of whether the consumer is a utility maximiser or not. The *negativity* condition (2.16) refers to the consistency of consumer choices (the Hicksian demand curves slope downward). The remaining restriction, symmetry, refers to cross-substitution effects.

The symmetry condition (2.14) implies that the total effect of a unit change in p_j on q_i is identical to the total substitution effect of a unit change in p_i on q_i. This total substitution effect can be partitioned to obtain:

$$\partial q_i/\partial p_j = k_{ij} - q_j(\partial q_i/\partial m), \tag{2.17}$$

which is the well-known Slutsky equation or the *fundamental equation of value*. According to this result, the effect of a price change (uncompensated) $\partial \mathrm{q_i}/\partial \mathrm{p_j}$ is expressed as the sum of two components, the substitution effect k_{ij} (the first term on the right in (2.17)) and income effect $q_j(\partial q_i/\partial m)$ (the second term on the right). The substitution term k_{ij} satisfies the symmetry, homogeneity ($\sum_j k_{ij} = 0$), and the negativity condition $k_{ii} < 0$ (Phlips, 1974).[6] In terms of elasticities, decomposition of the total effect can be expressed as:

$$\varepsilon_{ij} = (\varepsilon^*_{ij} - \eta_i w_j), \tag{2.18}$$

where ε^*_{ij} is the compensated effect.

The restrictions implied in the neoclassical theory of consumer demand impose substantial economies in parameterising a complete set of demand functions. Among general restrictions, aggregation and symmetry are cross-equation restrictions requiring the estimation of a complete system of demand ((2.5) or (2.6)). For example, in an n-equation system without restrictions, there will be $(n^2 + n)$ parameters reflecting n^2 responses to price changes and n responses to income changes. The aggregation restriction reduces the number of independent responses by $(n + 1)$. The symmetry restriction reduces the number by a further $1/2n(n - 1)$. Thus, in a

[6]The negativity condition refers to the 'own substitution' effect on the demand for a good following a change in its (own) price. This condition has important implications for identifying the nature of goods. For example, the total effect of a price change. $\partial q_i/\partial p_i$ is negative if $\partial q_i/\partial m \geq 0$ or if $\partial q_i/\partial m < 0$ and $|q_I(\partial q_i/\partial m)| < |k_{ii}|$. It is positive if $\partial q_i/\partial m \geq 0$ and $|q_I(\partial q_i/\partial m)| > |k_{ii}|$. Accordingly, a good is defined as normal if $\partial \mathrm{q_i}/\partial \mathrm{p_i} < 0$; Giffen if $\partial q_i/\partial p_i > 0$; superior *if* $\partial q_i/\partial m > 0$; and inferior if $\partial q_i/\partial m < 0$. Further, the commodities $(i \neq j)$ can be classified as substitutes, independents, and complements as the terms $k_{ij} = k_{ji}$ are positive, zero, or negative respectively.

10-equation system, for example, the number of independent responses is reduced from 110 to 54.

Empirically, given the limited span of data, it is frequently necessary to impose further restrictions on price and income responses. One method to eliminate some specified price and income responses is to impose exclusion restrictions. A second method is to use commodity aggregates through redefining commodities. This pragmatic approach is more appealing than the simple exclusion principle is, but it is not without problems. For example, how do consumers perceive commodities as aggregates or groups, and how do they allocate expenditure within and between groups? These questions have paved the way for incorporation of the *separability* concept, which plays a major role in applied demand studies.

Separability refers to some partition of a complete set of k commodities into n exhaustive, mutually exclusive subsets with common characteristics (Goldman and Uzawa, 1964).[7] Justification for incorporating this concept in the consumer allocation problem follows from the view that consumption decisions occur in two stages. In the first stage, the consumer allocates income between commodity sub-groups. In the second stage, allocation takes place within commodity sub-groups. There are two variants of separability: *strong* and *weak*.

A utility function is said to be *strongly* separable (or block additive) with respect to the partition under consideration, if the marginal rate of substitution between any two commodities from different subsets is independent of the quantities consumed outside the two subsets from which the commodities are drawn (Powell, 1974). This implies that the utility function is of an *additive* form:

$$U = f(u_1(q_1) + u_2(q_2) + \cdots + u_n(q_n). \tag{2.19}$$

When the consumer's preference ordering is additive (Houthakker, 1960) or *want independent* (Frisch, 1959), this has several implications for consumer behaviour. First, the cross-price derivatives $dU_{ij}(i \neq j)$ are all zero, whenever i and j belong to different groups (though not necessarily zero for goods within the same group). Second, strong separability implies that if the price of a given commodity in any one group changes, the price

[7]For an excellent survey on the concept of separability, its variants, and its implications for the preference structure, see Blackorby *et al.* (1978).

responses of all commodities outside that group are proportional to their income responses.

A utility function is said to be *weakly* separable if the marginal rate of substitution between two commodities i and j from the same set is independent of the quantity of all other commodities outside the set:

$$U = f((u_1(q_1), \ldots, u_n(q_n)). \tag{2.20}$$

Among two variants, it is weak separability that is a necessary and sufficient condition for the second stage of the two-stage budgeting process. Most importantly, the quantities of purchased goods appearing in any one of the groups to which the sub-utility function belongs can always be expressed as functions of total group expenditure and within-group prices alone (Deaton and Muellbauer, 1980a). Thus, the acceptance of the separability assumption makes the estimation of demand functions more tractable, as the number of independent price and income responses is reduced. Further, one can concentrate on sub-problems within the consumer's overall allocation problem.

2.4. Approaches to Specification of Complete Demand Systems

There are three approaches to the specification of complete demand systems consistent with the theory. One is to derive demand functions on the basis of a particular form of a utility function, which satisfies the general restrictions implied by consumer theory. The well-known examples are the *Linear Expenditure System* (LES) and the *Indirect Addilog* (for details, see Berndt *et al.*, 1977; Houthakker, 1960; and Yoshihara, 1969). LES, the earliest and most extensively used in early empirical works, is derived from the utility function suggested by Klein and Rubin (1947) of the form:

$$U = \sum_i \beta_i \log(q_i - \gamma_i), \tag{2.21}$$

where the βs and γs are parameters with $(0 < \beta_i < 1)$, $(0 \leq \gamma_i)$ and $\sum_i \beta_i = 1$. The maximisation of the above subject to the budget constraint, $\sum p_i q_i = m$, leads to the expenditure (demand) equations of the form:

$$p_i q_i = p_i \gamma_i + \beta_i (m - \sum_i p_i \gamma_i). \tag{2.22}$$

The resulting (system of) demand equations are homogeneous of degree zero in prices and incomes, and satisfy the adding-up condition. The matrix of substitution terms is symmetric and negative semi-definite (Phlips, 1974).

All income elasticities are positive, implying that all goods are normal. Both own price and uncompensated cross-price elasticities are negative, implying that all goods are complements. However, the compensated cross-price elasticities are positive, suggesting that all goods are net substitutes. Further, inferior goods are excluded.[8]

The Indirect Addilog system of Houthakker (1960) may be derived using an indirect utility function of the form:

$$v(p, m) = \sum_i a_i (m/p_i)^{b_i}, \tag{2.23}$$

where a_i and b_i are parameters with $a_i b_i \geq 0$ and $b_i \geq -1$, the equality holding for, at most, one commodity. The corresponding demand functions are:

$$q_i = \frac{a_i b_i (m/p_i)^{1+b_i}}{\sum_i a_j b_j (m/p_j)^{b_j}}. \tag{2.24}$$

This system of equations satisfies all regularity conditions, homogeneity, Engel aggregation, and the Slutsky symmetry (Yoshihara, 1969). Unlike the case of LES, income elasticities do not need to take positive values for each good. They can either be positive ($n_i \geq 1$ when $b_i \geq \sum_j b_j w_j$) or negative ($n_i \leq 1$ when $b_i \leq \sum_j b_j w_j$). Thus, inferior goods are allowed. However, the determination of cross-price elasticities in this system depends on the good whose *price* is changing, and not on the good whose *quantity* is changing.[9]

The second approach is to specify demand systems directly. This approach ignores the underlying utility function and starts with a set of demand functions that do not necessarily satisfy theoretical restrictions. Then, they are interpreted and restricted in the light of consumer demand theory. Powell's *System of Additive Preferences* and the *Rotterdam Demand System* (RTDS) belong to this class (Powell, 1966; Theil, 1965, 1976). Powell's system of additive preferences, an ingenious variant of Stone's Linear Expenditure System (Goldberger, 1967, p. 86), takes the following form:

$$p_i q_i = p_i \overline{q}_i + \beta_i \left(m - \sum_j p_j \overline{q}_j \right) - \sigma \beta_i \left[(p_i/\overline{p}_i) - \sum_j \beta_j (p_j/\overline{p}_j) \right], \tag{2.25}$$

[8]Income (η_i), own-price (ε_{ij}), and cross-price (ε_{ji}) elasticities are respectively: $\eta_i = u_i/w_i$, $\varepsilon_{ii} = -1 + (1 - u_i)(\gamma_i/q_i)$, $\varepsilon_{ij} = -u_i(p_j\gamma_j/(p_i q_i))$, $(i \neq j)$, where $w_i = p_i q_i$.

[9]The income, own-price, and cross-price elasticities are respectively: $\eta_i = (1 + b_i) - \sum_j b_j w_j$, $\varepsilon_{ii} = -(1 + b_i) + b_i w_i$, $\varepsilon_{ij} = -b_j w_j, (i \neq j)$.

where $p_i q_i$ is per capita expenditure on the ith commodity, p_j is the price of the jth commodity ($\overline{p}$, mean prices) and m is the per capita total expenditure.

The interpretation of the system is as follows: Given income, m, and prices $p_1 \ldots p_n$, the consumer first purchases the minimum required quantities, $q_i (i = 1, 2, \ldots n)$, and then allocates the remaining (*supernumerary*) income $(m - \sum_j p_{jq_j})$ over all commodities in proportions $\beta_i (i = 1, 2, \ldots n)$. This interpretation is parallel with the LES. However, unlike the LES, the allocation of incomes is modified to reflect the substitution effects arising from price changes. The theoretical restrictions underlying the system, except for the Engel aggregation, are only approximately satisfied; the symmetry relation, for example, occurs only at points where the price ratio p_i/p_j happens to equal the ratio of mean prices, $\overline{p}_i/\overline{p}_j$ (Powell, 1966, p. 664).

The Rotterdam Demand System (RTDS) developed by Theil (1965) and Barten (1966) belongs to a class of *differential demand functions*, which deals with the changes in, rather than levels of, demand[10]:

$$w_i d \ln q_i = b_i (d \ln m - \sum_j w_j d \ln p_j) + \sum_j s^*_{ij} d \ln p_j. \qquad (2.26)$$

The implied restrictions of consumer demand theory can be shown to hold for the parameters in the above formulation and can either be tested or incorporated (Theil, 1976).[11] Empirical estimates are carried out by approximating differentials by first differences and treating b_i and s_{ij} as constants. All general theoretical restrictions remain unchanged for all values of total expenditure and prices.

A third approach to the specification of demand systems is to employ *flexible functional forms*. This method may be considered as an attempt to combine two early approaches by approximating utility functions (direct or indirect) and cost (expenditure) functions. According to Pollak and Wales (1992, p. 60), a demand system is said to be of flexible functional form if it is capable of providing a second order approximation to the behaviour of any theoretically plausible demand system at a point in the price-expenditure space. Flexible functional forms must contain sufficient parameters to be regarded as an adequate approximation to the true underlying utility or

[10]Other differential demand systems of recent origin (less known in the literature) include CBS (this is a hybrid of the Almost Ideal Demand System and the Rotterdam System; see for details, Keller and van Driel (1985), and NBR (another hybrid of AI and the Rotterdam System; for details, see Neves, 1987).

[11]Engel aggregation implies $\sum_i b_i = 1$, the homogeneity $\sum_j s_{ji} = 0$, and symmetry $s_{ij} = s_{ji}$.

cost function.[12] Similarly, they must generate demand equations which are capable of satisfying, but do not necessarily satisfy, the general restrictions of theory (Thomas, 1987).

Flexible functional forms belong to the translog family.[13] The Translog Demand System (TL) due to Christensen *et al.* (1975) is a well-known example of flexible functional forms.[14] They developed two variants of demand systems based on direct and indirect utility functions. The direct utility function is approximated by a function that is quadratic in the logarithms of the quantities consumed. In the indirect translog model, widely used in empirical demand analysis, the indirect utility function ($\mathrm{V}(p, m)$) is approximated by a function which is quadratic in the logarithms of the ratios of prices (p_i) to total expenditure, m:

$$\log V(p, m) = \alpha_0 + \sum_k \alpha_k \log\left(\frac{p_k}{m}\right) + \frac{1}{2}\sum_k \sum_j \gamma_{kj} \log\left(\frac{p_k}{m}\right) \log\left(\frac{p_j}{m}\right) \tag{2.27}$$

Using a logarithmic form of Roy's identity, translog demand functions in budget share equations are:

$$w_i = \frac{\alpha_i + \sum_k \gamma_{ik} \log(p_k/m)}{\alpha_M + \sum_k \gamma_{Mk} \log(p_k/m)}, \tag{2.28}$$

[12] At a point of approximation, any arbitrary theoretically plausible demand system has n shares, n income elasticities, n own-price elasticities, and $n(n-1)$ cross-price elasticities. However, not all $n^2 + 2n$ parameters are independent. Given the aggregation condition, the shares sum to unity and only $n-1$ of them are independent. Similarly, given the shares and the Engel aggregation, it follows that only $n-1$ income elasticities are independent. Given shares and income elasticities, only $n(n-1)/2$ cross-price elasticities are independent (that is, below the diagonal). Finally, given shares, income elasticities, and cross-price elasticities, all of the own-price elasticities are uniquely determined. Thus there are at most $n(n-1)/2+2n-2$ independent parameters in a theoretically plausible demand system.

[13] Pollak and Wales (1992) provide a detailed review of various specifications of functional forms belonging to the translog family. The simplest form is the *homothetic translog*, which corresponds to homothetic preferences. Another variant, the *linear translog*, corresponds to a demand system which is linear in expenditure. Another variant termed *log translog* is linear in the log of expenditure.

[14] Several other flexible functional forms have been suggested in the literature, although they have not been used widely. These include the Generalised Leontief (Diewert, 1971, 1974) and the Generalised Cobb-Douglas (Diewert, 1973; Gallant, 1984; Lewbel, 1987).

where $\alpha_M = \sum_{i=1}^{M} \alpha_i$ *and* $\gamma_{Mk} = \sum_{i=1}^{M} \alpha_{ik}$. Among the theoretical restrictions, homogeneity is necessarily guaranteed in the standard translog model with the use of expenditure-normalised prices (p/m). Symmetry requires $\gamma_{ij} = \gamma_{ji}$. Note that the parameters are given in ratio form and thus they are only identified to scale. A common normalisation to allow identification is $\sum_i \alpha_{i1} = -1, \sum_i \alpha_{ik} = 0 \ \forall \ k \geq 2$, which also guarantees the adding-up condition.

Elasticities of demand can be calculated based on estimated model parameters. Using the familiar result that uncompensated (Marshallian) price elasticities in any demand system can be given by:

$$\varepsilon_{ij} = \frac{\partial \ln Q_i}{\partial \ln p_j} = -\delta_{ij} + \frac{\partial \ln w_i}{\partial \ln p_j}, \tag{2.29}$$

and price elasticities in the TL model are given by:

$$\varepsilon_{ij}^{M} = -\delta_{ij} + \frac{\gamma_{ij}/w_i - \sum_j \gamma_{ij}}{-1 + \sum_k \gamma_{Mk} \log(p_k/m)}, \tag{2.30}$$

where δ_{ij} is the Kronecker delta; $\delta_{ij} = 1$ if $i = j$ and 0 otherwise ($\delta_{ij} \neq 1$). Marshallian elasticities can be transformed into Hicksian elasticities (compensated) through the Slutsky equation and are given by:

$$\varepsilon_{ij}^{H} = \varepsilon_{ij}^{M} + w_j \eta_i, \tag{2.31}$$

where η_i is the expenditure elasticity, which is defined as:

$$\eta_i = 1 + \frac{-\sum_j \gamma_{ij}/w_i - \sum_i \sum_j \gamma_{ij}}{-1 + \sum_k \gamma_{Mk} \log(p_k/m)}. \tag{2.32}$$

Instead of using a direct or indirect utility function, Deaton and Muellbauer (1980b) start with the cost (expenditure) function in the specification of their well-known demand model, the Almost Ideal Demand System (AIDS). This model has now become the industry standard for empirical demand specification and is the one most widely used in empirical analysis of tourism demand. The advantage of this approach is that one is not restricted to considering only convex consumer preference orderings. The particular functional form adopted by Deaton and Muellbauer to approximate the cost function $[c(u, P)]$ belongs to the *price-independent generalised log-linear* (PIGLOG) family:

$$\log c(u, P) = (1 - u) \log[a(P)] + u \log[b(P)], \tag{2.33}$$

where u denotes utility and P is a vector of prices. Note that the utility index can be scaled to correspond to cases of subsistence ($U=0$) and bliss ($U=1$), in which case $a(P)$ and $b(P)$ can be interpreted as representing the costs of subsistence and bliss. Deaton and Muellbauer use translog and Cobb-Douglas functions to approximate $a(P)$ and $b(P)$ respectively. The resulting cost (expenditure) function takes the following form:

$$\log c(u,p) = \alpha_0 + \sum_k \alpha \log p_k + \frac{1}{2}\sum_k \sum_j \gamma^*_{kj} \log p_k \log p_j + u\beta_0 \prod_k p_k^{\beta_k}. \tag{2.34}$$

The cost function is homogeneous of degree unity in prices, provided that $\sum_i \alpha_i = 1$ and $\sum_i \gamma^*_{ij} = 0$, $\sum_i \beta_j = 0$. Given the cost function, the compensated demand functions can be derived using Shepherd's *lemma*. Logarithmic differentiation of the cost function with respect to logarithmic price yields budget (expenditure) share equations for each good as a function of prices and utility.

$$w_i = \alpha_i + \sum_j \gamma^*_{kj} \log p_j + \beta_i u \beta_0 \prod p_k^{\beta_k}, \tag{2.35}$$

where $\gamma_{ij} = \frac{1}{2}(\gamma^*_{ij} + \gamma^*_{ji})$. The behavioural demand system given in (2.35), with the unobservable u, can be converted into an observable market demand system using the indirect utility function associated with (2.34). By substituting the indirect utility function for u in (2.35), corresponding AIDS market demand (Marshallian or uncompensated) equations are obtained:

$$w_i = \alpha_i + \sum_j \gamma_{ij} \log p_j + \beta_i \log(m/P), \tag{2.36}$$

where m is the total expenditure ($m = \sum p_i q_i$) and P is an aggregate price index defined as:

$$\log P = \alpha_0 + \sum_k \alpha_k \log p_k + \frac{1}{2}\sum_j \sum_k \gamma_{kj} \log p_k \log p_j. \tag{2.37}$$

The aggregation restriction requires that for all j: $\sum_i \alpha_i = 1; \sum_i \beta_i = 0$; $\sum_i \gamma_{ij} = 0$; and homogeneity requires that $\sum_i \gamma_{ij} = 0$. These restrictions follow from the requirement that the cost function be homogeneous of degree unity in prices. The symmetry restriction is satisfied if $\gamma_{ij} = \gamma_{ji}$. Note that there is no guarantee that any of the restrictions, except aggregation, will be satisfied if the system is estimated freely. Nonetheless, all the restrictions except for the negativity can be imposed through parameter restrictions.

While the negativity restriction cannot be imposed, it can be tested by evaluating the Slutsky matrix.[15]

Uncompensated (Marshallian) price elasticities are given by:

$$\varepsilon_{ij}^{M} = -\delta_{ij} + \frac{\gamma_{ij} - \beta_i(\alpha_j + \sum_k \gamma_{jk} \ln p_k)}{w_i}. \tag{2.38}$$

The expenditure elasticities associated with the AIDS demand system is given by:

$$\eta_i = \frac{\beta_i}{w_i} + 1. \tag{2.39}$$

The AIDS system given in (2.36) has several attractive properties. As Deaton and Muellbauer (1980a) show, budget-share equations contain sufficient parameters to be considered as a local first order approximation to any demand system. Thus if the αs are treated as constants (intercepts), then at any point the βs and γs can be chosen so as to make the first order derivatives of AIDS identical to those of the *true model*, whether that model is consistent with consumer theory or not. Thus, the cost function approximation makes the AIDS as general as the translog model (TL) is, whereas the demand system approximation makes it as general as the Rotterdam model (RTDS) is. As in the case of RTDS, the general restrictions of consumer theory are unchanged for all values of total expenditure and prices. Similarly, the restrictions can be expressed in terms of the parameters of the demand system. Among other advantages — given that the underlying cost function belongs to the PIGLOG class — the AIDS budget-share equations can be perfectly aggregated. Moreover, implied Engel curves are non-linear, an important empirical property that most previous demand systems fail to incorporate (Thomas, 1987). Finally, the AIDS, compared with TL, for example, is easy to estimate (provided one approximates the price index P, defined in (2.37) by an alternative price index (P^*). Since prices tend to move co-linearly over time, an approximation to P may be obtained using an alternative price index P^* known as Stone's price index:

$$P^* = \sum_i w_i \log p_i. \tag{2.40}$$

This version, known as the 'Linear-Approximate' AIDS model, or LAIDS is the one most widely used in empirical demand analysis. In the tourism

[15]The qualification '*Almost*' in the name of the system is due to this shortcoming (Barten, 1993).

field, an overwhelming majority of the demand studies are based on this version (see the Sec. 2.4 empirical studies). The popularity of it is due mainly to the fact that, unlike the use of the original non-linear translog price index, the Stone price index can be calculated prior to the model's estimation, thus avoiding complex non-linear estimation methods.[16] In the absence of cross-equation restrictions, the AIDS model may be estimated equation by equation using the ordinary least squares (OLS) method.[17]

2.4.1. *Choice of the functional form*

With the availability of a variety of functional forms to choose from, which one should be used to study a particular economic relationship? The choice of a functional form for applied research is complicated by the lack of theoretical and empirical knowledge to determine the exact economic functional relationship and its algebraic form (Lau, 1986; Thompson, 1988). However, econometricians have developed several selection criteria based on empirical and theoretical considerations. On empirical grounds, the criteria include overall performances of different models and goodness of fit, including the validity of the model-generated elasticities (Barten, 1993; Flood *et al.*, 1984; Lewbel, 1989b). On theoretical grounds, several criteria have been suggested: *aggregatability*, *regularity* (Barnett and Lee, 1985; Cooper and McLaren, 1992), *price aggregatability* (Lewbel, 1989a), and the *rank condition* (Gorman, 1981; Lewbel, 1987). Lau (1986) classified these into five groups, enabling one to make broad comparisons. They are respectively: *theoretical consistency, domain of applicability, flexibility, computational facility*, and *factual conformity.*

[16]With the use of the Stone price index approximation, Marshallian price elasticities can be calculated using the following formula (Pashardes, 1993): $\varepsilon_{ij} = (1/w_i)(\gamma_{ij} - \beta_i w_j) - \delta_{ij}$.

[17]It should be noted that, despite the wide usage of the LAIDS model in empirical demand analysis, the use of this version is not without controversy. One such highly debated issue is the specification of the LAIDS price elasticities (for example, see Green *et al.*, 1990, 1991; Pashardes, 1993; Buse, 1994). Many early studies used an elasticity formula derived for the non-linear AIDS model to calculate elasticities using the parameter estimates derived from the linear version of the model. However, all issues pertaining to the specification, estimation, and interpretation of the LAIDS elasticities are irrelevant if instead the original non-linear price index (2.37) is used in estimation.

Theoretical consistency implies that the chosen algebraic form must be capable of possessing all theoretical properties and can reproduce all relevant economic parameters. Domain of applicability (regularity) refers to the set of values of the independent variables over which the chosen functional form satisfies all the requirements for theoretical consistency. Flexibility refers to the ability of a functional form to approximate arbitrary, but theoretically consistent, behaviour through an appropriate choice of parameters.[18] Computational facility refers to ease in estimation: The number of parameters should be the minimum required for achieving a desired degree of flexibility, given the small number of observations available. Finally, factual conformity refers to the consistency of the functional form with known empirical facts.

In practice, no functional form is known to satisfy all five criteria simultaneously. For specific applications, therefore, the choice of a functional form is somewhat arbitrary. For example, consider the LES, which is theoretically consistent, globally regular, and is a parsimonious system of demand equations. The functional form is, however, inflexible in that it can be used to represent only limited preferences. For example, the underlying preference ordering is additive and rules out inferior goods, implying that all goods are *Hicksian substitutes*. A further consequence of the additivity is that cross-price derivatives are proportional to expenditure derivatives. This has implications for the structure of price effects. As Brown and Deaton (1972) show, LES like any other additive model, will impose a structure on estimated price effects largely independent of the structure of actual price effects. Further, the LES fails to meet factual conformity in some circumstances and gives rise to parameters which are difficult to interpret (for example, see Flood *et al.*, 1984; Theil and Clements, 1987).

The RTDS, on the other hand, has flexibility in the sense that it is not based on any particular functional form and it can be used to test the validity of theoretical restrictions. However, the particular parameterisation adopted has restrictive implications (Phlips, 1974). Recall that the RTDS is a differential demand system derived from a double logarithmic equation. If this is to be derived from the underlying demand system, a necessary condition is that the partial derivatives with respect to income and prices must exist and be continuous. For this condition to be satisfied, it is necessary that the

[18] A functional form for a complete system of demand functions is said to be flexible if at any given set of non-negative prices, incomes, and parameters, demand functions can be chosen so that the own, cross-price, and income elasticities are capable of assuming arbitrary values subject only to the requirement of theoretical consistency.

integratability condition be met. If the second order partial derivatives are evaluated for the RTDS where the b_i and s_{ij} are assumed to be constant, then the imposition of the restrictions necessary for the integratability condition leads to a simple system of demand equations with unitary income and price elasticities and zero cross-price elastic ities.[19] This implies that expenditure on any good, $p_i q_i$, is always some constant proportion of total expenditure, regardless of the structure of relative prices.

Among flexible functional forms, the most widely used TL and AIDS have flexibility, theoretical consistency, and are parsimonious. However, neither the TL nor the AIDS satisfy the global regularity conditions (that is, the translog indirect utility function will not be globally quasi-convex nor will the AIDS cost function be globally concave), although they can be regular over a restricted range (Cooper and McLaren, 1988; Deaton, 1986; Diewert and Wales, 1987; Lau, 1986). Although this is trivial, as Deaton (1986) noted, it is possible to improve the regularity by either imposing restrictions prior to estimation, or modifying the underlying cost functions (for example, see Chalfant, 1987; Cooper and McLaren, 1988; Cooper *et al.*, 1991). However, as Lau (1986) has shown, flexibility and regularity are incompatible. Thus if regularity is to be incorporated into a flexible functional form, it is at the expense of flexibility. Further, such improvements appear to have some implications for the economic plausibility of some derived elasticity parameters as well.[20] Therefore, any attempt to improve regularity is likely

[19] These kinds of demand functions are known as *Bergson functions* (Bergson, 1936). For a proof that Bergson functions imply differential demand equations of the Rotterdam form with constant $b_i s$ and $s_{ij} s$, see Thomas (1987). Goldberger (1967) and Yoshihara (1969) have shown that the Rotterdam system can be derived from the Klein and Rubin utility function, leading to unitary income and own-price elasticities. For a response to these critiques, see Theil (1976).

[20] A comparison of expenditure elasticities — in relation to necessities derived from a version of a regular flexible functional form (Mc-Fadden and Cobb–Douglas) with LES and AIDS — revealed some interesting evidence. The movements in expenditure elasticities in relation to food (also clothing and tobacco) derived from the Cooper–McLaren model and the LES follow the same trends. The expenditure elasticity of food, for example, rose from 0.33 to 0.70 from 1953/54 to 1990/91, as in the case of the elasticities derived from the LES (in the LES case, the elasticities increased from 0.42 to 0.64). By contrast, the elasticities derived from the AIDS took the opposite trend, declining from 0.64 to 0.39. The movements in the expenditure elasticities derived from the AIDS are closer to the observed facts (that is, when real income rises, all goods and some particular necessities become less luxurious (Flood *et al.*, 1984). The Chalfant (1987) results, drawn from his globally regular version of the AIDS, also indicate irregularities.

to impose some restrictions on the preference structure, and the resulting parameter estimates could be biased, as they are conditional upon prior restrictions.

According to Lau (1986), among the five criteria, the only area where a compromise can be made is the domain of applicability (regularity). This is because most practical applications can be accommodated, even if the functional form is not globally theoretically consistent, as long as it is theoretically consistent within a sufficiently large subset of the space of independent variables. In this context, both AIDS and TL satisfy this condition. Further, each of these demand systems has identical properties: both have budget share Engel curves that are linear in the log of total expenditures and similar aggregation properties; and they have indirect utility functions that are built up of polynomials in log prices. Moreover, Lewbel (1989b) has shown that the AIDS and TL are almost equal in terms of explanatory power and goodness of fit.

Finally, in terms of computational facility, the AIDS outperforms the TL in that the AIDS system can be estimated using non-linear estimation methods with a slight modification to the original AIDS price index. That is, to approximate the non-linear AIDS price index with Stone's (1953) index $\log P^* = \Sigma w_k \log p_k$. This version became known as the 'Linear-Approximate' AIDS model, or LAIDS. This most widely used version of the AIDS model in the empirical literature agrees with Lau's criteria and the one suggested by Barten (1993): For empirical purposes, the ideal specification of a demand system should be consistent with theory, easy to estimate, and have predictive capabilities. These desirable qualities are the key to the popularity of the AIDS demand system among the analysts of consumer demand and it has become the industry standard (Arrow *et al.*, 2011).[21] As with the general recent literature on empirical demand analysis, the AIDS model is the most widely used in estimating demand for tourism. A detailed discussion of the existing studies is presented in the next chapter where the empirics of tourism demand modelling is addressed.

2.5. Summary and Concluding Remarks

In this chapter, an attempt was made to synthesise the process of modelling empirical demand functions as a guide for the modellers of tourism demand.

[21] According to a recent survey this work has been rated as one of the top 20 articles published in the *American Economic Review* during its first 100 years (Arrow *et al.*, 2011).

The chapter began with a general discussion of tourism, its significance, and its unique characteristics as a prelude to discussing and presenting issues relevant to the modelling and specification of empirical demand models. Then the underlying theory of consumer behaviour, which has provided a structure and language for model formulation was reviewed. This was followed by a review of the properties of (or restrictions on) demand functions from the point of view of their implications for data analysis, model formulation, and applications. While the implied theoretical restrictions are a consequence of utility maximisation, empirically they impose substantial economies in parameterising a complete set of demand functions. In addition, given the limited span of data, it is frequently necessary to impose further restrictions on price and income responses. In this context, the concept of separability — which follows from the view that consumption decisions occur in two stages — plays an important role in applied demand analysis. The incorporation of this concept makes the estimation of demand functions more tractable, as the number of independent price and income responses is reduced significantly.

Of the three approaches to specification of empirical demand systems, those models that employ flexible functional forms have become popular in recent empirical demand analysis. This popularity is due mainly to their attractive properties, including the ability to incorporate any arbitrary preferences, compared with the older-generation demand systems with restrictive capabilities. However, none of the available demand systems meet all desirable criteria; each contribution has its merits, as well as its deficiencies. Which functional form one should use depends on the question in hand, and the aim of the study. In general, for empirical purposes, the ideal specification of a demand system should be consistent with theory, easy to estimate, and have predictive capabilities.

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Chapter 3

EMPIRICAL ESTIMATION OF TOURISM DEMAND MODELS: A REVIEW

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Abstract: The objective of this chapter is to review the issues confronting applied researchers who rely on established demand systems to analyse specific issues in relation to tourism demand. In doing so, it concentrates on associated modifications and extensions to the base models proposed and applied in the recent literature, along with related model specification and econometric issues. The modifications include incorporating structural changes, seasonality, and other exogenous events that affect tourism demand over time. Extensions include dynamic versions of the base models. Finally, issues in relation to specification and estimation of singular demand systems are reviewed. The chapter concludes with an example of the way in which economic parameters drawn from empirical models are interpreted.

Keywords: Almost ideal demand system; linear expenditure system; tourism demand; translog.

3.1. Introduction

The previous chapter focused on the theoretical foundations of consumer demand analysis, its recent developments, and approaches to the specification of theoretically consistent demand functions and associated models. A critical evaluation of the relative merits of each demand system, based on the criteria proposed by Lau (1986) and others, revealed that no single demand system meets all of the desirable properties of an ideal demand system. Therefore, the choice between them, for empirical purposes, is somewhat arbitrary. The functional form that one should employ depends on the question at hand, and on the aim of the study. In general, for empirical purposes, the ideal specification of a demand system should be consistent with theory, be easy to estimate, and should have predictive capabilities. Specification of demand systems for a particular application is beyond the comprehension of many applied researchers and so they depend primarily

on established demand systems. This is particularly the case with tourism research. All presently available empirical studies on tourism demand are based on established demand systems. They include the Linear Expenditure System, LES, (Sakai, 1988; Smeral, 1988; Pyo *et al.*, 1991), the Translog Demand System (Bakkal and Scaperlanda, 1991; Bakkal, 1991) and the almost ideal demand system (AIDS).

As with the general empirical literature, the almost ideal demand system (AIDS) has been the most widely used of the established demand systems in the tourism field. However, there is no uniformity across the studies in model choice, applications, data, or resulting empirical findings. Researchers have employed several versions of the AIDS model including: (i) The original nonlinear AIDS model (Lyssiotou, 2000; Divisekera, 2008, 2009a, 2009b, 2010a, 2010b, 2010c); (ii) A linear version of the AIDS model (O'Hagan and Harrison, 1984; White, 1985; Sinclair and Syriopoulos, 1993; Papatheodorou, 1999; De Mello *et al.*, 2002; Divisekera, 2003); (iii) A quadratic version of the AIDS model (Coenen and Eekeren, 2003); and (iv) Error correction and other dynamic versions (De Mello *et al.*, 2002; Li *et al.*, 2004; De Mello and Nell, 2005; Mangion *et al.*, 2005; Han *et al.*, 2006). In addition to key economic variables such as income and price, several other exogenous variables have been incorporated into empirical model specifications. These include seasonality, demographic characteristics, and structural breaks reflecting changes in preferences and taste.

Apparent variations in empirical model choice and specifications may reflect — among other things such as differences in the issues being addressed that necessitate extensions to the base model — the nature and availability of data for applications. For example, if one is faced with quarterly data, seasonal patterns may characterise the demand patterns and hence, there is the need for incorporating seasonality into model specification (Divisekera, 2010b). This is particularly relevant to tourism, given the known seasonality associated with tourism demand. In addition, when time series data are used, preferences underlying the observed demand relationships may be subject to structural shifts. Likewise, if available data are from sample surveys and the emphasis is on household demand, demographic characteristics may need to be incorporated (Coenen and Eekeren, 2003). In addition, some inherent properties of time series data may call for the specific treatment of autocorrelation in a singular system of share equations, and alternative modelling strategies such as error-correction and dynamic modelling.

The objective of this chapter is to review the issues confronting the applied researchers who rely on established demand systems for their

analyses of specific issues in relation to tourism demand. In doing so, it concentrates on various extensions to the base models proposed and applied in the recent literature, along with related model specification and econometric issues. The remainder of this chapter is organised as follows. It begins with a brief review of existing empirical studies of tourism demand and on key contributions, their coverage, and the modelling strategies used. Then we discuss issues in relation to model specification, modifications and extensions, and estimations are discussed. The concluding section concentrates on empirical aspects of demand analysis, and in particular on the interpretation of economic parameters derived from empirical models.

3.2. Applications of Demand Systems

3.2.1. *Empirical studies of tourism demand*

The first attempt to model the demand for tourism using a system approach may be traced back to White (1982) who analysed US demand for travel to Western Europe. This was followed by the work of O'Hagan and Harrison (1984), White (1985), and Bakkal and Scaperlanda (1991). One noteworthy feature of the first-generation studies is that all of them were concerned with US demand for travel to Europe and were based on the linear version of the AIDS (LAIDS) model. The exception is the work of Bakkal and Scaperlanda (1991), which used a Translog Demand System to estimate US demand for travel to Europe.

The second generation of studies starting with the work of Bakkal (1991) concentrates mainly on European tourism. Based on the Translog model, Bakkal analysed West German demand for tourism in Mediterranean countries. This was followed by Sinclair and Syriopoulos (1993) and Papatheodorou (1999) who used the LAIDS model to study the US, European, and international demands for tourism in Mediterranean destinations. The next two studies by Lyssiotou (2000) and De Mello *et al.* (2002) concentrated on UK demand and employed extended versions of the AIDS model. For example, Lyssiotou (2000) — who estimated the UK demand for tourism to the United States, Canada, and 16 European countries — used a dynamic version of the LAIDS model due to Anderson and Blundell (1983). De Mello *et al.* (2002) and Li *et al.* (2004) used a co-integration error correction mechanism (ECM) to model UK demand for tourism in neighbouring Western European countries using a modified version of the LAIDS model. This tradition was followed by Mangion *et al.* (2005) who analysed the short- and long-run demand for UK tourism in Mediterranean

destinations, and Cortés-Jiménez *et al.* (2009) who studied Italian demand for tourism in four European destinations.

There is yet another generation of studies that differs from the conventional destination-choice focus. These studies attempt to analyse the demand for destination-specific tourism goods and services. They include Fujii *et al.* (1985), Sakai (1988), Smeral (1988), Coenen and Eekeren (2003), Divisekera, (2007, 2008, 2009a, 2009b, 2010a, 2010b, 2010c, 2011), Divisekera and Deegan (2010), and Wu *et al.* (2011). The first attempt to model demand for tourism goods and services was by Fuji *et al.* (1985). Based on the LAIDS model, they estimated demand for six different classes of goods purchased by visitors to Hawaii: Food and drink, lodging, recreation and entertainment, local transport, clothing, and other. Their estimated expenditure elasticities are all positive, indicating that all goods purchased by visitors are normal goods. All the own price elasticities are negative and significantly different from zero. Sakai (1988) estimated two demand systems for business and pleasure travellers. Based on the LES, the two complete demand systems included food, lodging, recreation, local transportation, clothing, and a miscellaneous category. Sakai found that for business travellers lodging is a luxury good. For pleasure travellers, lodging and transportation are luxury goods, while food and recreation are necessities. Further, he found that business travellers' demands are less price sensitive than pleasure travellers' demands are. Next to follow were Divisekera (2009b, 2010a) and Divisekera and Deegan (2010).

Divisekera (2009b) — based on the non-linear AIDS model — analysed the economic parameters underlying the *ex post* demand for Australian tourism goods and services from 10 source markets in Asia, Europe, and North America. The results suggest that demand for the five broad commodity aggregates — accommodation, food, transport, shopping, and entertainment — representing key tourist consumption elements is price inelastic, implying that from a tourist's point of view all goods are necessities. This result is consistent with the empirical reality that once a tourist arrives at a destination, they are bound to consume the available goods and services. A second important finding is the apparent complementarity of demands. This indicates that tourists tend to purchase a bundle of goods and services, and that all of them are necessary for the maximisation of their utility from the visit. The analysis also suggests that the underlying price elasticities exhibited through cross-price elasticity values have important implications for how price sensitivities should be understood better. Later, Divisekera and Deegan (2010) analysed the demand for Irish tourism goods and services from Britain, North America, mainland Europe, and the rest of the world,

and they also used an aggregate model based on a pooled sample. In general, demand for the various Irish tourism goods and services was found to be price inelastic. The authors attributed these price rigidities to a lack of substitutes, imperfect information on product markets, and the limited consumption opportunities available to the tourists.

The work of Pyo *et al.* (1991) marks a significant deviation from all of these previous studies, in that they concentrated on domestic tourism demand. Based on the LES, they estimated US domestic tourist demand for five commodity groups: Transportation, lodging, food, entertainment and recreation, and other goods and services. They found that among the tourism-oriented products, transportation is the most price sensitive of all, and they argued further that the widely held perception that tourism products are luxuries may result from the income effect on transportation. In a further study, Coenen and Eekeren (2003) used a quadratic version of the AIDS model to examine the demand for domestic tourism by Swedish households. Using microeconomic data drawn from a Swedish tourism and travel database, they estimated a demand system which included five commodity aggregates — groceries, restaurant meals, accommodation, transportation, and shopping. They estimated seven individual demand systems, one aggregate demand (that is, total expenditure) and six household groups distinguished by demographic and household compositional factors. The model for total expenditure shows that income elasticities for domestic tourism demand for the different household categories were all around one; the elasticity for domestic tourism demand was found to be relatively price elastic.

Based on the non-linear AIDS model, using expenditure data collected from Australian National Visitor Surveys, Divisekera estimated a number of demand systems and focussed on different aspects of domestic demand for tourism by Australian households. These include the regional demand for domestic tourism (Divisekera, 2008); aggregate demand for domestic tourism (Divisekera, 2009a); leisure and non-leisure tourism demands (2010b); and regional variations in demand for leisure tourism (Divisekera, 2010c). Each variant contained demand systems incorporating five commodity aggregates; these are food, accommodation, local transport, shopping, and entertainment. The estimated own price elasticities across the eight states and territories reveal price inelastic demand, while the demands for the five commodity aggregates are found to be relatively expenditure elastic. Further, significant variations in the degree of income sensitivity were also observed across the states and territories. These variations may imply that tourists from different origins or states have varying preferences for Australian domestic

tourism goods and services. In relation to leisure and non-leisure tourist demand, the demands by the leisure tourists are found to be relatively more sensitive to prices than are those of the non-leisure tourists. The cross-price elasticities derived from both models reveal gross complementarities of demands, implying that tourists' overall utility depends on their (joint) consumption of a bundle of goods and services. The observed price inelastic demands, coupled with the apparent complementarities of demands, may reflect the possibility of a latent price sensitivity associated with tourist demand.

To summarise, following the pioneering work of White (1982, 1985) and others, the system approach to demand modelling has become popular among researchers. Of the existing widely used demand systems, the Linear Expenditure System, Translog Demand Model and several versions of the AIDS have been employed. The most popular of all is the linear version of the AIDS model and its variants. The variants include dynamic versions, error correction, and quadratic forms. These variations and modifications are consequences of the problems and issues confronting the applied researcher who relies on established demand systems for specific applications. An understanding of the literature on relevant issues, their sources, and the ways in which they have been resolved is essential for meaningful applications of the various extensions and modifications.

3.3. Specification and Estimation of Demand Systems

3.3.1. *Model specifications and extensions*

Most applied researchers employing established demand systems to study specific issues are confronted by data availability problems. Often they have to rely on secondary data collected by various agencies and which come in different forms, from different sources, and at differing frequencies. This is particularly the case for tourism. Most tourist demand and expenditure data are collected from sample surveys and hardly a single data source is available. Depending on the nature and availability of data, researchers may confront a variety of issues. For example, issues relating to seasonality and structural changes may arise in applications using data collected over time. In particular, if one is working with quarterly data, seasonal patterns may characterise consumption. This is particularly relevant to modelling tourism demand, given the apparent seasonality associated with tourist flows (see for example, Lyssiotou, 2000; Divisekera, 2009a; 2010b). Further, demand for tourism may be affected by unforeseen events, the global economic downturn, political disturbances, natural disasters, and health concerns. These could

lead to exogenous shifts in tourism demand, and thus need to be accounted for in the modelling (see for example Lanza *et al.*, 2003; Han *et al.*, 2006). The tastes and preferences underlying observed demand relationships may be subject to temporary or permanent structural shifts over time (Bakkal, 1991). In addition, if data are extracted from household surveys and the focus is on household demand for tourism, data aggregated across households may raise questions regarding the aggregation properties of a particular demand model (see for example, Coenen and Eekeren, 2003).

Researchers use various alternatives to resolve such issues; for example, it is common practice to include exogenous intercept shifters (dummy variables) in the basic share equations to capture the effects of structural change, seasonality, or other exogenous shifters (Lyssiotou, 2000; Han *et al.*, 2006; Divisekera, 2003). In doing so, one must be careful to pay attention to aggregation properties to ensure that the addition of such shifters does not violate the adding-up condition. A common approach to incorporate a linear shift in expenditure shares is to add a simple linear trend to the share equations, which is analogous to allowing the intercept term of each share equation to trend (see for example, Fujii *et al.*, 1985; White, 1985; Lyssiotou, 2000). The same intuition carries over to more complex shifters that allow the intercept to shift according to the quarter or season of the year of the observation, or even other shifters such as structural breaks in the time series, and changes in taste and preferences. For example, in the case of AIDS demand system ($w_{it} = \alpha_i + \sum_j \gamma_{ij} \log p_{jt} + \beta_i \log(m_t/P_t)$) time trend, seasonality, and preference shifts are incorporated by replacing the intercept term $\alpha_i$with α_{it} (that is, their effect is measured as a deviation from the intercept) thus:

$$\alpha_{it} = \alpha_{0i} + \delta_{0i} t + \sum_s \delta_{is} D_s, \tag{3.1}$$

where $t = 1, \ldots, T$; D_s are seasonal dummy variables, $S = 1, \ldots, 4$ and $\sum_s \delta_{is} = 0$. The parameters δ_{0i} are interpreted as reflecting exogenous shifts in preferences (Lyssiotou, 2000).

Seasonality is an inherent feature of tourist flows and the standard practice is to use deterministic dummy variables to account for seasonality. Despite its wide usage, this approach to dealing with seasonality is questioned in recent studies that have similar seasonal effects, suggesting the possibility of biased estimates when predetermined dummy variables are used (Fraser and Moosa, 2002). The proposed alternative is to incorporate trigonometric variables to account for seasonality. This approach allows the seasonal cycle to be dictated by the data, rather than using the

deterministic dummy variables that define the season.[1] This is particularly appealing when there are clear structural shifts in seasons (Carlos *et al.*, 2004). Once a demand system is specified incorporating all of the relevant variables and exogenous shifters, the next step involves estimation.

3.3.2. *Model estimation and econometric issues*

There are several issues one needs to take into account when estimating a complete non-linear system of demand equations and when selecting the appropriate econometric methodology.[2] First, there is the stochastic specification of share equations and second, there is the treatment of autocorrelation, particularly when time series data are employed. The stochastic version is defined by adding a random disturbance term to the (any) specified demand system which takes the following general form:

$$w_{it} = \omega_i(f_{it}, \beta) + u_{it}, \tag{3.2}$$

where w_{it} is the ith budget share at time t, f_{it} is the set of explanatory variables, β the parameters to be estimated, and u_{it} a random error. Note that given the dependent variables are shares (w_i), and that they add to unity (that is, the aggregation condition) implies that $\sum_i u_{it} = 0$ for each t. Thus, the errors cannot be distributed independently across equations, and the contemporaneous covariance matrix is singular (Barten, 1969; Pollak and Wales, 1992). Given the singularity of share equation systems, it is not possible to specify autocorrelation terms without imposing additional restrictions (Berndt and Savin, 1975; Deaton, 1986). The solution to this problem, as Barten (1969) has shown, is to omit one of the equations and estimate the resulting $(n-1)$ equations. The resulting parameter estimates are independent of the omitted equation, and its parameters can be recovered using the aggregation and homogeneity restrictions. Usually, the Maximum Likelihood estimator the only known method which yields an estimator invariant with respect to the equation which is dropped — may be used to obtain parameter estimates (Barten, 1969).

[1]The application of this method is carried out by augmenting the share equations with seasonal trigonometric variables and a time trend. For a detailed exposition of this approach and its applications in tourism demand modelling, see Divisekera (2009b, 2010a).

[2]Since the first application of the LES, the problems associated with estimating a complete non-linear system of demand equations are now well-understood and documented. For an excellent review of the issues, see Deaton (1986).

Another related issue dealing with the estimation of demand systems in the context of time series data is the likelihood of misspecification of empirical models and the possibility of the presence of unit roots (Anderson and Blundell, 1982; Attfield, 1997; Ng, 1995; Karagiannisa and Mergos, 2002; Lewbell and Ng, 2005). This particular assertion follows from an important empirical observation: Over-rejection of the homogeneity restriction. That is, when estimates from demand systems are used to test whether real expenditures are invariant to proportional increases in prices and income, the homogeneity hypothesis is often rejected by the data. Among the explanations advanced, over-rejection of homogeneity is due to the dynamic misspecification of empirical models. For example, based on Canadian time series data, Anderson and Blundell (1982) have shown that restrictions suggested by economic theory are not rejected when imposed on the long-run structure. Thus, they propose dynamic modelling as being superior to the practice of static modelling. This approach was first adapted by Lyssiotou (2000) to model UK demand for tourism to the United States, Canada, and 16 European countries.

An alternative explanation advanced by Ng (1995) proposes that time-series issues — unit roots being present — are partly responsible for these rejections. For example, if the data-generating processes of the key explanatory variables such as prices and expenditure follow something akin to a unit root process, the implication is that the data should be first-differenced as a prelude to estimation. When differenced data are used for model estimation, valuable long-term information is lost. Moreover, if the underlying demand system is linear in variables — as it is for the LAIDS model, when a Stone or other price index is used to replace the nonlinear price index — then it is also possible to examine co-integration properties in the context of a demand system (Ng, 1995). This is the approach taken by researchers modelling tourism demands such as Durbarry and Sinclair (2003), Li *et al.* (2004), Mangion *et al.* (2005), and Cortés-Jiménez *et al.* (2009) among others. For example, Li *et al.* (2004) estimated a dynamic LAIDS model to analyse UK demand for tourism to 22 Western countries, and Cortés-Jiménez *et al.* (2009) researched Italian demand for tourism in four European destinations.[3] The general

[3]It should be borne in mind that such methodology — co-integration and error-correction — is applicable when demand systems are linear in variables (that is, as in the case of the LAIDS model). However, the question remains whether linear demand models (LAIDS or any other) are capable of accommodating theoretical consistency, because as Lewbel and Ng (2005, p. 479) noted, 'any non-trivial demand system that is consistent with utility maximization must be non-linear in relative

inference one can draw from these extended versions of empirical demand models is that dynamic models perform better than static models do.

Whatever the type of model one opts for (static, dynamic, error correction, or co-integration), a final issue of significance in estimating a complete system of demand equations is the treatment of theoretical restrictions. Of the four restrictions, the adding-up restriction is automatically satisfied by the way demand systems are constructed and thus it need not be imposed. The negativity condition can be tested for its validity, but it cannot be directly imposed (as a constraint upon econometric estimation).[4] The remaining two restrictions — homogeneity and symmetry — which follow from utility maximisation and the rationality of consumer choices can be imposed or tested when one employs flexible functional forms. For example, estimation of the model parameters may be carried out by imposing homogeneity and symmetry restrictions *a priori* (that is, treating the two restrictions as maintained hypotheses), or they can be tested for their empirical validity based on the estimated model parameters. In practice, many researchers choose to estimate their models by treating the two restrictions as maintained hypotheses; this enables them to economise on degrees of freedom.

3.4. Analysis and Interpretation of Empirical Results

Once a demand system is estimated and values of unknown model parameters are obtained, the next step is to analyse and interpret them in the light of underlying economic theory and the particular behaviour or issue

prices'. For an approach to model non-stationary data in the context of the Translog model, see Lewbell and Ng (2005). Further, it should be noted that another limitation of the time series approach to demand system estimation is that shares are, by definition, bounded on the unit interval, a result that is in turn inconsistent with unit root behaviour and, therefore, with first differencing. See, for example, the discussion in Davidson and Terasvirta (2002). Thus, too much should not be read into this error correction approach, as a viable alternative in the context of estimating demand systems and further research in this area is warranted.

[4]An alternative suggested in the literature is reparameterising the Slutsky matrix so that the negativity condition may be directly imposed at a point during estimation. For a detailed discussion, see Diewert and Wales (1988a, 1988b), Moschini (1998), and Ryan and Wales (1998). An implication of the negativity condition is that Hicksian or compensated demand functions will be non-increasing in own price (that is, the Slutsky matrix will be negative semi-definite). Thus, a simple rule of thumb to test empirically whether the negativity condition is met is to verify that the compensated own price elasticities are negative.

being studied. Two types of issues are central in tourism demand analysis: Destination choice or demand for tourism at various destinations or countries, and demand for destination-specific tourism goods and services. The key economic parameters common to all types of demand studies are price and expenditure. They reflect the effects of destination prices on the demand for tourism for that destination, prices of alternative or competing destinations, and their interactions along with the effects of income and (or) expenditures as a determinant of tourism demand. Any estimated demand system, whatever the functional form employed, results in a large number of parameters, and direct interpretation of them is difficult and is often not amenable to a non-specialist. The usual practice is to use elasticities derived from the estimated model parameters to evaluate the significance of factors influencing demand.

The economic concept of elasticity of demand refers to how sensitive the demand for a good is to changes in another economic variable. More precisely, it gives the percentage change in quantity demanded in response to a 1% change in another economic factor (holding constant all the other determinants of demand, such as income). Elasticity is, therefore, a measure of the degree of responsiveness of a change in one variable to the change in another. Demand elasticity is important therefore in that it helps firms and policy makers to predict potential changes in demand due to changes in the price of the good, the effect of changes in the prices of other goods, consumers' incomes, and many other economic factors.

Of the various elasticity measures, price elasticity of demand (PED) — also called 'own' price elasticity of demand — is the most important of all. It measures how responsive the quantity demanded of a good or service is to a change in its price. The demand for a good or service is said to be *inelastic* (or *relatively inelastic*) when the PED is less than one (in absolute value)[5]; that is, changes in price have a relatively small effect on the quantity of the good demanded. The demand for a good is said to be *elastic* (or *relatively elastic*) when its PED is greater than one (in absolute value); that is, changes in price have a relatively large effect on the quantity of a good demanded. The cross-price elasticity measures how a change in the price of a commodity affects the demand for related commodities. These effects are usually measured for a pair of commodities. Negative cross-price elasticities indicate that the two

[5]Own price elasticities are negative by definition (that is, due to the law of demand). Only goods which do not conform to the law of demand, such as Veblen and Giffen goods have a positive PED.

commodities are complements, and positive cross-price elasticities indicate that the commodities are substitutes.

There are two variants of the PED: 'uncompensated' or Marshallian, and 'compensated' or Hicksian.[6] Uncompensated price elasticities indicate how a change in one destination's price affects the demand for it and that of other destinations. Compensated demand elasticities measure these effects, assuming that real expenditure is held constant. The uncompensated price elasticities are based on maximising utility under the budget constraint, while the compensated price elasticities are based on minimising expenditures at a fixed utility level. Hence, the former comprises substitution transfer or diversion from one to other destinations, and the income effect (induction or generation of new demand) is due to changes in the total expenditures for the group of commodities of interest; that is, total travel expenditures. The latter includes only the substitution effect.

The second most important economic factor influencing demand for a commodity is household income or total group expenditure. The significance of this factor is measured based on the concept of the expenditure (or income) elasticity of demand. It measures the sensitivity of demand to a change in total expenditure. It is interpreted similarly to the price elasticity of demand; if the elasticity is greater than one, demand is said to be expenditure (or income) elastic and if it is less than one demand is said to be expenditure (or income) inelastic. For most commodities, income elasticity is expected to be positive. If the estimated income elasticity of demand is positive, the commodity in question is a 'normal' good. If the income elasticity of demand for a commodity is positive but less than one in magnitude, it is a 'necessity'. If the elasticity of demand is greater than one, it is a 'luxury' or 'superior' good. Note that income elasticity can take a negative value in some instances, in which case the commodity in question is 'inferior'. That is, an increase in income will lead to a fall in its demand. Further, income

[6]The difference between a Marshallian (normal) demand curve and an income-compensated one is that the income-compensated one has been constructed in such a way as to exclude the income effect of a change in price. Thus the Hicks-compensated demand curve shows how quantity demanded varies with price, assuming that as price changes consumers are compensated with enough income to keep them on their initial indifference curve (utility level). The two different demand curves and the way that they are derived are presented below. For a normal good, because the Hicksian ignores the income effect, the change in quantity demanded in relation to a certain price change will be smaller in terms of compensated demand, since the Marshallian includes both the income effect *and* the substitution effect.

elasticity could take the value zero implying that an increase in income is not associated with a change in the demand for a good; such products are identified as 'sticky' goods.

3.4.1. *Interpretation of demand elasticities: A numerical example*

Table 3.1 reproduces results from the study by Divisekera (2003) on Japanese demand for tourism in Australia, New Zealand, the United Kingdom, and the United States. It is a guide to the interpretation of demand parameters resulting from an estimated system of demand equations.[7] The elasticity matrix provides all the key elasticity estimates: Own and cross-price (both uncompensated and compensated), along with expenditure elasticities. The demand is measured in terms of budget or expenditure shares (as consistent with standard consumer theory).

The diagonal elements of the elasticity matrix under the subheadings 'uncompensated' and 'compensated' represent the 'own' price elasticities associated with the Japanese demand for tourism in the four destinations. Both uncompensated and compensated own price elasticities are negative, just as the theory of demand would predict. Further, all the estimated own price elasticities are (highly) statistically significant. Thus we conclude that the estimated own price elasticities are theoretically consistent and statistically significant. The elasticities of demand reflecting the sensitivity of Japanese tourists to destination prices varies across the destinations. Japanese demand for tourism in Australia (row AUSTRM) and New Zealand (row NZTRM) are price elastic with elasticities ranging from -2.2 to -2.3. This suggests that Japanese tourists are very sensitive to tourism prices in Australia and New Zealand. In contrast, their demand for UK and US tourism is price inelastic with elasticity coefficients of -0.5 to -0.9, respectively. These results suggest that a given change in destination prices will have differing effects on the Japanese demand for tourism in these four destinations. With a relatively highly elastic compensated demand of an elasticity of around two in absolute value, a given change in tourism prices in Australia and New Zealand could lead to significant falls in tourism demand for the two destinations. In contrast, compensated own price elasticities of demand for

[7]Note that all the empirical studies of tourism demand based on the systems approach, regardless of which functional form is employed, can be used to generate a similar set elasticity parameters. The only exception is the LES. Note that in the LES there can be no inferior goods, nor any net complements.

Table 3.1. Estimates of demand elasticities.

	Uncompensated 'own' (ε_{ii}) and 'cross' (ε_{ij}) Price Elasticities				Compensated 'own' (ε^*_{ii}) and 'cross' (ε^*_{ij}) Price Elasticities			
	AUST	US	UK	NZ	AUST	US	UK	NZ
AUSTRM	**−2.24**	−1.04	0.12	−0.32	**−2.04**	1.91	0.42	−0.28
	(−8.50)**	(−2.56)**	(0.90)	(−2.72)**	(−8.12)**	(6.32)**	(2.82)**	(−2.40)**
USTRM	0.07	**−0.91**	−0.05	0.03	0.12	**−0.18**	0.01	0.04
	(3.79)**	(−9.91)**	(−3.74)**	(3.55)**	(6.32)**	(−5.75)**	(1.18)	(4.51)**
UKTRM	0.26	0.01	**−0.51**	0.03	0.27	0.17	**−0.49**	0.04
	(2.58)**	(0.03)	(−4.55)**	(0.71)	(2.82)**	(1.18)	(−4.21)**	(0.75)
NZTRM	−1.77	−1.64	−0.18	**−2.34**	−1.44	3.40	0.39	**−2.28**
	(−2.81)**	(−1.53)	(−0.44)	(−5.92)**	(−2.39)**	(4.51)**	(0.75)	(−5.78)**
Expenditure Elasticities (η_i)								
	3.48	0.85	0.19	5.94				
	(8.08)**	(19.54)**	(0.79)	(5.31)**				

Diagonal elements are own price elasticities
t-values are in parentheses, Significance levels: * = 5%, ** = 1%
Source: Divisekera (2003).

UK and US tourism are price inelastic, and the least elastic is the Japanese demand for US tourism, with a compensated own price elasticity of 0.18 in absolute value.

The compensated cross-price elasticities allow an assessment of destination interdependencies: Whether the tourism products of any destination-pair are substitutes or complements. These can be identified by examining the off-diagonal elements of the compensated elasticity matrix. For example, the row AUSTRM denotes the own (diagonal) and cross-price (off-diagonal) elasticities in relation to Japanese demand for Australian tourism and the demands for the United Kingdom, United States, and New Zealand. With a compensated own price elasticity of around −2, a rise in Australian tourism prices reduces Japanese tourism demand for Australia appreciably, and the resulting substitution away from this country increases the demand for tourism to the United Kingdom and the United States, as the positive cross-price elasticities indicate. Thus, tourism services offered by the two destinations are gross substitutes. In contrast, the cross-price elasticity coefficient between Australia and New Zealand is negative (−0.28). This implies that not only do rising tourism prices reduce Japanese demand for Australian tourism, but also that of the demand for New Zealand tourism, and thus the two destinations are complements. Complementarity of demand between Australia and New Zealand is strong; a given rise in New Zealand prices (Row NZTRM), for example, leads to a more than proportionate fall in the Japanese demand for Australian tourism, with a compensated cross-price elasticity of −1.4.

The expenditure elasticities associated with Japanese demands are positive implying that tourism products offered by the four destinations are normal goods. Thus, an increase in total Japanese travel expenditure will increase the demand for tourism to the four destinations. The varying degrees of elasticities across the destinations indicate that rising travel expenditure will have differing effects on individual destinations. For example, Japanese demands for tourism in Australia and New Zealand are highly expenditure elastic, with elasticity coefficients ranging from 3.5 to 5.9, while tourism demand for the United States is relatively expenditure inelastic, with elasticity closer to unity (0.85). These estimates suggest that New Zealand and Australia will gain a substantial share of rising Japanese travel expenditure (that is, more than a proportional increase), while the United States will experience a near equiproportional increase. Expenditure elasticity for the United Kingdom reveals a highly expenditure inelastic demand (0.19); however, the elasticity coefficient is not statistically significant. Overall, Japanese tourists perceive that Australia and New Zealand are luxury or upmarket

destinations, whereas the United States and the United Kingdom are seen as normal, necessities, or low-market choices.

3.5. Concluding Remarks

This chapter reviewed various studies that employ a systems approach to modelling tourism demands. Of the established and most widely used demand systems, the Linear Expenditure System, Translog Demand System, and the AIDS have been the prime choices among modellers of tourism demand. Of the three, the most popular is the linear version of the AIDS model and its variants. The variants include dynamic versions, error correction, and quadratic forms. These variations and modifications are consequences of problems and issues confronting the applied researcher who relies on established demand systems for specific applications. Some are specific to the issue at hand, while some are data driven. We reviewed the specific issues and the ways in which they have been addressed in the literature. These include various extensions and refinements including ways of incorporating demographic effects, issues associated with incorporating structural changes, seasonal effects, and data stationarity issues. Finally, we reviewed the specification and estimation of singular demand systems. The chapter concluded with an example of the way in which economic parameters drawn from empirical models are interpreted.

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About the Author

Refer to *About the Author* in Chapter 2.

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Chapter 4

TOURISM MARKET SEGMENTATION: A STEP BY STEP GUIDE

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Abstract: Different tourists have different needs. This fact is widely acknowledged both among tourism researchers and in industry. As a consequence, market segmentation has developed to become a very popular marketing strategy for destinations and tourism businesses. They aim to develop a competitive advantage by identifying suitable segments of tourists and offer them the tourism service that will most satisfy their needs. Market segmentation strategy, however, can only be as good as the market segmentation analysis used as its basis. This chapter begins with a brief history of tourism market segmentation, outlining successful approaches as well as sub-optimal standard approaches that have developed over the last few decades. Then it offers a step by step guide to data-driven market segmentation with the aim of ensuring maximum validity of tourism market segmentation studies.

Keywords: Market segmentation; *a priori*; *a posteriori*; commonsense; data-driven; post-hoc.

4.1. Introduction

'Market segmentation [. . .] consists of viewing a heterogeneous market . . . as a number of smaller homogeneous markets' (Smith, 1956, p. 6). This enables providers of tourism services — who are operating in a fiercely competitive market — to focus their attention on one or a small number of segments, determine what these segments want and ensure that their needs are satisfied. As a consequence they (1) are not wasting marketing dollars on market segments that are not interested in their offer and (2) have the opportunity to develop a competitive advantage in the segments they target. Tourists who belong to these segments will be more satisfied, may therefore return to the destination or tourism business and will share their positive experiences with friends and family.

A market segmentation strategy commits a tourism destination or business to focus on one or a small number of segments for a long period of time. It is, therefore, crucial to use all available market intelligence to select market segments wisely. The key source of market intelligence used for this purpose is market segmentation analysis. However, market segmentation analysis is not a trivial computation like an addition. In an addition, two and two always gives four. In market segmentation, many factors relating to the data and method, as well as many decisions made by the data analyst, influence the final segmentation solution. To arrive at the most valid market segmentation solution it is therefore critical to be aware of all the factors that impact on the final solution and make transparent decisions throughout the process of data analysis. It is the aim of the author of this chapter to provide some guidance to researchers and data analysts in industry on which difficulties they will face in the course of conducting a market segmentation analysis and which options they have to address them to ensure they arrive at a transparent and valid market segmentation solution. This will then form a strong basis for the development of a long-term segmentation strategy.

4.2. Segmentation Research in Tourism: A Brief History

Market segmentation studies can broadly be divided into *a priori* (Mazanec, 2000) or commonsense studies (Dolnicar, 2004) or post-hoc (Myers and Tauber, 1977), *a posteriori* (Mazanec, 2000), or data-driven (Dolnicar, 2004).

In the case of *a priori* or commonsense segmentation studies one tourist characteristic is chosen in advance, for example age, gender or main purpose of travel (Collins and Tisdell, 2000, 2002a, 2002b). Tourists are then grouped accordingly, for example into age segments, female and male tourists or frequent and infrequent travellers. Once grouped, profiles for each of the groups are developed using other variables of interest, such as travel motivations and travel behaviour.

In the case of post-hoc, *a posteriori* or data-driven segmentation not only one variable is chosen to determine which segment a tourist belongs to. Instead, a number of variables is selected. For example, ten different tourist motivations to derive a benefit segmentation or seven typical vacation activities may be considered to determine activity segments. In this case, it is not as simple to assign tourists to the groups because it first has to be established which groups exist or are managerially useful. This is achieved in a step-wise process involving a grouping algorithm (which will be discussed in detail in the next section). Once the segments have been determined,

Table 4.1. Commonsense versus data-driven segmentation.

	Commonsense segmentation	Data-driven segmentation
Grouping criterion	Relevant tourist characteristic is known and is one single variable (e.g., age, gender, country of origin).	Single relevant tourist characteristic is not known. Sets of variables are suspected to be of interest (e.g., travel motives, vacation activities).
Assignment of tourists to groups	Simple assignment based on tourist characteristic (e.g., males in one group, females in another group).	Step by step process, including: • Data collection; • Variable selection; • Clarification of the segmentation concept; • Number of clusters selection; • Algorithm selection; • Visualisation and interpretation.
Testing for differences (validation)	Testing whether the segments differ in variables other than the segmentation base.	Testing whether the segments differ in variables other than the segmentation base.
Evaluation	Comparative analysis and selection of the most suitable segment.	Comparative analysis and selection of the most suitable segment.

each of the groups are described using other variables of interest, such as travel motivations and travel behaviour. This last step is the same as for a commonsense segmentation.

A summary comparison of steps involved with data-driven and commonsense segmentation are provided in Table 4.1.

Commonsense segmentation has been used in tourism industry from its very beginnings. Destination management organisations have traditionally used geographic criteria to form commonsense segments, which then formed the basis for differentiated communication strategies. Geographical commonsense segmentations were often motivated by practicalities, rather than aiming to achieve a competitive advantage. For example, the Austrian tourism

organisation, in order to communicate its tourism offers to all neighbouring countries, needs to develop communication messages in six different languages. Academic segmentation research profiling *a priori* segments such as older travellers, female travellers etc. also has a long history.

Data-driven segmentation studies (both academic and applied) have a more recent history. Haley (1968) was the pioneer of this approach to segmentation. The first data-driven tourism segmentation studies were published in the early 1980s (Calantone *et al.*, 1980; Goodrich, 1980; Crask, 1981; Mazanec, 1984). Since then the popularity of segmentation studies in tourism has skyrocketed and a large number of segmentation studies have been published (5% of total tourism publications, Zins, 2008). A few authors have attempted to summarise the developments in tourism segmentation research during this time (Frochot and Morrison, 2000; Dolnicar, 2002). Most recently, Zins (2008) asked the question whether any progress has been made in the last 20 years of segmentation research in tourism. He concludes that segmentation research holds, almost consistently over the past two decades, a market share of 5% of all tourism studies, with data-driven segmentation studies gaining popularity over commonsense segmentation studies. He also identifies that few methodological advances have been made and that significant weaknesses can still be detected in the areas of segmenting prospects rather than current customers, integrating segmentation studies with positioning and other strategic matters, paying more attention to changes in segments over time and evaluating resulting segments in terms of their managerial usefulness (Dibb and Simkin, 1994, 1997, 2001).

Overall, it can be concluded that in tourism research a standard segmentation approach has developed over the years, which does not necessarily represent the optimal methodological solution for the problem at hand. This standard approach can be characterised as follows: Tourism researchers typically use an available data set (rather than collecting data specifically for the purpose of the segmentation study), we tend to prefer complicated multi-step segmentation procedures (such as factor-cluster segmentation), we generally do not have a strong justification for selecting a particular number of clusters, we run a segmentation algorithms once (not acknowledging the exploratory nature of most algorithms used in segmentation), we often (wrongly) test for statistical significance of the differences in the variables which they used to segment the market, we run analyses of variance of chi-square tests without correcting for multiple testing, we present findings in tables, which practitioners find very difficult to interpret and we do not provide guidance with respect to which segment the most useful one is from a manager's point of view.

4.3. A Step by Step Guide to Data-driven Tourism Market Segmentation

Data-driven market segmentation analysis consists of a sequence of steps: (1) Clarification of the conceptual foundation, (2) Determination of tourists characteristics expected to be of most value to the determination of managerially useful market segments, (3) Data collection, (4) Item (variable) selection, (5) Selection of the number of clusters, (6) Algorithm selection, (7) Visualisation and interpretation, (8) Validation and, finally (9) Evaluation of the resulting market segments and selection of the most promising market segment to choose for long-term targeting. These steps are depicted in Fig. 4.1, which also illustrates that, at every stage, a number of alternative approaches are available and that the approaches chosen at each of the steps interact with approaches chosen in other steps, thus affecting significantly the final segmentation results.

4.3.1. *STEP 1: Conceptual foundations*

Before a data-driven segmentation study is commenced, the data analyst and client have to be aware of a few basic features of market segmentation analysis. First of all, data-driven market segmentation is an exploratory process. Despite this fact, data-driven segmentation would detect the true market segments if they indeed existed in the data (as illustrated in Fig. 4.2a). But this is typically not the case. Typical tourist data does not contain distinctly separated tourist clusters. Instead, tourists come in all 'shapes and forms'

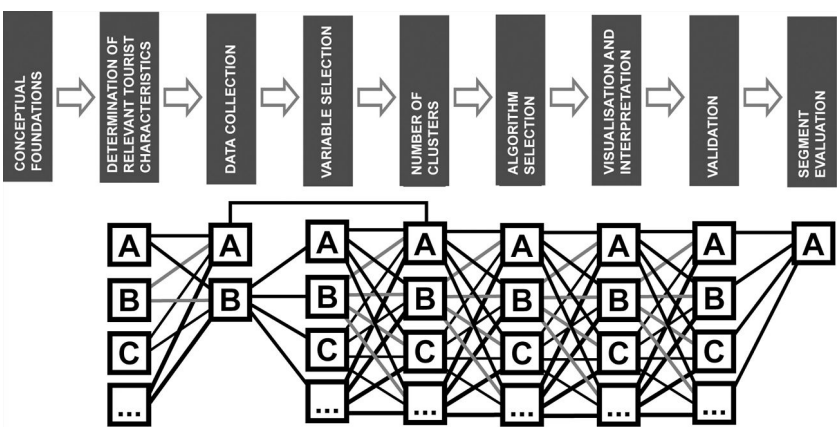

Fig. 4.1. Data-driven market segmentation step by step.

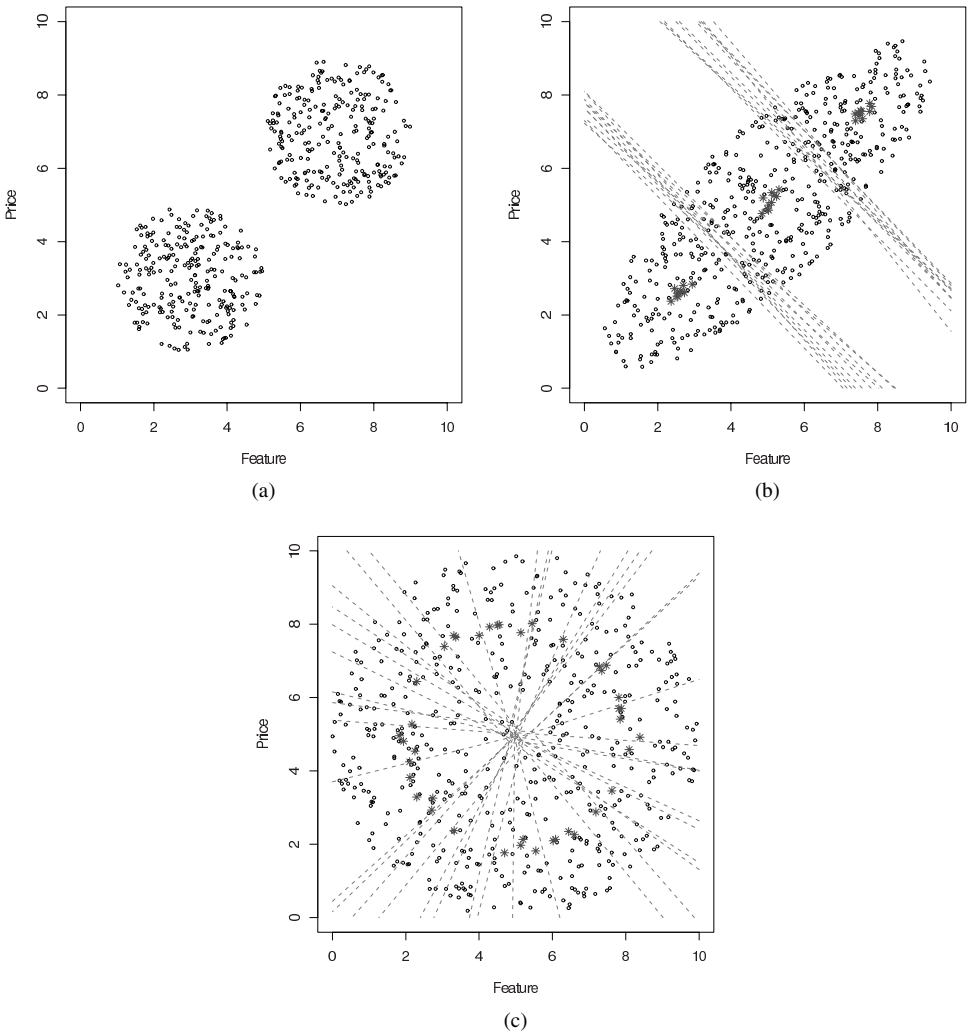

Fig. 4.2. Possible two-dimensional data situations (adapted from Dolnicar and Leisch, 2010).

and thus cover the entire data space, typically without a clear separation line (as shown in Fig. 4.2c). Because most segmentation algorithms draw random starting points at the beginning of the computation, every repeated calculation will lead to a different grouping (illustrated by the lines in Fig. 4.2c which represent segment borders). This problem cannot be avoided, it is, therefore, essential that data analysts and clients are aware of the fact that, most likely they will be confronted with a situation like that in Fig. 4.2a and will have to, consequently, manually inspect a number of segmentation

solutions to determine the most managerially useful one. If they are lucky, they will find a situation such as that illustrated in Fig. 4.2b, where true clusters do not exist in the data, but repeated computations still arrive at the same solution, giving the data analyst and the client more confidence in the results because of higher reliability across replications. In the end, clustering is 'little more than plausible algorithms that can be used to create clusters of cases' (Aldenderfer and Blashfield, 1984).

Secondly, in most cases only one good segment is needed. It is, therefore, irrelevant what the complete segmentation solution looks like. Ultimately only the one segment that will be selected for targeting matters, so the aim of a data-driven segmentation solution should be to find that one segment that will become the long-term focus of a tourism destination or business rather than trying to find the best overall segmentation solution.

Furthermore, segmentation analysis does not stand alone. It is strongly interrelated with, at least, two other strategic areas: Positioning and competition. This becomes relevant when one or more segments are chosen for targeting. These segments need to be in line with both the position of the destination or tourism business and they should not be exposed to fierce market competition. Yet, these two aspects typically are not considered in the actual segmentation analysis, thus requiring data analyst and client to assess the segmentation solution within the destination's or tourism businesses' context.

Finally, data analysts should use the simplest possible methodology that solves the managerial problem. Often, therefore, it is worth questioning if data-driven segmentation is necessary. If commonsense segmentation solves the problem, it should be considered and not dismissed as 'not sophisticated enough'.

4.3.2. *STEP 2: Determination of relevant tourists characteristics*

Before data can be collected, the data analyst and client need to determine which tourist characteristics can be expected to be useful in creating distinct segments. This decision cannot be made by the data analyst alone, nor can it be made by a method. The data analyst and client, based on prior market knowledge or qualitative research preceding the data collection for the segmentation study, could, for example, determine that activities tourists wish to undertake during their vacation. These are likely to provide the most promising segmentation base because of the unique activities a tourism destination may be able to offer.

4.3.3. *STEP 3: Data collection*

Data collection must be undertaken keeping in mind the managerial objectives of the segmentation study. The managerial objectives affect the data collection process in at least two direct ways: First, it affects the sample of respondents. As Zins (2008) rightly points out, most segmentation studies look at current customers only (e.g., people are surveyed when they are already at a destination, so they have clearly already made the decision to come to the destination once) as opposed to including a broader tourist population that will help management understand not only segments among current customers but also segments among non-customers which potentially could be converted to visitors.

Second, it affects the questions that are being asked. If vacation activities are the segmentation base of interest, the focus lies on developing the most valid set of items to capture relevant vacation activities. In addition, other information the client may require needs to be included (for example, general travel behaviour) but also sources of information used when choosing a destination or tourism business.

Two more general aspects should also be taken into consideration when developing questionnaires for data-driven segmentation studies: (1) as will be discussed in Sec. 4.4, the number of items (variables, survey questions) that can be used given a certain sample size is limited. It is, therefore, important that questions are not carelessly included in the questionnaire, which causes problems down the track in the analysis. Instead questions should be very carefully selected and kept to the minimum without information loss. There is no need to include redundant items. (2) The key underlying computation of data-driven segmentation analysis is distance measurement. Clear distance measures exist for metric data (e.g., age in years) as well as binary data (e.g., yes, no), but this is not the case for ordinal data (e.g., five or seven point agreement scales). Furthermore, ordinal scales are susceptible to capturing response styles (e.g., people's tendencies to use the extreme answer options or the middle answer options, irrespective of content, Paulhus, 1991). This is especially critical when international tourists are surveyed for segmentation studies because people from different cultural backgrounds are known to have different response styles (Chun *et al.*, 1974; Hui and Triandis, 1989; Marin *et al.*, 1992; Marshall and Lee, 1998; Roster *et al.*, 2003; van Herk *et al.*, 2004; Welkenhuysen-Gybels *et al.*, 2003; Zax and Takahashi, 1967). If there is no compelling reason that multi-category answer options are required, binary (yes–no) answer formats should be used. This choice simplifies the market segmentation process and does not come

at a cost in terms of the quality of measurement (Dolnicar, 2003; Dolnicar and Grün, 2007; Dolnicar *et al.*, 2011).

4.3.4. *STEP 4: Item (variable) selection*

If the data collection was designed well, the number of variables (survey questions) that are used as segmentation base should be suitable to the sample size. A rule of thumb for the required sample size given a certain number of variables is 2^k for binary questions where k represents the number of variables (Formann, 1984).

If data analysts find themselves in the situation of having to work with a data set that was not collected with the segmentation study in mind, it is likely that the number of variables will be too large for the sample size at hand (as demonstrated by Dolnicar, 2002). In this case, it is necessary to select a subset of variables to be included in the analysis.

In tourism research the typical procedure to deal with too many variables is to use something called (uniquely so in tourism research) 'factor-cluster analysis'. This means that the original variables are first subjected to factor analysis and the factor scores resulting from the factor analysis are used as segmentation base. This approach is not recommended because a substantial amount of information is lost when raw data is reduced to factors (if the % variance explained is 60%, for example, that means 40% of information in the data is dumped before even commencing the segmentation analysis), the relations of variables to each other are changed, differences between segments can be reduced and segments are identified in a different space than originally postulated (Arabie and Hubert, 1994; Milligan, 1996; Ketchen and Shook, 1996). For empirical studies demonstrating the flaws with factor-cluster segmentation, see Sheppard (1996) and Dolnicar and Grün (2008).

Data analysts should therefore follow the recommendation by Sheppard (1996) who points out that 'Cluster analysis on raw item scores, as opposed to factor scores, may produce more accurate or detailed segmentation as it preserves a greater degree of the original data' (p. 57). If the number of raw items is too large, a few ways can be chosen to reduce the number of variables for the segmentation analysis.

A subset of variables can be selected by eliminating redundant variables. Redundant variables are frequently present in sets of variables. They can be detected either by analysing the consent of the items, or by running a factor analysis and selecting original items from each of the resulting groups of variables. Note, factor analysis is not used to derive factor scores which then represent sets of variables in the subsequent analysis. Instead factor

analysis is merely used to identify groups of items which are associated to enable the data analyst to select original items for each group for inclusion into the segmentation base.

Another option is the use of an algorithm called biclustering which simultaneously selects variables and segments the data (Kaiser and Leisch, 2008). For an example of how biclustering can be used in data-driven tourism market segmentation see Dolnicar *et al.* (2012).

4.3.5. *STEP 5: Number of clusters*

Most segmentation algorithms require the data analyst to make a decision about the number of segments or clusters. This is a key decision in the process of segmentation analysis because it influences dramatically the nature of the resulting segments.

Depending on the algorithm chosen, a number of measures, plots and indices exist to help make this decision. When analysing a data set that contains clear clusters (as illustrated for the two-dimensional case in Fig. 4.2a) any of these heuristics are able to indicate the correct number of clusters (as demonstrated in Buchta *et al.*, 1997).

If, however, the data does not contain density clusters and, in the worst case, contains no structure at all (as illustrated in Fig. 4.2c) these measures, plots and indices are not informative. Such situations should be clearly specified as problematic by the data analyst. In this case, the data analyst has no other option than to generate a number of solutions and, in interaction with the client, determine which one of them is managerially most useful. This approach is perfectly legitimate if there is a lack of data structure.

Frequently data does not contain density clusters but still has some kind of structure (as illustrated in Fig. 4.2b). In this case, a number of clusters can be selected based on the highest stability over a number of replications. This means that for a range of numbers of clusters (e.g., 3 to 10) multiple segmentation solutions are computed and compared with respect to similarity using the Rand index (Rand, 1971). The most stable number of clusters is then chosen. This approach is described in detail in Dolnicar and Leisch (2010) and can be replicated using the statistical computation environment R version 2.3.1 (R Development Core Team, 2006) with the extension package flexclust (Leisch, 2006), both available as free software from http://cran.R-project.org.

If this procedure does not indicate higher stability for any number of clusters, it has to be assumed that no structure exists and, as described above, data analyst and client have to 'manually' inspect a range of solutions and choose the managerially most useful.

4.3.6. *STEP 6: Algorithm selection*

A huge number of algorithms are available: parametric and non-parametric, partitioning and hierarchical, response-based, not response-based (Everitt *et al.*, 2011; Wedel and Kamakura, 1998). Yet, a review of previous work indicates that only two of those algorithms are used in most tourism segmentation studies: Ward's hierarchical clustering and the k-means partitioning algorithm are chosen in 80% of studies (Dolnicar, 2002).

Unless response-based clustering is being performed, in which case finite mixture models (Wedel and Kamakura, 1998) are the algorithm of choice, the data analyst needs to be aware of the structure-imposing nature of algorithms. For example, single linkage hierarchical clustering is known to produce long clusters, k-means is known to produce spherical clusters of approximately equal size. These properties of algorithms are described in detail in Everitt *et al.* (2011) and are particularly critical when data does not contain much structure.

An analysis with artificial data sets (Buchta *et al.*, 1997) determined that the topology representing network (Martinetz and Schulten, 1994, also referred to a hard competitive learning) slightly outperforms other partitioning algorithms on a range of data sets which differed in nature and clearness of structure. This study also led to the conclusion that, if data are well-structured, any algorithm is able to identify this true structure, in which case the choice of algorithm is not critical.

4.3.7. *STEP 7: Visualisation and interpretation*

In order to interpret segmentation solutions correctly, it is crucial to present results in a way that is easy to understand and not misleading. Traditionally, results are either presented in tables or in highly simplified summaries. Both approaches have dangers. Tables, the preferred form of presentation in academic reports of segmentation studies, are usually very large and thus hard to derive the key information from. If, for example, a five segment solution is chosen and ten variables were used in the segmentation base, the reader would have to assess 50 numbers when attempting to understand the characteristics of the resulting segments and differences between them. Even more numbers have to be studied if differences in information other than that included in the segmentation base are provided (for example, differences in socio-demographics, general travel behaviour etc.).

Simplified summaries are often used when data analysts present results to commercial clients. Such summaries may include charts of key variables and a

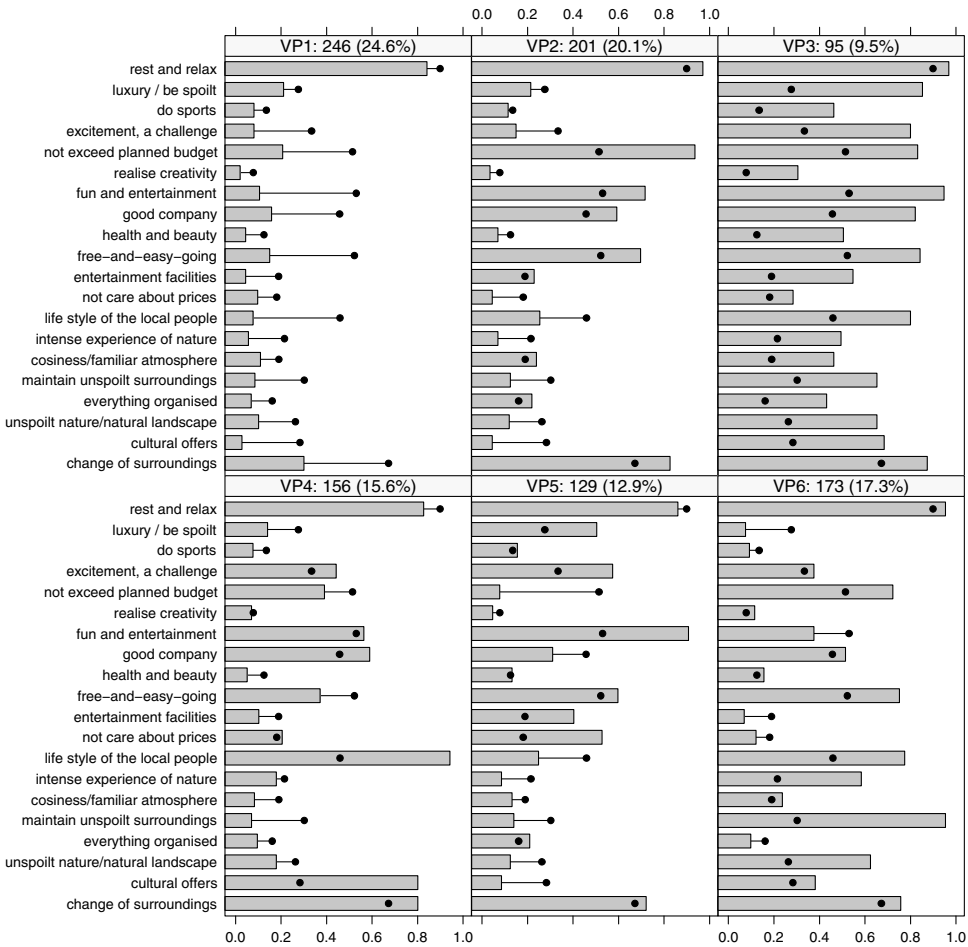

Fig. 4.3. Visualising differences in the segmentation base.

Source: Dolnicar and Leisch (2008).

few dot points on the main differences. This approach simplifies the complex task of making sense of a segmentation solution. The danger associated with it, however, is that the client may only be presented with part of the results: the part the data analyst views as most interesting.

One way of simplifying the interpretation of segmentation solutions is to provide a bar chart of results for the segmentation base (an example which can easily be generated in *R* is provided in Fig. 4.3) and ensure that the clients fully understand the differences between segments on this chart. The example in Fig. 4.3 provides details for six segments using 20 variables. In a

table this would mean providing 120 numbers. In the figure, the client merely has to look at variables where the horizontal bar (indicating the percentage of segment members who agreed, in this case with travel motivations) differs strongly from the black horizontal line with the dot at the end (representing the percentage of people who agreed with this motivation in the total sample). Such variables are referred to as marker variables and represent the key characteristics of resulting segments.

Note that is not permissible to test whether the variables in the segmentation base differ significantly between segments because the cluster algorithm identifies the solution in which these differences are maximal. A test against random differences is therefore statistically incorrect.

After the marker variables have been identified and segments interpreted, differences in additional variables can be selectively provided for those segments that are of interest to the client.

4.3.8. *STEP 8: Validation*

Testing for difference in variables other than those in the segmentation base has two functions: First, it allows a more detailed profile of the resulting segments to be developed. This is important because it forms the basis of the targeted marketing activities to be developed for the chosen segment or segments. Secondly, it serves as external validation of the segmentation solution.

Typical background variables include socio-demographics and general travel behaviour. It is of particular value, however, to include questions about the information search and processing behaviour of respondents in order to be able to create a customised marketing mix.

Again, a number of approaches are available to test for differences in background variables. A common way of doing this is to conduct analyses of variance for metric variables (such as age in years, number of nights spent at the destination) and Chi-square tests for nominal and ordinal variables (such as country of origin, gender, satisfaction level). Note, however, that it is necessary to correct the p-values resulting from these computations for multiple testing. This can be achieved through Bonferroni correction.

Other options are to run discriminant analyses or regressions using the cluster membership as the dependent variable. The advantage of these approaches is that correction for multiple testing is not required because all variables are included in one model and thus accounted for simultaneously.

4.3.9. *STEP 9: Evaluation*

Finally, if the most managerially useful segment has not resulted from the analysis of differences in the segmentation base, resulting segments need to be systematically assessed in view of their attractiveness as target segments for the destination or tourism organisation undertaking the segmentation analysis.

A number of authors have recommended sets of criteria to achieve that (Frank *et al.*, 1972; Kotler *et al.*, 2001; Morritt, 2007; Wedel and Kamakura, 1998). Typically, general criteria include distinctiveness of segments, identifyability, reachability through communication channels, a minimum size to be economically viable and a good match with the strengths of the tourism destination or tourism business planning to target the segment.

More recently, Lazarevski (2009) — adopting an approach proposed by Mazanec (1986) for advertising expenditure allocation — has proposed an approach which can be used to derive key evaluation criteria from the user or users of the segmentation analysis and employ such a customised set to assess resulting segments.

4.4. Conclusions

Harvesting consumer heterogeneity in tourism is important, especially given the increasingly competitive market tourism destinations and businesses are facing. Heterogeneity can only be harvested effectively if it is well-understood. Market segmentation is a powerful tool for understanding consumer heterogeneity, but any segmentation strategy is only as good as the segmentation analysis that informs its development. Segmentation analysis is simple, but not trivial. Data analysts and clients therefore have to be aware of the impact of a number of decisions which are made in the course of a segmentation analysis to not only ensure that the best decisions are made at each step of analysis, but also to keep the analysis transparent and be able to understand why certain market segments emerged.

Dolnicar and Lazarevski (2009), in a survey of 167 marketing managers, found that 68% agree with the following statement: 'When a data-driven segmentation solution is presented to me, I sometimes feel that it is like a black box: Data goes in and a segmentation solution comes out at the other end, but it is not entirely clear what is happening in between'. This is not a satisfactory situation. Therefore, data analysts need to openly report how the segmentation analysis was conducted, whether naturally occurring segments were revealed or segments were artificially constructed form a data set with little structure. And clients need to understand enough about market

segmentation analysis to be able to question what they are purchasing and what they are basing long-term strategic decisions on.

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About the Author

Sara Dolnicar (sarad@uow.edu.au) (Professor of Marketing at the University of Wollongong in Australia) obtained her PhD from the Vienna University of Economics and Business in 1996. She studied segmentation methodology while completing her PhD thesis and has continued to do so. With colleagues Leisch and Grün, she has uncovered systematic flaws in the way data-driven segmentation studies have been conducted in the past, both at the methodological and conceptual level, and she has explored the usefulness of novel segmentation algorithms (e.g., neural networks, bagged clustering, biclustering). Sara was also part of the research team (led by Josef Mazanec) that invented perceptions-based market segmentation, a non-parametric simultaneous analysis of segmentation, positioning and competition.

Chapter 5

TOURISM DEMAND IN SINGAPORE: ESTIMATING NEIGHBOURHOOD EFFECTS

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Abstract: By using an error correction model, this study seeks to examine how tourism demand in Singapore depends on the ASEAN region (particularly Malaysia, Indonesia, and Thailand) besides other traditional factors such as income and prices. Although regional cooperation in trade has been widely researched, regional cooperation in tourism demand has not received much attention from tourism experts and this chapter therefore, breaks new ground by estimating the influence of 'neighbourhood effects' on tourism demand. Based on empirical results, this study suggests some policies for future development of Singapore's tourist industry.

Keywords: ASEAN region; elasticity of tourism demand; error correction model; neighbourhood effects; Singapore.

5.1. Introduction

Singapore is a small city-state with a total population of only five million (resident population is 3.7 million only) and a land size of merely 710 square kilometres in 2009 (Department of Statistics, 2010). Since her independence, tourist arrivals have climbed at a phenomenal rate from a meagre 98,500 in 1965 to a staggering 9.7 million in 2009. In fact, the tourist arrivals passed 10 million in 2007 and then growth slowed down slightly due to global economic crisis in 2008–2009. The earnings from tourism also experienced a large increase during the same period, rising from S$88 million in 1965 to S$12.8 billion in 2009, falling from a record S$14.1 billion in 2007 (*Annual Report on Tourism Statistics 2009*). Although it is difficult to make year-to-year comparisons of tourism receipts due to data gaps, the available evidence shows that Singapore's tourism revenue grew from about 5% of the country's GDP in 1970 to more than 12% of GDP in 1980s. The contribution of tourism earnings to the GDP gets magnified when the multiplier effects are taken into consideration and several studies (e.g., Khan *et al.*,

1991; Khan *et al.*, 1995) have already been undertaken to capture the chain effects of tourism expenditure on the various sectors of Singapore economy. While these studies suggest that the tourism multipliers in Singapore are highly significant, they also reveal that the 'net foreign exchange' earned by tourism is substantially lowered by high 'import leakage' caused mainly by the factors related to the smallness of the economy.

The massive explosion of tourism in Singapore was caused by her spectacular economic success. On an average, the economy has grown by roughly 9% annually since independence and has consistently maintained an upward trend with only a few exceptions. The sustained economic growth and gradual appreciation of Singapore dollar have resulted in Singapore having the highest per capita income among the developing countries. Modern Singapore is an economic powerhouse and according to *World Development Report 2010* (World Bank, 2010), her real per capita GNI currently is $47,940 (in purchasing-power-parity or PPP terms) which far exceeds those of many developed countries. Although Singapore has very few natural attractions and recreational resorts, she has an international reputation for safety and cleanliness. Despite rapid industrialisation and urban renewal programs over the years, the city-state has successfully maintained a number of public parks and open spaces decorated with ornamental plants and magnificent greenery (Singapore is often regarded as the 'garden city' of Asia). Other factors that promoted tourism in Singapore include its excellent infrastructure (Singapore has the world's best airport and busiest seaport), strategic location, and political stability. Located at the confluence of three major Asian cultures (Chinese, Malay, and Indian), Singapore is a gourmet's delight, and with an open economy, it is also a shopper's paradise. Thus it is regarded by many as the 'Jewel of the East', attracting tourists from all over the world.

Singapore adopted a liberal 'tourism policy' right from the beginning consistent with its open economy policy (see Khan, 1998 for details on Singapore's tourism policy). Tourists from all over the world were welcomed into the Republic and there were hardly any visa or foreign currency restrictions. Strict laws were enforced to ensure safety for the visitors. To keep the environment clean, tough pollution control measures were introduced. To increase the growth of air travel, liberal aviation policies were implemented with little or no restrictions on the landing rights of scheduled airlines and on the operation of charter flights. Singapore Tourism Board (STB), earlier called Singapore Tourist Promotion Board (STPB), was created in 1964 as the national tourism organisation entrusted with the responsibility of developing the country's tourist industry.

Tourists in Singapore are predominantly drawn from Asia (about 70%) and the ASEAN (particularly Singapore's nearest neighbours like Malaysia, Indonesia, and Thailand) represents the top tourist market. It has been supplying more than 30% of total visitors to the Republic. China has become a very important market in recent years and from amongst the developed countries, Australia, Japan, the UK, and the USA have always remained quite prominent. From South Asia, India has traditionally played an important role and it is often considered a high 'value added' market as Indian tourists spend the highest amounts in per capita terms. The top 10 markets in 2009 visitor arrivals included Indonesia, China, Australia, Malaysia, India, Japan, the UK, Philippines, the USA, and Thailand. The average length of stay for a tourist in Singapore is fairly low by Asian standards and it presently hovers around four days.

While the role of major markets in generating tourism demand in Singapore remains paramount, the nearest neighbours can perhaps play a special role in this regard by generating additional demand as 'proximity' is often considered an added incentive for travel. For example, an American tourist coming to Malaysia or Thailand may find it worthwhile to visit some other neighbouring countries such as Singapore, Indonesia or Vietnam as the marginal cost of such additional trips is fairly low. While physical or geographical distances along with other social, cultural, and economic factors are being considered important for business locations or expansions (Ghemawat, 2001), the importance of proximity in tourism demand has not yet been studied. We intend to capture this factor in our demand estimation for Singapore and based on the results, we suggest policies for tourism planning. As Singapore aims to be a 'Tourism Capital' in the 21st century by adopting its 'Tourism Unlimited' strategy (See STB (1996) for details on Singapore's long-term tourism plan called *Tourism 21*) of creating additional tourism space through regional cooperation, it is important to examine the complementary relationships (if any) between various countries in the region that it intends to cooperate with. Section 5.2 uses error correction model (ECM) to estimate tourism demand, and Sec. 5.3 provides an analysis of empirical results and finally, conclusions are stated in Sec. 5.4.

5.2. Estimating Tourism Demand

Demand for tourism can be measured in at least three ways:

1. Number of visitor arrivals (V);
2. Total number of visitor days ($= V \times D$, where D is the average length of stay in days per visitor);

3. Total visitor expenditure ($= V \times D \times E$, where E is the average expenditure per day per visitor).

Since arrival statistics are relatively easy to obtain, the first one is most commonly used in estimating demand. It is, however, the least satisfactory indicator of tourism demand, which is particularly true for a country such as Singapore. Singapore, being the gateway to Southeast Asia, receives a large number of visitors just passing through the Republic. A massive increase in V due to such a huge volume of transit traffic does not necessarily reflect an increase in the demand for tourism in Singapore. The second measure takes into account how much time a visitor spends in a destination. This is a much better indicator demand for tourism than the first one. The third one is perhaps the most useful measure of tourism demand. Often it is not used in econometric estimation either because of a lack of data or the poor quality of the available data. For regression models using annual data, we consider all three forms; while for models using quarterly data, we will only present demand models for visitor arrivals due to lack of data availability.

The general form of the model that we adopt is a log-linear function given by

$$\begin{aligned}\ln D_t^i = {} & \beta_0 + \beta_1 \ln Y_t^i + \beta_2 \ln(e_t^{iS} P_t^S) \\ & + \beta_3 \ln(e_t^{iC} P_t^C) + \beta_4 \ln P_t^i + \alpha' Z_t + u_t, \end{aligned} \tag{5.1}$$

where t is the time subscript, D^i represents the demand for tourism in Singapore by the visitors from country i (referred to as the origin), Y^i is the nominal disposable income of the origin, $e^{iS}P^S$ is the total tour cost of visiting Singapore expressed in the origin's currency (e is the exchange rate), $e^{iC}P^C$ is the total tour cost of visiting a substitute (competing) destination expressed in the origin's currency, P^i is the total tour cost of visiting places within the origin (home country), and $Z' = (Z_1, \ldots, Z_k)$ is a vector of other relevant variables. Model (5.1) corresponds to a standard demand function for any commodity. The price variables capture the effects of own price and prices of substitutes.[1] In line with a normal good the expected signs are $\beta_1 > 0$, $\beta_2 < 0$, $\beta_3 > 0$, and $\beta_4 > 0$.

By imposing the homogeneity condition ($\beta_1 + \beta_2 + \beta_3 + \beta_4 = 0$) that an equi-proportionate increase in all prices and income leaves demand

[1] An underlying assumption of (5.1) is that own price is exogenously given. This amounts to assuming that the supply curve is infinitely price elastic, or perhaps a flipped L curve. If this assumption is not valid, (5.1) has to be estimated using an instrumental variable technique.

unchanged, we can reformulate the model as

$$\ln D_t^i = \beta_0 + \beta_1 \ln(Y_t^i/P_t^i) + \beta_2 \ln(e_t^{iS} P_t^S/P_t^i) + \beta_3 \ln(e_t^{iC} P_t^C/P_t^i) + \alpha' Z_t + u_t. \quad (5.2)$$

One of the variables that may appear in the Z vector is the log of population size of the originating country. To avoid a severe multicollinearity problem (in particular between income and population size), many researchers impose a restrictive assumption that the demand elasticity with respect to population size is unity and express D^i as per capita demand (see Witt and Witt, 1992). Although visitor arrivals may depend on the population size of the origin, the actual elasticity may vary widely. Well-developed tourist markets may receive more than a proportionate increase in population size and under-developed tourist markets may receive less. Furthermore, to correspond to the per capita specification of demand, the income variable is also expressed in per capita terms. This is not a satisfactory specification of the model.[2] If sufficiently long data series are available, we advocate retaining population size as a separate variable in (5.2). After some trial runs, we decided to drop population from our exercise.

The price variables should reflect the cost of travelling or touring in a given destination. The tour cost index should be a properly weighted index of travel cost from the origin to the destination, ground transportation cost, accommodation cost (hotel room rates), cost of food at restaurants, retail prices, and fees charged for main tourist attractions. Unfortunately, the data needed to construct such price indexes are very scanty. We, therefore, use CPI as a proxy for all price variables. This is obviously a poor proxy. It captures only a portion of the cost of living at a destination.

The price variable P^C captures the cost of travelling in alternative/substitute destinations. For this Witt and Witt (1992), among others, use a weighted average of price indexes of a selected number of most popular destinations among visitors of origin i. The weights are the proportions of outbound tourists to these destinations. For reasons that would be clear later, we propose to compute the price index for substitute destinations based on a geometric average of prices expressed in the origin's currency:

$$\prod_{j=1}^{k} (e_j P_j)^{w_j} = \left(\prod_{j=1}^{k} e_j^{w_j} \right) \left(\prod_{j=1}^{k} P_j^{w_j} \right) = e^{iC} P^C, \quad (5.3)$$

[2]It is not difficult to verify that expressing both demand and income in per-capita terms does not remove population variable from Eq. (5.2).

where w_j are the weights and e_j is the exchange rate between origin and jth destination and P_j is the price of the jth destination. The geometric average allows us to write the combined exchange rate and combined price in terms of their product.

In our case, since we do not have travel cost data, the selection of substitute/alternative destinations is a tricky one. To partially remove the effect of travel cost, we have to select popular substitute destinations with travel costs similar to that for Singapore from the origin. We observe that a poor choice will affect the model estimates critically. After some trial runs, we selected Thailand as a substitute destination for visitors from Europe, Japan, and the USA. Thailand is also the most popular travel destination in Southeast Asia. For ASEAN4 visitors, the substitute destinations (with weights in parentheses) are Hong Kong (0.37), China (0.35), Australia (0.15), and South Korea (0.13). The weights are based on 1995 outbound visitors (PATA, 1999).

It is often argued that exchange rate is a very important cost factor for tourists (Witt and Witt, 1992). To account for this one may include exchange rate as a separate explanatory variable in addition to expressing all prices in the origin's currency. One problem with this is that it does not separate the price effects from the exchange rate effects. In other words, the meaning of the coefficient of the exchange rate is not clear. Model (5.2) can be manipulated, however, to separate out price effects from the exchange rate effects.[3] This leads to

$$\ln D_t^i = \beta_0 + \beta_1 \ln(Y_t^i/P_t^i) + \beta_2 \ln(P_t^S/P_t^i) + \beta_3 \ln(P_t^C/P_t^i) + \beta_2^* \ln e_t^{iS} + \beta_3^* \ln e^{iC} + \alpha' Z_t + u_t. \quad (5.4)$$

Although (5.4) is our preferred specification for estimation, we have to use (5.2) because of severe multicollinearity problems that plague our short data series.[4] Some trial runs with (5.2), without the Z vector, showed us that there was a clear omitted variable bias in the regression, as the price variables were badly estimated. One important omitted variable would be the visitors to the neighbouring countries, Indonesia, Malaysia, and Thailand (ASEAN3). As we mentioned before, Singapore may not be the final destination for some tourists. After adding this variable and a lagged dependent

[3]In this formulation, prices can still be expressed in a single currency at constant exchange rates chosen from a base year. This, however, does not affect the slope coefficients because of the log formulation.

[4]To overcome the collinearity problem, one may opt for a different specification that involves relative price (P^S/P^C) and relative exchange rate (e^{iS}/e^{iC}). This simplification results from the assumption that $\beta_2 + \beta_3 = 0$.

variable[5] to model (5.2), we write our final specification as an error correction formulation:

$$\Delta d_t^i = \beta_0 + \beta_1 \Delta y_t^i + \beta_2 \Delta p_t^S + \beta_3 \Delta p_t^C + \beta_4 \Delta v_t^n + \gamma EC_{t-1} + e_t, \qquad (5.5)$$

where the lower case letters indicate the logarithm of the variables, y is real GDP, p^S is Singapore CPI in the origin's currency relative to the CPI of the origin, p^C is the CPI of substitute destinations expressed in the origin's currency relative to the CPI of the origin, v^n is visitors to ASEAN3 and EC is the error correction term derived from a first stage OLS residuals of a static regression. The error correction formulation (5.5) is preferable to a level regression because it cuts down multicollinearity substantially. After estimating (5.5), the long-run elasticities can easily be recovered by dividing the β's by γ. Note that if $\gamma = -1$, the lagged dependent variable does not enter the level regression and if $\gamma = 0$ the regression is only in first differences.

The ECM is an approach often used in demand modelling in the field of tourism, first used in economics by Sargan (1964). Using the ECM has a few advantages. For instance, it is a good testing-down procedure of the general to specific approach, as any order of distributed lag model can be reparameterised into an ECM. Also, the use of difference and level variables will allow distinctions to be made between short-run disequilibrium and long-run equilibrium. In addition, the use of differenced variables avoids the problem of spurious correlation that may arise from regressions between variables that are non-stationary in their level forms. Lastly, the multicollinearity problem is likely to be less than in an equivalent model containing lags of the variables in levels.

For tourism demand modelling, as elaborated by Song *et al.* (2003), the main motivation for using the ECM is based on the assumption that tourists make rational decisions on the demand for tourism at time t using all the information available (income, price, substitute prices, etc.) in the long run, but make occasional decision errors in purchasing tourism products in the short run due to information asymmetry. As a result of the decision errors made by tourists, the demand for tourism in the short run deviates from its long-run equilibrium path (or steady state). This means that in equilibrium there is no under- or over-demand for tourism if the influencing factors of tourism demand are given.

[5]The lagged dependent variable is added primarily to account for serial correlation. Popularity of a destination tends to have a carry over effect and may cause the lagged dependence.

This deviation is not sustainable over time because tourists, as rational agents, learn from their mistakes and remove their decision errors in order to achieve the long-run equilibrium demand. Therefore, the demand for tourism as a dynamic process is self-correcting. Engle and Granger (1987) termed this self-correction process an 'error correction mechanism', and demonstrated that the process may be modelled using the ECM.

It has been shown by Wickens and Breusch (1988) that although the estimates of the short-run ECM of the Engle–Granger two-stage approach are consistent and efficient in large samples, they are biased in small samples. As the first portion of our regression models uses annual data, indeed, our sample series is considered small. Nevertheless, an alternative estimation method which will overcome this problem has also been suggested by Wickens and Breusch, and that involves estimating both the long-run and short-run parameters in a single step using OLS. The estimation is based on:

$$\Delta y_t = \alpha + \sum_{i=0}^{p-1} \beta_i \Delta x_{t-i} + \sum_{i=0}^{p-1} \phi_i \Delta y_{t-i} + \lambda_1 y_{t-1} + \lambda_2 x_{t-1} + \mu_t. \tag{5.6}$$

The lag lengths of the differenced variables are determined by the statistical significance of the estimated coefficients. After estimating (5.6), the long-run cointegration parameters may be derived from:

$$y_t = -\frac{\hat{\alpha}}{\hat{\lambda}_1} - \frac{\hat{\lambda}_2}{\hat{\lambda}_1} x_t, \tag{5.7}$$

or

$$y_t = k_0^* + k_1^* x_t, \tag{5.8}$$

where

$$k_0^* = -\frac{\hat{\alpha}}{\hat{\lambda}_1} \quad \text{and} \quad k_1^* = -\frac{\hat{\lambda}_2}{\hat{\lambda}_1}.$$

Wickens and Breusch (1988) show that the OLS estimates of both the long-run and short-run parameters in Eq. (5.6) are consistent, efficient and unbiased.

5.3. Empirical Findings and Discussion

5.3.1. *Annual frequency models*

Although our original intention was to estimate (5.5) for the top 20 countries that supply more than 90% of visitors to Singapore, we realised that such an exercise would be a waste of time without compiling a good quality data set.

We, therefore, restrict the estimation to a few illustrative cases. Nevertheless, using quarterly frequency data for visitor arrivals, we managed to estimate country-level models for several countries.

For our annual frequency models, visitor arrivals by country of origin are available over the period 1978–1999. Data on average length of stay and average expenditure by country are available only from 1985 to 1998. To avoid the distortionary effect of the 'Asian crisis' on elasticity estimates, we use data only up to 1997. In our regressions, expenditure is expressed in real terms in home currency, i.e., $E^i = e^i \cdot E^{S\$,i}/P^i$.

For group equations, ASEAN4 and Europe, we express all variables in US dollars. Real GDP is converted at constant exchange rates from 1995. The group GDP is a (geometric) weighted average with weights representing proportion of visitors to Singapore from each member in the group. Group CPI is computed similarly. For ASEAN visitors only the total is available. ASEAN4 accounts for more than 95% of ASEAN visitors and we treat ASEAN as ASEAN4. Similarly for the Europe total we use Europe6 (the UK, Germany, France, Netherlands, Switzerland, and Italy) that accounts for more than 75% of Europe total.

The elasticity estimates based on the ECM (5.5) are given in Table 5.1 for Europe, Japan, the USA and ASEAN that account for about 65% of visitor arrivals to Singapore. Model (5.5) fits Europe and Japan data much better than the US and ASEAN data. The only reliable estimates from the latter two are the income elasticities. The US expenditure equation is not reported in the table because of its poor fit. The overall goodness of fit (measured by R^2) is impressive for a model in first differences. The following are the key findings of this exercise[6]:

1. Income elasticity associated with days and expenditure is in general much larger than that of Visitors.[7] Studies that use visitor arrivals as a measure of demand miss this key point. Income elasticity with respect to expenditure is the largest. In general, length of stay and expenditure are highly income elastic. This means that policy programs that lure rich visitors will really pay off. This is so provided that the import leakage

[6]We ignore the error correction term in our discussion since it captures the effect of the lagged dependent variable in our model. In most cases reported in Table 5.1, however, we can constrain this coefficient to unity, which indicates the absence of a lagged effect.

[7]The t-statistics of income elasticities are low because the income variable is highly correlated with Visitors to ASEAN3.

Table 5.1. Elasticity estimates for tourism demand in Singapore (annual data).

	Real income	Living cost in S'pore	Living cost at substitute destination	Visitors to ASEAN3	Error correction term	R^2	DW
Europe (15%)							
Visitors	1.13 (1.01)	−0.63 (1.85)	0.48 (1.57)	0.69 (2.88)	−0.80 (2.86)	0.64	1.6
Days	5.28 (1.75)	−2.47 (2.82)	3.45 (3.37)	0.51 (1.08)	−1.09 (1.72)	0.82	1.9
Expenditure	6.17 (1.60)	−1.69 (1.66)	2.63 (2.13)	1.64 (2.78)	−0.41 (1.01)	0.83	2.2
Japan (14%)							
Visitors	1.90 (1.66)	0.12 (0.83)	0.54 (1.96)	0.36 (2.20)	−0.74 (3.30)	0.69	1.4
Days	2.77 (1.49)	−0.12 (0.49)	1.34 (2.45)	0.52 (1.77)	−0.10 (0.27)	0.84	2.0
Expenditure	4.14 (1.59)	0.44 (1.29)	1.50 (2.09)	1.36 (3.39)	−1.04 (1.63)	0.87	2.3
USA (5%)							
Visitors	1.27 (2.26)	0.13 (0.69)	0.22 (1.30)	0.22 (2.48)	−0.98 (3.57)	0.74	1.7
Days	2.52 (1.20)	0.67 (1.29)	0.84 (1.45)	0.17 (0.69)	1.29 (5.87)	0.89	2.3
ASEAN (30%)							
Visitors	1.68 (2.42)	0.43 (2.25)	0.10 (0.56)	—	−1.12 (3.56)	0.64	1.2
Days	5.10 (1.92)	0.18 (0.33)	−2.09 (3.84)	—	−1.54 (4.59)	0.85	1.9
Expenditure	5.44 (1.12)	2.26 (2.27)	−0.33 (0.34)	—	−1.25 (3.80)	0.76	2.1

Notes: The numbers in parentheses against country headings show the proportion of visitor arrivals to Singapore from each origin. The other numbers in parentheses are absolute t ratios. Sample size for visitors is 20 and that for days and expenditure is 13.

from expenditure by high income earners is not very high compared to that of low income earners. This has, for example, been pointed out by Tisdell (1993) in Chapter 11 on 'Foreign tourism: Benefits to China and its contribution to development'.

2. The second most important factor, particularly relevant for visitors from distant origins, is what we call 'neighbourhood effect' measured by Visitors to ASEAN3 (Indonesia, Malaysia, and Thailand). This has a highly significant effect on visitor arrivals and expenditure. It does not affect days much. A 1% increase in visitors from Europe to ASEAN3 will increase visitors to Singapore by about 0.7%. In other words, out of 10 visitors to ASEAN3 from Europe, 7 visit Singapore too. This number is lower for Japan and US but still highly significant. The impact of these visitors on expenditure is quite large. In the case of Europe, the income effect brings about a 6% increase in expenditure and the neighbourhood effect brings another 1.6% increase. These results highlight the complementary nature of the tourism industry within the ASEAN4 (Singapore included) region and the importance of cooperation in tourism development strategies.
3. Only Europe and Japan equations provide reasonable price elasticities. The 'own' and 'cross' price elasticities show that the visitors are more sensitive to the prices at the substitute destinations (represented by Thailand). The positive cross price elasticity indicates that an increase in prices at substitute destinations will increase the demand for tourism in Singapore. In practice, however, this seems to work the other way round. Singapore is the most expensive tourist destination in Southeast Asia and Singapore prices have gone up relative to ASEAN3 primarily due to the appreciation of the Singapore dollar (Abeysinghe and Lee, 1998). Visitors, therefore, cut short their stay in Singapore and move to less expensive tourist destinations in the region. On the price front, therefore, Singapore and ASEAN3 are competitors.
4. In a number of trial runs we tried to separate out the exchange rate effect from the price effect. Although the estimates were very sensitive to the collinearity problem, they clearly indicate that the appreciating Singapore dollar dampened visitor expenditure.

5.3.2. *Quarterly frequency models*

For our quarterly frequency models, visitor arrivals by country of origin are available over the period 1980Q1 to 2009Q4. However, data for p^C (our substitute price index) and v^n (visitors to ASEAN3) is only available

Table 5.2. Elasticity estimates for tourism demand in Singapore (quarterly data).

	Real income	Living cost in S'pore	Living cost at substitute destination	Visitors to ASEAN3	R^2	DW
Australia	1.89 (6.49)	−0.06 (−0.3)	−0.14 (−1.02)	−0.12 (−0.66)	0.95	1.65
China	1.67 (4.96)	−0.19 (−0.65)	0 (−0.01)	−1.09 (−2.56)	0.88	1.65
Hong Kong	0.21 (3.18)	0.69 (3.61)	−0.11 (−2.4)	−0.46 (−2.39)	0.95	1.87
Japan	11.93 (3.77)	−2.53 (−1)	−5.65 (−2.86)	−0.23 (−0.1)	0.62	2.27
United States of America	1.66 (5.6)	0.63 (2.84)	−0.47 (−2.67)	0.57 (3.54)	0.96	1.70
United Kingdom	7.83 (1.82)	0.71 (0.49)	−3.55 (−2)	−3.31 (−1.76)	0.98	1.99
South Korea	1.8 (3.21)	−4.02 (−8.26)	−1.5 (−3.76)	−1.1 (−1.65)	0.98	1.73

from 1993Q1 to 2007Q4. Dummy variables were used to model the negative impact of the Asian crisis and the SARS crisis. The elasticity estimates based on the ECM (5.5) are provided in Table 5.2 and the main findings are as follows:

1. In terms of income elasticities, with the exception of Hong Kong, tourism demand from all of the other countries appears to be income elastic, with the most income elastic visitors coming from Japan. This is similar to the findings with our annual frequency models. However, it is interesting to note that once the data is at a quarterly frequency, the income elasticity for tourism demand from Japan jumped much higher than that reported in the annual frequency model.
2. With regards to the 'neighbourhood effect', the results were different from those with annual data and we could not get much support for the thesis that increase in arrivals to ASEAN3 will also increase visitor arrivals to Singapore. The neighbourhood effect was positive only for visitors from the USA and its impact was close to that seen earlier in the annual frequency model. The relevant coefficient was is 0.57 meaning that a 1% increase in visitors from the USA to ASEAN3 will increase visitors to Singapore by about 0.57%.
3. In terms of 'own' price elasticities, a negative sign is usually expected. However, we can see that this is true only for countries like Australia, China, Japan, and South Korea. Although small, the 'own' price elasticities for Hong Kong, the USA, and the UK were reported to be positive, contrary to popular belief.

4. As for 'cross' price elasticities, the signs for all countries turned out to be negative. This means that if the living cost at substitute destinations became higher, visitor arrivals to Singapore will decline. Intuitively, this should be the opposite as higher prices at substitute destinations will prompt visitors from origin countries to think twice about going there and therefore giving a higher chance of visiting Singapore instead. Anyway, these results are extremely sensitive to the selection of an appropriate substitute destination and relevant travel cost data that remains a formidable challenge.

5.4. Conclusion

Though empirical results tend to vary across the types of data used, it is clear that both length of stay and average tourist expenditure are highly income elastic in the context of Singapore's tourism demand. It, therefore, implies that Singapore should try to lure visitors from those countries that add more value to the industry. This also makes sense from the viewpoint that Singapore tourist industry has already 'matured' and the earlier emphasis on mass tourism does not apply any more. The central focus of the tourism policy should be shifted to increasing the generation of more tourism-related businesses (which are relatively higher value-added in nature) rather than increasing the number of tourists. Such tourism related businesses might, for example, focus on health and wellness tourism, education tourism, conferences and exhibition, tourism planning and resort development and travel and hospitality consulting. It must be emphasised that the tourism industry, if expanded in this direction, can be an important vehicle for economic growth. It is also important to mention that the prices of various tourist products and services should be made sufficiently attractive so as to maintain Singapore's competitiveness *vis-à-vis* other alternative destinations (such as Malaysia or Thailand).

The long-term vision of making Singapore the 'Tourism Capital' through tourism unlimited strategy is quite sensible but careful calculations should be made in making any decision on joint investments in tourism. It cannot always be assumed that a regional tourist will automatically visit Singapore (via the neighbourhood effect) unless efforts are being made to enhance the attractiveness of Singapore as a prime tourist destination. It is necessary to continuously upgrade the existing tourism products and offer new ones so that the tourists keep coming back to the Republic again and again, stay longer, and spend more. In adding new attractions, the recreational needs of both foreigners and locals should be considered equally as done in developing the two 'Integrated Resorts (IR)' recently.

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Chapter 6

DEMAND AND COST CONSEQUENCES OF VIOLENCE AFFECTING DOMESTIC TOURISM: AN INDIAN CASE STUDY

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Abstract: Increased political violence among the deprived sections of the society, particularly the forest-dwelling tribes is emerging as a major internal security threat in India. Widening disparities in income and opportunity, both real and perceived, between agriculture and the non-agricultural sectors and between rural and urban areas is the root cause of this tension. A pseudo-civil war in 165 districts (about one-third of the total geographical area of India) is not only diluting the exceptionally rapid growth of the Indian economy but is also destroying the growth of domestic tourism by reducing inter-state movement of prospective visitors. Therefore, the main aim of this contribution is to assess the demands and cost consequences of violence affecting tourists in India. During the past three years, India emerged as a travel rich nation by doubling the number of domestic visits. The number of domestic visits in 2009 was estimated to be 659 million. The regional tourist offices of India also estimated an average 80% fall of tourist visits to disturbed places. The corresponding loss in tourist expenditure may add up to Rs 98.6 billion a year and after taking account of the tourist multiplier effect (using a multiplier value of 2.5), will add up to Rs 2.46 trillion per year.

Keywords: Civil unrest; gravitational attraction; maoist rebels; passenger mobility index; tourist magnetic site.

6.1. Introduction

In little over a decade, India has become a significant emerging economy. Its economy is growing at over 8% a year, making it the fastest growing free market democracy globally. Indian industry is expanding at a double digit rate of growth. The service sector continues to lead the overall growth surge. It is tourism, however, which has recorded the highest levels of growth — more than 15% per annum over the three years prior to 2011.

It is now recognised that India's economic growth has to be employment driven and blended with social equity. Tourism has the capacity to capitalise on the country's success in its service sector and provide sustainable economic growth over a long period. It can stimulate most economic sectors through forward linkages and cross-sectoral synergies with multiplier effects. A recent study by Indian Council for Applied Economic Research reveals that tourism's contribution to GDP (both direct and indirect) is 5.9%, and to employment (both direct and indirect) 8.73%.

In spite of all these possibilities, India's efforts to attract foreign tourists have been consistently unsuccessful. Both Malaysia and China entered the international tourism market decades after India did. In 2009, Malaysia ranked globally ninth with 23.6 million foreign arrivals. In the same year, China was fourth with 50.9 million visitors. India did not appear in the first 10 having just 5.1 million foreign tourists. Nevertheless, the 2,448 member Travel Agents Association of India (TAAI) forecasts Indian tourism will soar by 20% per annum during the 2020s.

The reason for TAAI's rosy forecasting can be found in the number of outbound Indian tourists. In 2009, the number of Indians going to foreign destinations was double the number of its inbound visitors. In that year, 11.07 million Indians went to destinations outside India. This reflects the growing affluence of a booming consumer society that has emerged on the heels of India's economic reforms.

In recent times, the value systems of Indians and their attitudes towards enjoyment of leisure have changed considerably as their standard of living has risen. This change is most pronounced among the urban middle class. The middle class population of India is larger in size than the combined population of the United States and Canada or the total population of Europe. Many millions of Indians have never had it so good. After the two-wheeler boom of the nineties, four-wheelers are now clogging the road. A new generation of tourists have thus emerged very fast.

The changing scenario of tourism culture is also visible on the domestic front. According to the authoritative trade publication, *Trav Biz Monitor*, the Indian States and Union Territories reported that more than 650 million domestic tourists had visited them in 2009. However, in recent years, growing political tension in a large part of the country has appeared and this is posing severe threats to the domestic movements of the tourists. Jammu and Kashmir has experienced a long record of terror-torn tourism, but now it is relatively peaceful there and domestic tourists have started thronging back their Paradise on Earth, Kashmir.

However, innumerable tourist magnetic sites in many other states of India, mostly its mine-rich eastern and central states, are getting *not to visit* status for tourists due to the presence of political violence and thereby, this brings disaster to these regional economies. While a growing section of the population is increasingly willing to escape anywhere to be in natural surroundings, the political situation prevents them from doing so. The most disturbed states currently are: Orissa, Chhattisgarh, Jharkhand, Bihar and West Bengal. The region covers about one-fifth of the geographical area of India and about one-fourth of the country's population.

Given this background, the aim here is to examine the demand and cost consequences of violence that affect domestic tourists in India. The plan of the chapter is as follows: In the next section, a brief review on the literature is presented. This is followed by a review of domestic tourism in India in the context of present world situation. Attention is given to the lopsided economic growth of India and its impact on domestic tourism, followed by the conclusion.

6.2. Review of Relevant Literature

The existence of social and political stability and the absence of any kind of civil unrest are important prerequisites for successful tourist trading. Terrorist incidents receiving media coverage have an almost immediate effect on the prospective tourists, while it takes a long time to convince people about restoration of peace in an erstwhile-disturbed spot. This effect, therefore, is asymmetric in its consequences for tourist visits.

Eric (2004) made a general quantitative test of the impact of various forms of political violence on tourist arrivals and employed two estimation techniques: a fixed-effects panel estimator with contemporaneous effects only and a dynamic generalised method of moments estimator for lagged effect of political violence on tourism. In both, a negative impact was found on tourist arrivals. While Eric divided the phenomena between fixed-effects (panel estimator) and contemporaneous effects, Parsons (1996) suggested three types of crises depending on their gestation period: (1) an immediate crisis, (2) an emerging crisis and (3) a sustained crisis. Similar to Parson's classification is that of Seymour and Moore (2000), who suggested that crises are of two types: a 'cobra' type, which strikes suddenly, and the 'python' type, which occurs gradually.

It has been observed that when some set of events dissuades tourists from visiting a particular destination, some other destination will most likely benefit. For example, Bali's market share increased for a time at the cost of Fiji

following disturbances in Fiji (McDonnell, 1996). Sri Lanka lost almost 10% of its international tourist arrivals between 1983 and 1989 due to terrorism in Sri Lanka, while the Maldives and India benefited at the cost of Sri Lanka (Gamage *et al.*, 1997). A similar consequence often happens within a large country. For example, the neighbouring state Himachal Pradesh benefited from increased tourism because of terrorism in Kashmir (Chattopadhyay, 1998). Therefore, we can say that a geographical substitution effect in relation to terrorism and tourism often occurs.

On many occasions, tourists become incidental victims of crimes directed against the indigenous population. In November 1997, gunmen opened fire on tourists outside a 3,400 years old temple. In India, pilgrims to Amarnath and Vaishnodevi Caves or temples like Swaminarayana had the same fate.

11 September 2001 can be described as a 'watershed' in world history of terrorism (Zakaria, 2001). The Milkin Institute (Navaro and Spencer, 2001) assessed the immediate costs to the USA, including: (1) the physical damage to US property as being at least US$10 billion; (2) loss of economic output in the US$47 billion and (3) the costs for 'terrorist tax' of up to US$41 billion. The estimated total price tag approaches US$2 trillion.

Tisdell (2005) argued that under the large group monopolistic framework an unexpected large fall in demand in tourism can lead to economic loss because of reduced sales and lower prices. Tisdell (2005) [and see also Tisdell (2012, Ch. 10)] demonstrates by using this theory that industries having high overhead costs (especially if these costs are inescapable) and experiencing relatively low profit margins are highly vulnerable to a sudden collapse in the demand for their output. Most sections of the tourism industry (such as airlines, hotels, other transport services, travel agencies and so on) appear to be in this position. A terrorist strike such as that on the twin towers in New York in September 2001, and the later terrorist bombing of a tourist venue in Bali, Indonesia, triggered a sudden decline in demand for tourist services with disastrous economic consequences for many tourism enterprises. In the former case, the adverse economic impact on the tourism industry was global but especially marked in the United States and in the latter case, the main adverse economic impact was probably on Indonesia itself. When the economic vulnerability of tourism is due to political violence the tourist industry faces the possibility of a catastrophic economic impact. In many prized spots of India, this happened during the last few years.

Much of the available literature focuses on the influence of terrorism on international tourism. Studies have, for example, considered the adverse effect on international tourism of terrorism or war in Jordan, Egypt,

Palestine, Philippines, or USA. But domestic tourism is not adequately considered. Alsarayreh *et al.*'s (2010) study indicates that tourism is a major component of international politics and is also impacted by ideology. Not only international politics, but also national politics can be important. India is an ideal case to demonstrate this.

Domestic tourism is under-researched in India although India's domestic tourist market is remarkably large. Unlike in western nations, national level surveys of domestic tourism are very poor in India. Tata Economic Consultancy Services conducted one such study long back in 1981 (Tata Economic Consultancy Services, 1981). Next, the National Sample Survey Office (NSSO), Government of India carried out an all India household survey on domestic tourism during the period July 2008 to June 2009. Some regional level studies are there like the Indian Institute of Public Opinion's study on Delhi (1978) or ISI's domestic Tourist survey in Orissa State of India in 1983.

As a rough-and-ready measure of the volume of domestic tourism, India's Passenger Mobility Index[1] was calculated in the mid-nineties of the last century (Chattopadhyay, 1995). This measure gave the country a moderate international status with an index number of 20 in 2010 and placed India in a similar position to Malaysia, Algeria, and Brazil.

Some authors are fond of applying sophisticated econometric models to assessing terrorism risk quantitatively (Woo, 1999) or like to apply game theory to analyse probabilistic risk (Hausken, 2002). But the value of these exercises from a practical point of view is unclear.

6.3. Domestic Tourism in India

For the success of domestic tourism, a country must possess (1) a large population with adequate purchasing power, (2) an ample stock of cultural and natural assets, and (3) a developed infrastructure. India satisfies all these conditions as does China, for example. With a stretch of 3,000 kms of the Himalayas and about 9,000 km of coastline area, India is rich in natural tourist assets. At the same time, this country is also home to the largest number of poor people in the world. While there are three hundred million rich Indians (a figure to be reckoned with), there are around 500 million Indians living on one dollar a day or less.[2] Economic inequality is marked.

[1]This index is an average of five components: miles of surfaced road per capita, the number of passenger cars per capita, miles of rail line per 10,000 populations, surfaced highways per 100 sq. miles and surfaced highways per 10,000 populations.
[2]See Sen (1992) and Sengupta (2007). See also relevant contributions in Tisdell (2007, especially Vols. 1 and 2).

Some factors like religious faith and social customs serve as significant driving forces in generating domestic tourism. It may be noted that the most determined travellers in India are often its poorest people. Millions of people travel thousands of miles a year on pilgrimages in India irrespective of their economic condition. On the supply side, an ingenious concept of spiritual leaders was to establish religious shrines in four corners of the country (namely Badrinath on the north, Rameswaram on the south, Puri on the east and Dwarka on the west). The places are known as holy four *Dhamas* (places). A devout Hindu aspires to visit these *Dhamas* once in his/her lifetime. This generates substantial domestic tourism.

The spatial distribution of tourism is more even in India than in China. On the demand side, 12 coastal regions obtain 90% of China's tourism receipts. On the supply-side, the same coastal region accounts for more than 84% of China's tourist arrivals (Wen and Tisdell, 1996, 2001). In India, international tourists visit north, south and western regions with equal interest. The eastern zone is skipped primarily due to political disturbances.

It has been estimated that India is the 10th among plant-rich countries. Out of the total 12 biodiversity hot spots in the world, India has two: one in the northeast region and the other in the *Western Ghats* of southwestern region (Parikh, 1997). Both these places are located in economically backward zones. Besides, out of 15 UNESCO-declared World Heritage sites in India, four are located in extremely poor locations far from the nearest town. In spite of having the richest stock of flora and fauna, the northeastern states and territories of India seldom get an impressive number of tourists either domestic or international.

In India, the western provinces are more affluent than the eastern provinces. Both in terms of per capita income and the Human Development Index (HDI) the west is much ahead of the east. Both the western, northern (except Jammu and Kashmir) and the southern states have less political disturbances than eastern India. Therefore, in attracting domestic tourists, states belonging to those regions (outside Eastern India) account for about 87% of the total tourist flow. Interestingly while these states saw a steady increase in tourist visits, the poor states' relative catch has declined continually. This has added to the spatial skew of the distribution of the domestic tourist flow. This increasing skew is mainly due to the deteriorating law and order condition in states like Jharkhand, Bihar, Orissa, Chhattisgarh and West Bengal.

During recent years India emerged as a travel-rich nation because of its rapid increase in domestic visits. The number of domestic visits was

estimated to be 382 million in 2006. It was 526 million in 2007, and 659 million in 2009. According to the Ministry of Tourism, Andhra Pradesh accounts for the largest number of domestic tourist visits of any state in India. It received 132.6 million tourist visits in 2009 compared to 127 million in 2007. Respective figures for Uttar Pradesh were 124.8 million and 116 million. Tables 6.1 and 6.2 show the distribution of visits to the various Indian states in 2007 and 2009, respectively.

As per an NSSO survey, in one-year period (July 2008 to June 2009) 418 over-night trips were made per 100 Indian households (on an average four per household). The survey also reported that about 77% of the population of both rural and urban sectors took part in at least one overnight trip during one-year period. Their average duration of travel was three days. Another important observation of the survey is on tourist expenditure. At the all India level, average expenditure per overnight trip was Rs 1,200.00.

Table 6.1. Share of (selected) states of India in the number of domestic tourist visits (2007).

Sl. No.	States	Number of domestic tourist visits (millions)	Percentage of total visits
1	Andhra Pradesh	127.9	23.58
2	Uttar Pradesh	116.2	21.43
3	Tamil Nadu	71.0	13.09
4	Karnataka	37.9	6.97
5	Rajasthan	25.9	4.78
6	Uttarakhand	19.8	3.65
7	Maharashtra	19.2	3.55
8	**West Bengal**	18.6	3.42
9	Madhya Pradesh	13.9	2.56
10	Gujarat	13.5	2.48
11	**Bihar**	8.1	1.49
12	**Orissa**	5.9	1.10
13	**Chhattisgarh**	1.9	0.36
	Total of 1 to 13	480.0	88.46
	Others	62.9	11.54
	Total	542.5[a]	100

Source: Ministry of Tourism, Government of India.
[a]These figures have been rounded to the nearest million and therefore discrepancies may occur in the totals.

Table 6.2. Share of top ten receiving states of India in their number of domestic tourist visits within India (2009).

Sl. No.	States	Number of domestic tourist visits (millions)	Percentage of total visits
1	Andhra Pradesh	175.5	6.9
2	Uttar Pradesh	134.8	20.7
3	Tamil Nadu	115.8	17.8
4	Karnataka	32.7	5.0
5	Rajasthan	25.6	3.9
6	Maharashtra	23.7	3.6
7	Madhya Pradesh	23.1	3.5
8	Uttarakhand	21.9	3.3
9	West Bengal	20.5	3.1
10	Gujarat	15.9	2.4
	Total of 1 to 10	589.5	90.7
	Others	60.5	9.3
	Total	650.0	100.0

Source: Ministry of Tourism, Government of India.

A commonly held view of tourism in India is that the country has never been sold internationally as a desirable recreation destination. This is equally true of domestic tourism. There was a preponderance of social purposes among the factors giving rise to domestic tourism activity. More than 80% of the tourists prefer to stay with friends and relatives. Thus, the commercial character of the whole movement is not established. In spite of having the long span of Himalayas and having other mountains on the Deccan Plateau, trekking is not so popular among young Indians. Similarly, beach fever has yet to catch on.

6.4. Lopsided Growth, Violence and Domestic Tourism

India has two social groups. One is composed of a minority Indians. They are mostly urban, elite, enlightened people of the 21st century and have been gifted massively by the New Economic Policy of India thus making fortunes from liberalisation, stock markets, business contracts and contacts with upper echelons of Indian society. The other group contains the majority Indians. They are impoverished, malnourished, under or non-educated, non-enlightened, downtrodden, oppressed and are an exploited mass of working

people toiling in the fields, jungles, and factories. The crude fact is that 83% area of Jharkhand, 90% area of Orissa and 94% area of Chhattisgarh contain the 150 poorest districts of India (Bhaduri, 2010).

In many tourist spots, poor people are the direct beneficiaries of the economic benefits generated out of by domestic tourism. Naturally, it is these less educated people who bear the brunt of any violence be it political or communal. In India, apart from Jammu and Kashmir, Orissa, Chhattisgarh, Jharkhand, Bihar and West Bengal are its five poorest states and they are the worst victims of political violence. This violence is disastrous for their domestic tourism inflow.

People of the Koraput–Bolangir–Kalahandi (KBK) region of Orissa are among the poorest inhabitants of the world. But the picturesque natural scenery with rolling mountains, meadows, roaring rivers, and gurgling waterfalls on this 3,000 feet and higher plateau is simply captivating to the tourists. The central part of the region forms the highest part of the tableland. The region is famous for its hills, forests and its tribal people. The region is immensely mineral rich too and has several mines.

Jharkhand became the 28th state of the Indian Union in November 2000, when it was carved out of what is known as the Bihar Plateau. The land comprises two separate regions — the Chotonagpur plateau and Santhal Pargana. Jharkhand's economy is sustained by mining and heavy industry. In mining, Jharkhand is one of the front ranking states of the country. It contains some of the country's highly industrial cities like Jamshedpur, Bokaro and Dhanbad. Nonetheless, Jharkhand is called a rich state consisting of poor people. The per capita income of the state lies at the bottom of the league, despite its mineral resources.

The Indian Government claims Jharkhand has the potential to develop as the most financially viable state in the country owing to its wealth of mineral based resources and its available industrial infrastructure. But this is far from being realised. Unfortunately for Jharkhand and its tribal population, much of the state's vast mineral wealth is located under its forests and its population only has an assured adequate food supply for about three to four months in the year. One surprising feature of Jharkhand is that despite this hard economic reality, the alluring charm of the forests is simply irresistible to thousands of nature-loving tourists.

West Bengal is the only state of India that offers access to both the Himalayas and to the sea. Its seaside attractions are located on the Bay of Bengal. Tourist attractions of West Bengal are spatially concentrated. They are located in its littoral districts in the south, the western forest

region and the Himalayas on the north. Darjeeling is a world famous hill station located at an altitude of 7,000 ft. in the Dooars (the foothills of the Darjeeling Himalayas). This is a fascinating tourist destination. The Dooars have dense forests teeming with wildlife, unending tea gardens and babbling rivers. Derived from the word 'doors' (doors to Bhutan), this region also forms a gateway to the hills of North Bengal, Sikkim, Bhutan and North Eastern states of India. Unfortunately, Darjeeling is a festering sore for the West Bengal state government because it has had for a long time a violent separatist movement.

In the period 2004–2011, about 165 districts of these five poor states emerged as part of the so-called Maoist Red Corridor (MRC) in which Maoist rebels are engaged in armed violence. The national government has described this situation as the biggest internal security threat facing India. Maoists emerge and gain support in regions characterised by hunger and anger. The exceptionally rapid growth of Indian economy since the mid-1990s and has attracted much admiring attention and comment. That the Indian economy has moved to a distinctly higher growth path following internal and external liberalisation resulting from economic reform is not in doubt. But the socio-political consequences of the pattern of India's 'development' remain contentious. The decline in the quality of basic education, health care and social protection of the majority of its population, and poor tribals in particular, are matters of serious concern. Widening disparities in income and opportunity, both real and perceived, between India's agricultural and non-agricultural sectors and between rural and urban areas fuel the growing social tension.

All those states in which the Maoist rebels are active have some important tourist spots of both national and international repute. For example, Bodh Gaya of Bihar is one of the most important pilgrimage centres for Buddhists from all over the world. Similarly, the Bastar region of Chhattisgarh with its Chitrokot falls (known as the Niagara of India) is a prized spot for the nature-loving tourists. The state of Orissa boasts a UNESCO World Heritage site, the internationally famous Konark Sun Temple. Darjeeling has also been declared UNESCO World Heritage site because of its railway used by the famous 'Toy Train'.

During recent years, almost all of the tourist sites in the MRC are virtually deserted because interstate and intrastate visits of tourists have declined rapidly. The regional tourist offices estimated an average 80% fall of tourist visit in these places. In some places, the fall is 100%. While tourists have immense purchasing power, the political strife hinders from spending in

the MRC. This is unfortunate because those engaged in tourist trade in these areas are mostly semi-skilled or even unskilled and have little ability to obtain an industrial job.

Using the data provided by NSSO and by regional tourist offices, the total monetary loss due to fall in tourist visits to the MRC can be estimated with the help of following formula:

$$L = E \times A \times N, \tag{6.1}$$

where L is the total loss in Indian Rupees; E, is the average amount spent by a domestic tourist; A, the average length of stay of a tourist and N is the number of tourists no longer visiting these spots.

I estimate that the corresponding loss in tourist expenditure may add up to Rs 98.6 billion a year, and taking account of tourist multiplier effect (using a multiplier value of 2.5) probably adds up to Rs 2.46 trillion.

However, despite the fall in visits to politically disturbed areas in India, the number of domestic visits in India has increased in recent years. Visits to new sites have been substituted for those in troubled regions. Visits to Kulu-Manali have been substituted for those to Jammu and Kashmir and tourists going to Gangtok Pelling rather than Darjeeling. Despite violence in some parts of India, travellers find new places to visit.

6.5. Conclusion

Most successful countries in the tourist trade are peaceful states as measured by Global Peace Index (GPI), for example — Iceland, New Zealand, Japan, and Canada rank globally first, second, third and eighth position respectively on the basis of their GPI. Even Great Britain holds 26th position. On the other hand, India ranks 135 out of 153 countries. 'India is now the 20th least peaceful nation in the world, along with countries such as Pakistan and Afghanistan', says Steeve Killelea, founder of the GPI (see Anon, 2011).

In many countries, there is an insidious perception that domestic tourism is the 'poor cousin' of the more glamorous international tourism market. Yet domestic tourism constitutes the vast majority of tourist flows worldwide, and there has been significant growth in it in developing countries, like India, coinciding with an increase in their population of middle-income earners. India is a country of second longest stay by a foreign traveller after Australia. Thus while a foreign tourist on average stays for 16 days in India, a domestic traveller spends three nights outside his/her home per year. But the huge numbers of India's domestic travellers make domestic travel an 80 billion dollar industry in India.

It is true that the 80% loss of domestic tourists from the politically disturbed regions of India may not be a total loss in to India because these 'lost' tourists are likely to travel elsewhere in India. However, a leakage of 64 billion dollars from the poor of the disturbed region to other trouble free regions is a net loss indeed. Some African countries, which suffer from acute political strife, also lose a large number of foreign visitor as well as hard currency. The longer such troubles continue, the larger is the loss of tourism. Hence, in order to sustain tourism in poor local economies, good governance is essential.

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PART III

THE SUPPLY OF TOURIST SERVICES

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Chapter 7

THE INTERNATIONALISATION PROCESS OF TOURISM FIRMS: THE CASE OF THE HOTEL SECTOR

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Abstract: The development of international activities in the 1970s and 1980s stimulated considerable academic interest and analysis. However, few studies have focused on the internationalisation of the tourism sector. Only recently has tourism started to receive more attention from international business scholars, especially its hotel sector. Although classified as part of the service sector, the hotel sector has distinctive characteristics that differentiate it from other service industries, thereby presenting a challenge and calling for a separate research regarding decisions about the mode of corporate development. This chapter provides theoretical background on the internationalisation of the firm, and reviews the most influential theories, models and paradigms used to analyse the internationalisation of the hotel sector.

Keywords: Hotel sector; internationalisation; service industries; theories of the firm; tourism.

7.1. Introduction

The global economy is being driven by rapid and relatively unrestricted flows of information, ideas, capital, goods, services and people. Tourism is very much part of the globalisation process and has gained from the broad and expanding movement towards international economic liberalisation (Hjalager, 2007). Tourism businesses have the ability to operate globally and many have opted for a competitive strategy of internationalisation (Knowles *et al.*, 2004). Outsourcing and transnational ownership structures and investments have thus become common, involving not only big corporations, but also small- and medium-sized businesses. As an industry, tourism includes various component sectors. The hotel industry is, however, of central importance to the development of travel and tourism. It is complex, fragmented and highly competitive, and over the recent decades has witnessed

unparalleled growth, driven principally by globalisation (Fayall and Garrod, 2005). It is by nature an international sector, and thus is perceived as one of the most 'global' in the service sector (Litteljohn, 1997).

This chapter contains the theoretical background on the internationalisation of the firm. Firstly, a discussion of the internationalisation concept is presented, followed by a review of the most significant contributions to knowledge pertaining internationalisation, which can be sourced to the literature in international economics, international finance and international business. Contributions to the macro-level of analysis are found in the form of theories of international trade, while theories at the micro-level consider both the foreign direct investment (FDI) decision process and the pattern pursued by firms in internationalisation. The motivations that support the decision to invest abroad, namely firm, country, industry and relational determinants are explored, as well as the main barriers, and the main forms of operation. Given that services have a set of particularities when compared with physical goods, internationalisation of service firms present some specificities when compared with manufacturing firms. Those particularities will be discussed, as well as the specificities of the internationalisation of the tourism sector, in particular the hotel sector.

7.2. Theoretical Framework of Internationalisation

The concept of internationalisation has evolved over time, having been object of several attempts to encapsulate it. Welch and Luostarinen, the first authors to formulate a comprehensive analysis of it, regarded internationalisation as 'the process of increasing involvement in international operations' (1988, p. 36). Subsequent reviews assessing and synthesising the general literature about the internationalisation process have however, concluded that efforts to state the internationalisation concept in a definitive manner have been inadequate (Coviello and Munro, 1997). A single, universally accepted definition has remained elusive, with a number of interpretations being found in the literature. Nonetheless, when considering internationalisation as a dynamic concept, Beamish's comprehensive definition can be regarded as appropriate (Coviello and McAuley, 1999; Coviello and Munro, 1997). He defines internationalisation as 'the process by which firms both increase their awareness of the direct and indirect influences of international transactions on their future, and establish and conduct transactions with other countries' (Beamish, 1990, p. 77). This definition integrates aspects of several views into one holistic interpretation of the internationalisation concept (Coviello and McAuley, 1999).

Considerable effort has also been put on the search for a general paradigm of international production, however 'there is no such thing as a once for all explanation of international business' (Dunning, 1990, p. 11). Changes within the boundaries of the firm and in market conditions make necessary constant monitoring and restructuring of the thinking. Doctrines on international economic involvement, until around 1950, mainly consisted of well-developed formal theories of international trade and a complementary, but less well-developed, formal theories of capital movements (Dunning, 1977). In the late 1950s, as a result of the post-war changes in the form and pattern of trade and capital exports, there was a shift of direction in the interests of international economists. In the 1960s, the emergence of international production, as a major form of non-trade involvement, gave rise to new theories and paradigms.

In an attempt to explain international economic activities, the available literature has witnessed several advances in the last three decades. These advances in international economics, trade, finance and business studies have promoted a diversity of knowledge and produced a wide range of theories providing an understanding of cross-national activities, at both macro- and micro-levels of analysis. Each of these different perspectives and theories are pieces of the jigsaw, helping to contribute to the understanding of the internationalisation phenomenon.

7.2.1. *International trade theories*

The history of economic theory and research in the area of FDI is relatively short, having its roots in the writings of classical economics. According to the classical trade theory, the extent to which a country exports and imports, dictates the relationship to its trading pattern with other nations (Morgan and Katsikeas, 1997). Countries are able to gain if each devotes resources to the generation of goods and services in which they have an economic advantage. The most influential theories are the theory of absolute advantage of Adam Smith and the theory of comparative advantage developed by David Ricardo.

The classical theory was, however, unable to offer any explanation of what caused differences in relative advantages. Therefore, new theories began to emerge so as to provide a rationale for the differences in advantage exhibited by trading countries. One of these theories was the factor endowments theory, also known as the Heckscher–Ohlin (HO) model, which was originally formulated by Heckscher (1919), elaborated by Ohlin (1933), and refined by Samuelson (1948, 1949). Other theories based on perfect market

assumptions focus on the differential rates of return (Iversen, 1935), portfolio diversification (Markowitz, 1952) and market size (Agarwal and Ramaswami, 1992; Billington, 1999; Tsai, 1994).

Following the World War II, the new characteristics of the world economy, the significant technological progress, the specific conditions of some industrial sectors and the rise of multinational firms demanded other strategic approaches to the theory of international trade in order to reflect this new reality. Vernon (1966), through his product life cycle theory, was the first scholar to develop a more strategic perspective to understand the internationalisation of business activities, offering a dynamic explanation of the cross-national locational choices.

7.2.2. *Foreign direct investment theories*

7.2.2.1. *Industrial organisation approach*

Hymer (1976) was pioneer in addressing the issue of international production, introducing a microeconomic theory of the firm. In his work, he concluded that there had been a substantial growth in activities of US firms outside the country and that these activities tended to be concentrated in diverse industrial sectors (Dunning, 1990). As he did not find much use of the existing explanations for international expansion of firms, he left behind the articulation of international production with international trade and capital movements (Calvet, 1981; Moreira, 2009). Being strongly influenced by the work of Bain (1956), Hymer used his approach to explain the industrial composition of FDI. He was interested in examining firms wishing to own or control their foreign-based activities. According to his theory, the establishment of production facilities abroad was mainly motivated by the desire of businesses to expand their market.

Kindleberger (1969) also demonstrated that the rationale for FDI departures from the model of imperfect competition, by asserting that in a world of perfect competition direct investment could not exist. Both Hymer and Kindleberger were inspired by the traditional theory of the market, dealing with market imperfections in a partial equilibrium setting and emphasising the advantage arising from monopolists.

7.2.2.2. *Transaction cost theory*

With the advent of transaction cost theory, the emphasis shifted from why firms grow to the choice of using spot markets (contracts) or hierarchy (firms) to organise economic activity in foreign markets (Weisfelder, 2001). This theory seeks to explain which activities are organised within the firm

and which ones are performed by independent agents. Since multinational enterprises (MNEs) are firms that extend their hierarchies across national boundaries, transaction cost theory threw some light on the reasons behind the existence and the growth of such firms (Hennart, 1987). The transaction cost theory thus seeks to explain why MNEs organise international interdependencies that could also be handled by markets.

This theory is a predictor of institutional choice that views firms and markets as alternative means of organising economic activities (Weisfelder, 2001). By implication, it also predicts when markets, franchising or long-term contracts are more efficient forms of 'enterprise' than firms. Hennart (1987) contributed to bring the insights of several scholars together into a unified international framework, which has been recognised by several authors as explaining international forms of production. The works of Anderson and Gatignon (1986), Gatignon and Anderson (1988), and Hennart (1991) provide excellent reviews of ownership choice explanations based on the transaction cost theory.

7.2.2.3. *Internalisation theory*

The internationalisation theory explains the emergence of multinational enterprises as a result of market failure. It finds its roots in Coase's (1937) transaction cost approach, but it has largely been developed from Williamson's work (1975). Robinson (1931), Kaldor (1934) and Hayek (1937), among others, also provide the theoretical foundation for the internalisation theory, which was further developed and applied to MNEs by Buckley and Casson (1976). Other important contributors are Casson (1979), Rugman (1980), and Hennart (1977).

Buckley and Casson (1976) extended the market imperfection approach focusing on the gains from internalisation available in the presence of market failures, such as information costs, time lags, transaction costs, opportunism, and asset specificity. These failures are the main reason why an MNE must use direct investment instead of licensing. Internalisation entails the acquisition of control, through vertical integration, over activities that would otherwise be carried out inefficiently through market transactions (Weisfelder, 2001).

7.2.2.4. *Eclectic paradigm*

The eclectic paradigm, also known as the OLI Model, shares many features with the transaction cost and internalisation theories. It was proposed by Dunning (1977, 1980, 1988, 1990), who recognised the inability of a single

theory to provide a comprehensive explanation for FDI. The idea behind the eclectic paradigm was thus to merge several isolated theories of international economics into a more dynamic and complete approach, thus benefiting from the work of several authors.

This paradigm explains that the FDI decision is affected by three factors: ownership (O), location (L), and internalisation (I). It explains the reasons why firms decide to internationalise; the prerequisites for that, namely what are the firm-specific advantages; where they invest, being the location advantages important to complement the ownership-specific advantages; and why they select FDI out of many forms of foreign market entry. The important aspect of this theory is that, rather than emphasising a specific advantage as the key determinant of FDI, it seeks to clarify the relationship between different elements (Moeti, 2004). Specifically, it supports the view that the location and ownership advantages are a necessary but insufficient condition for FDI — they need to be complemented by internalisation, which helps to take advantage of such conditions (Weisfelder, 2001).

7.2.3. *Internationalisation theories of the firm*

Contrary to the international trade and FDI theories, internationalisation theories attempt to explain how and why the firm engages in overseas activities, at the same time trying to conceptualise the dynamic nature of such behaviour (Morgan and Katsikeas, 1997). The most familiar dynamic approach is that of the internationalisation process models, which see internationalisation as process of successive stages. However, more recent approaches have challenged this stage model approach, such as the born-globals point of view and the network perspective.

7.2.3.1. *Incremental internationalisation*

Much of the existing literature on internationalisation has been inspired by the work of Scandinavian researchers, who are collectively referred to as the Uppsala School. The model of individual firm internationalisation, known as the Uppsala Model (U-M), is closely associated with the research of Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977). The former studied four large Swedish manufacturing firms and identified four different modes of entry to international markets, where the successive stages represent higher degrees of international involvement. The study also showed that firms seemed to enter new countries with successively greater psychic distance. The latter further developed and refined this work. In order

to explain the incremental character of internationalisation, they formulated a dynamic model, in which the outcome of one cycle of events constitutes the input to the next.

Although the concept of 'psychic distance' had been used in prior research (Beckermann, 1956; Linnemann, 1966), its use in this context was operationalised. Johanson and Vahlne defined psychic distance as 'factors preventing disturbing the flow of information between firm and market, including factors such as differences in language, culture, political systems, level of education, or level of industrial development' (1977, p. 24). This is an important concept because, according to them, internationalisation is based on learning through the development of experiential knowledge on foreign markets. To explain the internationalisation across country markets, it was hypothesised that firms would enter new markets with successively greater psychic distance.

This evolutionary model showed that initial internationalisation activities used the less committed modes of entry and were targeted to psychically close markets. According to this view, better knowledge about the country leads to a stronger commitment to the market. In turn, knowledge and experience can be acquired through a long learning process in connection with current business activities. For this reason, the internationalisation process is often slow and firms follow a cautious approach, especially SMEs, due their limited financial and managerial resources (Lindqvist, 1991). International activities require both general knowledge on operations, which can be transferred from one country to another, and market-specific knowledge, which is assumed to be gained mainly through experience in the market. In this regard, additional market commitment can be made in small incremental steps.

Even though it was developed based on the experience of the Scandinavian market, the Uppsala Model has been extensively used to explain the internationalisation of firms in many countries. This theory has triggered substantial research along the line of the experiential learning perspective, with some empirical studies confirming the existence of a gradual process characterising firms' international expansion or providing support to the idea that psychic distance inhibit firms from full-ownership foreign involvement. Subsequent proposed models have also been stimulated by the Uppsala model, namely innovation-related models (I-M) and the adaptive choice model.

Notwithstanding the widespread recognition and wide acceptance of U-M model in the literature, it has been repeatedly challenged over the years. A number of scholars have criticised it for several reasons,

mainly for its deterministic character; for the hypothesised pattern of the internationalisation process; for not considering the importance of entry movements and cooperation in this process; for the systemic nature of internationalisation; for not explaining much about the initial stages of international involvement, the behaviour and strategies of born-globals; and for not considering the conclusion of other empirical studies that reject this sequential view.

Despite its weaknesses, this model has provided an attractive explanation for the traditional incremental internationalisation of firms over time. Nonetheless, in order to respond to the criticisms, Johanson and Vahlne (1990) suggested a dynamic international model, relating their initial model to the eclectic paradigm model and the networking literature, and introducing also the concepts of the advantage package and the advantage cycle in the internationalisation context.

7.2.3.2. *International new ventures or born globals*

Despite the broad use of the Uppsala model to explain the internationalisation of firms over time, the recent regional and global integration of trade and production, combined with rapid technological changes, are enabling and facilitating rapid internationalisation among firms. Influenced by the growing interest of business press in the rapid internationalisation of firms, this subject started to receive considerable attention in the international entrepreneurship literature in the early 1990s, notably from Oviatt and McDougall (1994), who introduced a theoretical basis for the study of new firms going international.

Although Oviatt and McDougall (1994) have established the elements of a theory of international new ventures, their focus was mainly on static elements, not providing a description on how international new ventures are formed. More recently, these authors (Oviatt and McDougall, 1999) have proposed another conceptual framework for developing a dynamic theory explaining accelerated international entrepreneurship. According to this new approach, while rapidly changing computer, communication and transportation technology is the foundation of this process, a number of political economy and industry conditions, together with firm effects and the role played by the management team, also constitute primary building blocks of this model.

From research carried out on born globals, it can thus be concluded that some firms can internationalise very quickly, despite their small size, limited resources, lack of market experience, acting in most volatile markets.

From inception, these enterprises view the world as their marketplace, leapfrogging into internationalisation rather than moving cautiously through a series of incremental steps as suggested by the stage theories (McDougall *et al.*, 2003).

7.2.3.3. *Network approach to internationalisation*

A study conducted by Coviello and Munro (1995) revealed that software SMEs in New Zealand had not followed the traditional internationalisation stage model. They had internationalised rapidly by associating themselves with other international networks of enterprises in their field. The selection of foreign markets, as well as the choice of the mode of entry, had been prompted by opportunities as a result of formal and informal contacts, and not by active research methods.

The first call to draw upon network theory in international business was made by Johanson and Mattsson (1988), who had put forward the network approach to internationalisation, having concluded that the degree of the firm's internationalisation depends on both the networks established by the firm and the position of the firm on that network. Therefore, the firm's international position is affected by the network in which it operates. They conceive internationalisation as a cumulative process in which the relationships are established, developed, maintained and dissolved continuously in order to attain the objectives of the firm. In their model, the emphasis is on gradual learning and development of market knowledge through interaction within networks. The progressive learning and the acquisition of knowledge through the interactions inside the network are therefore of a great importance.

Several studies challenging traditional models of internationalisation have drawn upon network theory (e.g., Chetty and Campbell-Hunt, 2004; Chetty and Holm, 2000; Coviello, 2006; Coviello and McAuley, 1999; Coviello and Munro, 1995, 1997; Forsgren, 2000, 2001; Forsgren *et al.*, 2005; Madsen and Servais, 1997; McDougall *et al.*, 1994; Oviatt and McDougall, 1997). Johanson and Vahlne (1990) have also revised their previous model (Johanson and Vahlne, 1977) to propose the importance of the firm in its network. In a more recent publication they concluded that, although the old models still apply, it is important to integrate the network-based model into existing theories of firm internationalisation (Johanson and Vahlne, 2003). The network approach thus offers a new perspective for interpretation of the internationalisation process of the firm, particularly SMEs, whose integration in networks is fundamental to their development, considering their limited resources.

7.2.4. *The future of internalisation theory*

The theories mentioned previously attempt to explain the international production phenomenon and the existence and growth of the MNEs. It is noticeable that classical theories are being questioned, mostly due to the growing polycentrism of international economic power. Although they remain valid, they have been challenged as a consequence of the epistemological issues posed by globalisation (Moreira, 2009), and new perspectives have arisen.

The traditional approaches, individually considered, thus fail to provide a complete explanation of the complex nature of the internationalisation process, however these different theoretical frameworks provide complementary views of the internationalisation. For this reason, Rialp and Rialp (2001, p. 69) believe that 'by viewing past contributions more integratively, and incorporating new research findings from the growing literature on foreign modes of entry and the network perspective, significant progress can be achieved in terms of theory development in this field'.

The internationalisation literature has evolved over time to encompass (1) the analysis of transaction cost and structural market imperfections in the context of FDI; (2) the examination of managerial learning and organisational commitment in the process of international expansion; (3) the consideration of multiple forms of foreign market entry available to the firm; and (4) the potential influence of formal and informal networks relationships on internationalisation (Rialp and Rialp, 2001, p. 72). By interrelating all aforementioned approaches, these authors propose a more holistic view, intending to derive a more general conceptualisation and a more sophisticated view, not just a single model which is limited by the size and/or resources of the firm whose behaviour it is designed to explain. Moreira (2009, pp. 57–58) also believes that a new theory is on the rise, which would include (1) nation-states as major players with specific interests at local and global level; (2) SMEs willing to play active roles in global markets; (3) a mixture of the Uppsala and the process model in the process of SME–MNC involvement in global value chains; and (4) a new blend of the eclectic paradigm that involves the three aforementioned aspects.

7.3. Determinants and Barriers to Internationalisation, and Entry Mode Decision

A large number of theoretical explanations on FDI have been advanced over the years, with many studies focusing on the determinants of such investment, in the form of firm-specific or country-specific variables. In the

1960s, some scholars working on the determinants of FDI put emphasis on locational variables (Bandera and White, 1968; Scaperlanda and Mauer, 1969; Vernon, 1966, 1974; Wells, 1972). In the mid-1970s, apart from research on the internationalisation process of firms (Johanson and Vahlne, 1977), attention shifted from the macroeconomic flows of FDI to the firm level of analysis. The main focus of interest was essentially why firms choose to set up or acquire foreign value-adding activities, rather than export the intangible assets, or the right to use these assets, underpinning such activities directly to foreign firms (Buckley and Casson, 1976; Hennart, 1977; McManus, 1972; Rugman, 1980; Swedenborg, 1979).

Although firm-specific determinants of international economic activity were still driving much academic research in the 1980s, this approach was complemented by a renewed interest in the spatial aspects of FDI, and of how these affect both the competitive advantages of firms and their modes of entry into, and expansion in, foreign markets. Dunning's eclectic paradigm (Dunning, 1998) contributed greatly to this, by integrating ownership, locational and internalisation variables into a single approach. In later contributions (Dunning, 2006; Dunning and Bansal, 1997), the role of institutions in the international business activity was considered and a cultural component was incorporated into the paradigm. Hypotheses were developed about how this might affect the ownership and internalisation advantages of firms, and their responses to the characteristics of countries.

Dunning's initial model suggested three main motivation of international production: market seeking, in which the ownership advantage defines the investment location; resource seeking, which considers market size and other characteristics at home and in the host country to get access to production resources; and efficiency seeking, which looks at economies of scale and scope, risk reduction through product diversification, and taxation (Dunning, 1998). Later on, Dunning (1994) added another FDI motivation — strategic asset seeking — for sequential FDI. The aim of the strategic asset seeking investment is to acquire resources that are important to enhance the capabilities of the firm. A fifth category was added by Hansson and Hedin (2007), who expanded the four dimensions of internationalisation motives to include network seeking motives. Even though Dunning did not consider network-seeking motives as a separate category, he had shown an interest in alliance capital as an asset within a network (Dunning, 1995). He argued that external alliances and networks can be incorporated into internalisation if it is acknowledged that inter-firm agreements achieve the same objective as internalisation, albeit more effectively, and/or enable the spreading of capital and other risks among participating firms.

The large number of works trying to explain FDI has resulted in the adoption of several different methodologies, thus making it difficult to obtain precise data on some determinants (Costa, 2003). Despite its limitations, the OLI eclectic paradigm is still regarded as a comprehensive framework and widely used as reference in studies on FDI determinants.

Foreign investment location decisions are influenced by a number of country-specific variables (country of origin and destination), namely market size and growth; tariff and non-tariff barriers to trade, input costs and geographic proximity; legal, political and economic conditions; cultural and psychic distance; labour costs, labour availability and industry mix; foreign exchange rate and host country currency; and political risk and environmental uncertainty. Government supporting investment schemes and immigration are also considered by corporate decision makers.

Firm-specific characteristics can also act as determinants of FDI location patterns, namely its international experience, firm size, degree of multinationality and industry. The transfer of know-how and technology, the presence of an existing subsidiary, economies of scale, pre-emption of potential competitors, the availability of a well-trained labour force, new networks of suppliers for global sourcing, and various industry barriers and firm advantages are also factors affecting location.

Moosa and Cardak (2006) reviewed several empirical studies that tested some of the influences of these variables. These studies have considered different combinations of the variables, and get mixed results, not only with respect to the importance of these variables (statistical significance), but in terms of the direction of their effects.

To engage in international operations, firms have to decide between different modes of penetrating foreign markets. There are varied alternatives, however they can be classified in two main forms: equity-based and non-equity-based. Non-equity modes are divided into export and contractual agreements, while equity modes are split into wholly owned operations and equity joint ventures (Fig. 7.1). Each of these options implies differences in the degree of control that the firm can exercise over its foreign operation, the resources it must commit and the profits it could potentially obtain (Root, 1998).

The greater the degree of control exercised by the firm over the foreign operation, the higher the risk assumed due to the increased responsibility in decision making and to the greater commitment of resources and, therefore, the medium term profits also tend to be greater. In the opposite direction, the methods that imply a low level of control minimise the risk assumed, but often at the expense of the medium term profits.

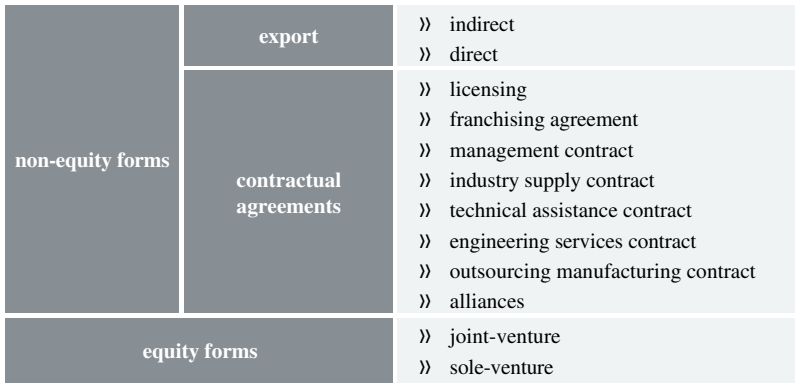

Fig. 7.1. Forms of international operation.

Source: Adapted from Root (1998).

7.4. Internationalisation of Services

Traditionally, the theoretical framework of internationalisation has been developed using the context of manufacturing firms. Despite the importance of services in the world economy and the present trend towards internationalisation, the amount of research on the internationalisation of services is relatively small. International services have been relatively neglected in the international business/marketing literature, theory thus lagging practice by a considerable degree. Nonetheless, as the active involvement of service firms in international markets has been gradually recognised, there has been a growing interest in internationalisation on services, both in conceptual terms and in empirical studies. Frequently these studies are based on several service industries, but they can also be industry-specific (Table 7.1).

Services differ from physical goods in many ways, their main distinguishing characteristics being intangibility, heterogeneity, perishability, and inseparability of production and consumption (Wolak *et al.*, 1998). Even though there are some studies that support the generalisation of entry mode determinants to services (Erramilli, 1990, 1991; Erramilli and Rao, 1993), the differences in the nature of services are believed to create special internationalisation needs and behaviour (Buckley *et al.*, 1992), which are not reflected in the models derived from the observation and research of manufacturing firms (Björkman and Kock, 1997). The range of operation modes tends to be somewhat more limited for service firms than for manufacturing firms (Contractor *et al.*, 2003), and even among different types of services there are substantial differences in terms of foreign market entry modes and market selection (Ekeledo and Sivakumar, 1998).

Table 7.1. Empirical studies on the internationalisation of service firms.

Sector		Studies
Professional services	Advertising	Daniels (1995); Terpstra and Yu (1988); Weinstein (1977)
	Consultancy	Amorim (2000, 2003); Coviello and Martin (1999); Sacramento *et al.* (2002); Winsted and Patterson (1998)
	ICT	Coe (2002); Kuivalainen *et al.* (2001)
	Accountancy	Daniels *et al.* (1989)
Construction		Kaynak and Dalgic (1992)
Financial		Álavarez-Gil *et al.* (2003); Claessens and Jansen (2000); Hellman (1996); Sebastián and Hernansanz (2000)
Retailing		Andersson (2002); Gandolfi and Štrach (2009)
Business-to-business		Javalgi *et al.* (2003)
Tourism		Agndal and Elbe (2007); Altinay (2005); Björkman and Kock (1997); Breda (2010); Pla-Barber and Darder (2002); Ramón Rodríguez (2002); Weiermair and Peters (1998); Zhao and Olsen (1997)
Various service industries		Blomstermo *et al.* (2006); Contractor *et al.* (2003); Edvardsson *et al.* (1993); Ekeledo and Sivakumar (2004); Erramilli (1990, 1991, 1993); Erramilli and Rao (1993); Ganz (2006); Hassid (2003); Henten and Vad (2003); La *et al.* (2003); O'Farrell and Wood (1998); O'Farrell *et al.* (1996); Roberts (1999); Sánchez Peinado and Pla Barber (2006); Stare (2002); Westhead *et al.* (2001)

Source: Own construction.

Several authors have classified services according to their heterogeneous nature, therefore being possible to identify differentiated approaches to firms' internationalisation within services. Erramilli (1990) has proposed a classification of (1) hard services (e.g., architectural design) and (2) soft

services (e.g., food services and accommodation). In the former category, production and consumption can be separated, thus entailing a limited or no local presence of the service firm, while in the latter category the production and consumption occur simultaneously, thus requiring the presence of the firm in the local. In this sense, soft services are not able to be exported, requiring other modes of entry. According to this classification, manufactured goods and hard services do not differ significantly, however there are noticeable differences between hard services and soft services.

Patterson and Cicic (1995) offer a classification based on two levels of 'tangibility' of the service and two levels of 'face-to-face' contact with the client in service delivery: (1) Low face-to-face and low tangibility — location-free professional services; (2) High face-to-face and low tangibility — location-bound customised projects; (3) Low face-to-face and high tangibility — standardised services packages; and (4) High face-to-face and high tangibility — value-added customised services.

Lovelock and Yip (1996) proposed the classification of services into three groups: (1) People-processing services (e.g., restaurants, health care), (2) Possession-processing services (e.g., transportation, appliance repair) and (3) Information-based services (e.g., accounting, insurance). These categories are not mutually exclusive and exhaustive for all services though.

Clark and Rajaratnam (1999) divided services into four different categories: (1) Contact-based services (e.g., consultancy services); (2) Vehicle-based services (e.g., broadcasting); (3) Asset-based services (e.g., banks); and (4) Object-based services (e.g., computer software). They consider contact-based services as the 'purest' type because they exhibit all the classic service characteristics, while the others exhibit them in varying degrees, thus with certain assumptions relaxed.

Generally speaking, service firms may enter foreign markets using a variety of entry modes, ranging from exporting to equity forms, with some types of service firms requiring the presence of the firm in the local of consumption, which is the case of some tourism firms, namely in the accommodation and food sectors. The choice of foreign market entry mode is critical and related to control (Blomstermo *et al.*, 2006), therefore research concerning control and entry mode for internationalisation of services has been identified in the literature. Non-equity modes seem to be more popular among firms supplying services than in manufacturing (Erramilli *et al.*, 2002), especially among consumer-service firms, such as hotel and restaurant firms, as compared to professional-service firms, such as consulting firms (Erramilli, 1990). Ball *et al.* (2008) have, however, suggested that information-intensive soft service firms can use less resource-intensive market entry modes, thus

not being restricted to internationalising through wholly owned subsidiaries and equity based joint ventures.

Service firms engaging in international activities can be 'market seekers', deciding to expand into foreign markets after gaining experience and financial resources in the domestic market (Erramilli, 1990; Erramilli and Rao, 1993). According to Erramilli (1991), experience plays an important role in the foreign market entry behaviour of service firms, with empirical results showing support on models that depict a gradual outward spread of a firm's international operations. Results on entry mode choice imply that, contrary to traditional linear conceptualisations, the relationship between experience and desire for control may be U-shaped, with firms demand high-control modes in the early and late stages of their international evolution.

According to Björkman and Kock (1997), a service firm can adopt a 'costumer following' internationalisation process, with empirical studies evidencing that some firms follow client manufacturing companies into overseas markets, especially banking and insurance industries (Hellman, 1996; Li, 1994). Other studies have also shown the importance of inter-firm relationships, including client corporate networks, and the influence of regional conditions upon internationalisation (O'Farrell and Wood, 1998). Service firms can also internationalise as a reaction to the actions of a competing firm (Engwall and Wallenstål, 1988; Li, 1994). These patterns of internationalisation can be grounded in the network theoretical framework, it being argued that the context in which the actor is embedded constitutes a major factor in the internationalisation of service providing industries (Björkman and Kock, 1997).

7.5. Internationalisation in Tourism

The development of international activities in the 1970s and 1980s stimulated considerable academic interest and analysis. However, few studies have focused on the internationalisation of the tourism sector. Difficulties in obtaining information and data result in lack of application of theories of the multinational enterprise to tourism (Buckley and Geyikdagi, 1996). Only recently has tourism started to receive more attention from international business scholars, especially the hotel sector.

One of the first studies regarding this issue aimed at identifying the criteria established by international hotel companies to guide their expansion policies (Khanna, 1975). Another early study (UNESC, 1980) portrayed the developments in the field in the 1970s, focusing on hotel, airlines and tour operations, and providing an overview of the impact of transnational

corporations in those sectors, and on the development of the tourism industry in developing countries. Apart from the location, it also assessed the main entry modes chosen by the companies. Dunning and McQueen (1981) used data on the involvement of multinational corporations in the international hotel industry to provide empirical support for the eclectic theory of international production. In a subsequent study, they analysed the source of competitive advantage of international hotel chains and the non-equity forms of involvement (Dunning and McQueen, 1982).

Since these pioneering studies, detailing the growing internationalisation of hotel groups, numerous studies have aided in a general understanding of the international hotel market. Burgess *et al.* (1995, p. 74) who assessed some research works on international hotel groups, concluded that, although the analyses of some of these studies 'are based on a numerical framework and the importance of growth in international travel, collectively they have added little theoretical knowledge about the internationalisation of hotel groups'. Since then, the number of publications on the subject has increased considerably, however they continue to be an insignificant part of the literature produced on internationalisation, and thus are insufficient. Jones *et al.* (2004) even suggest a 'research discontinuity', being necessary to identify gaps in the application of general theory to hospitality and fill these gaps.

Apart from more conceptual studies (Alexander and Lockwood, 1996; Baum and Mudambi, 1996; Buckley and Geyikdagi, 1996; Buckley and Papadopoulos, 1988; Burgess *et al.*, 1995; Davé, 1984; Jones *et al.*, 2004; Kusluvan and Karamustafa, 2001; Litteljohn *et al.*, 2007), there have been some works establishing hypothetical bases, applying and testing conceptual models for international hotels. These studies are varied, and they either focus on the international hotel sector at the global scale or on European countries, especially Spain. They also tend to integrate a range of theoretical positions. The main theories used as the basis of analysis were the transaction cost and agency theories (Chen and Dimou, 2005; Cho, 2005; Contractor and Kundu, 1998a; Purcell and Nicholas, 2001; Ramón Rodríguez, 2002), the eclectic paradigm (Anastassopoulos *et al.*, 2007; Dunning and McQueen, 1981; Johnson and Vanetti, 2005) and the Uppsala Model of the internationalisation of the firm (Agndal and Elbe, 2007; Weiermair and Peters, 1998). Other theories used include the internalisation and organisational capabilities theories (Pla-Barber and Darder, 2002) and the syncretic theory (Contractor and Kundu, 1998b).

As the network approach on internationalisation is newer, globally there are fewer academic studies using this conceptual model, especially studies of an empirical nature. In the case of the tourism sector, the existence of

these studies is even scarcer. The exception is Ramón Rodríguez (2002), who, although testing other theories in the Spanish hotel sector, concluded that the importance of firms' relationships with their environment supports the network approach to the internationalisation processes of firms. More recently, Breda (2010) completed a study aimed at understanding the role of networks in the internationalisation process of tourism companies, based on empirical evidence gathered from Portuguese hotel firms.

The hotel sector has a high degree of client–supplier interaction, thus internationalisation necessarily implies a physical presence in the destination country. In this sense, there are basically two different options of entering a foreign market, that is through forms involving direct investment, with shared or total control, and forms not involving contribution of capital (management contracts and franchising).

At the end of 1978, according to the United Nations (UNCTC, 1982; UNESC, 1980), equity capital investment was not the predominant form of involvement of transnational-associate hotels abroad, only accounting for about one third of investments, while the remaining was mainly in the form of contractual arrangements. The management contract, which can be traced back to the 1950s as a foreign market entry method (Panvisavas and Taylor, 2006), was the preferred arrangement, accounting for almost 45% of all forms of involvement by transnational corporations. Nonetheless, some differences were noticed in the forms of involvement in developed and developing countries. While equity investments were preferred in developed market economies, in developing countries, management contracts were the prevalent form of association. Franchising was not very popular and leasing contracts were popular only in some developing countries. Although the origins of hotel franchising can be traced back to the 1950s, until the 1980s it was seldom used as a means to international expansion (Connell, 1997). International franchising was largely confined to a small number of US companies (Dunning and McQueen, 1982). Since then, there has been a rapid growth in international franchising (Contractor and Kundu, 1998a).

A study conducted by Contractor and Kundu (1998b), targeting all firms with foreign hotel operations listed in the International Group Directory, reveals that 37% of foreign properties were under management contracts, making this the most common entry mode in the international hotel business. Alexander and Lockwood (1996) also found that the hotel industry provides many examples of companies operating solely through management contracts or where management contracts form a major part of their total operation. The hotel industry thus uses predominately non-equity modes (Erramilli *et al.*, 2002).

Past empirical or theoretical research has highlighted the relevance of external and internal factors to entry modes (Table 7.2). External factors identified by these studies relate to the conditions of the host country's environment, while internal factors examine the nature and number of the firm's specific assets. Major findings related to the influence of several of these factors on the entry mode choice are presented below.

7.5.1. *Country or market-specific factors*

7.5.1.1. *Risk of the destination country*

Several empirical studies have shown that in environments considered as being risky, firms prefer to share the control with local agents, in order to diminish the risk implicit in FDI (Chen and Dimou, 2005; Contractor and Kundu, 1998b; Pla-Barber and Darder, 2002; Ramón Rodríguez, 2002), while others found no statistical significance (Breda, 2010; Quer *et al.*, 2007).

7.5.1.2. *Cultural distance*

Contractor and Kundu (1998a, 1998b) stated that cultural familiarity assumes importance, especially since hotels use considerable local labour and interact heavily with the local environment. However, they did not find any apparent relationship between socio-cultural distances and modal choice. Pla-Barber and Darder (2002) and Ramón Rodríguez (2002) revealed that modes of entry involving a higher degree of control are associated with more culturally different markets. On the other hand, Quer *et al.* (2007), who also analysed the Spanish international hotel sector, found evidence, for Latin America, to support the hypothesis that the smaller the cultural distance, the more likely firms are ready to assume higher commitment in their entries, opting for equity entry modes. This hypothesis was not confirmed in Europe though. These mixed results can be explained by the fact that non-equity modes can both generate costs when transferring know-how to culturally distant countries, or are easier to implement when cultural proximity occurs (Quer *et al.*, 2007).

7.5.1.3. *Market size and growth*

Some studies show that the modes of entry that demand higher degree of control are associated with the markets with higher sales potential (Pla-Barber and Darder, 2002), while others reveal that non-equity modes are preferred in larger markets (Quer *et al.*, 2007).

Table 7.2. Past research approaches on entry-mode decisions in the hotel sector.

Author(s)	External factors	Internal factors	Type of work
Zhao and Olsen (1997)	Political, economic, socio-cultural, technological and ecological dimensions	International strategy, internal environment	Empirical
Contractor and Kundu (1998a, 1998b)	Country risk; cultural distance; level of economic development, foreign business penetration	Size; international experience and degree of globalisation; perceptions on strategic importance of global scale, control over management and quality, size, global reservations system and brand, investment in training	Empirical
Taylor (2000)	—	Perceptions	Conceptual
Ramón Rodríguez (2002)	Country risk; cultural distance; level of economic development; entry of foreign investment	Size; international experience and degree of internationalisation; perceived strategic importance of scale economies; perceptions on strategic importance of size, global reservations system and brand, investment in training, control over management and quality	Empirical
Purcell and Nicholas (2001)	Market growth; potential as tourism destination; country risk; costs; tax rates; follow competitors;	—	Empirical
Dev *et al.* (2002)	Availability of managerial staff;	Competitive advantage; organisational	Empirical

(*Continued*)

Table 7.2. (*Continued*)

Author(s)	External factors	Internal factors	Type of work
	availability of partners; attractiveness of business environment	competence; quality competence; costumer competence; entry competence; physical competence;	
Pla-Barber and Darder (2002)	Country risk; cultural distance; market potential	size; international experience; intangible assets, competences and skills	Empirical
Dimou *et al.* (2003)	Country risk; market size and growth; level of economic development; degree of FDI	Size; scale; investment in research and development; global reservation systems	Conceptual
Jones *et al.* (2004)	Size and growth of the economy; government policy on FDI; development of the market economy; leisure and business tourism; domestic demand; service mentality; tourist attractions; infra-structure; proximity of the host country; city size	Size; international experience; long-term presence; network strategic alliances; brand name; human resources; marketing expertise; technological advancement; financial strength; strategic planning; reservation systems; knowledge on guest needs; economies of joint supply; economies of scale	Conceptual
Altinay (2005)	Country risk; level of economic development	Size; international experience	Empirical
Chen and Dimou (2005)	Location risk; level of economic development	Brand size and growth; international experience;	Empirical

(*Continued*)

Table 7.2. (*Continued*)

Author(s)	External factors	Internal factors	Type of work
		proprietary content; geographical dispersion; country of origin	
Litteljohn *et al.* (2007)	Country risk; cultural distance; level of economic development; entry of foreign investment	Size; international experience; administrative heritage, market segment; perceptions	Conceptual
Quer *et al.* (2007)	Country risk; cultural distance; market size	Size; *ex ante* profitability; availability of financial funds; indebtedness	Empirical
Breda (2010)	Political, economic and socio-cultural dimensions	Size; international experience and degree of internationalisation; network relationships	Empirical

Source: Own construction.

7.5.1.4. *Level of economic development*

Contractor and Kundu (1998a) find that the richer the market, the greater the likelihood of franchising being used as an entry mode. However, results of other studies show that lower levels of economic development of the target market imply modes of entry with lower degree of control, with firms seeking local partners to share the foreign venture (Chen and Dimou, 2005; Contractor and Kundu, 1998b; Ramón Rodríguez, 2002). This result concurs with the assertion of Dunning and McQueen (1981), who argue that FDI is more frequent in highly competitive markets.

7.5.2. *Firm-specific factors*

7.5.2.1. *Firm size*

One study revealed that there is no empirical evidence to confirm the relationship between size and entry mode (Quer *et al.*, 2007). However, several

other works disclosed that smaller firms tend to present a higher probability of using cooperative methods than larger firms (Contractor and Kundu, 1998b; Pla-Barber and Darder, 2002; Ramón Rodríguez, 2002). Contractor and Kundu (1998a) have, however, confirmed a negative relationship between firm size and control.

7.5.2.2. *International experience and degree of internationalisation*

Results of the study of Pla-Barber and Darder (2002) confirm the evidence obtained by Erramilli (1991), showing a U-shaped relationship. That means that experience plays a determining role in the choice of mode of entry, but its influence will depend on the firms' stage of international development. Contractor and Kundu (1998a, 1998b) evidenced that equity-based modes of entry are preferred by companies with more experience. Conversely, Ramón Rodríguez (2002) and Chen and Dimou (2005) validated the hypothesis of a negative correlation between international experience and control mode. This result shows that firms tend to invest, at the early stage of internationalisation, with complete control of its foreign subsidiaries, and with time they choose more loosely modes of entry, thus revealing the importance of market knowledge (Erramilli, 1990).

7.5.3. *Relational factors*

Although not the basis of analysis, Ramón Rodríguez (2002) reveals that during her empirical study she discovered that some of the international ventures made in collaboration with other companies were done through personal contacts, thus showing that personal relationships play an even greater role in the decision about the choice of an entry mode than the specific advantages of the company or the characteristics of the country. Although these results were presented as a footnote, they represent an important breakthrough, showing the importance of relational factors. Agndal and Elbe (2007) also reveal that personal relations and networks are frequently used by firms in their search for opportunities in new markets. This is confirmed by the findings of Breda (2010) that foreign market selection and entry initiatives emanated from opportunities created through network contacts, rather than solely from the strategic decisions of managers and their own proactive identification process. Relationships were also important in accessing local market knowledge.

7.6. Conclusion

This chapter has reviewed the most influential theories, models and paradigms in the internationalisation of firms and their main supporting

arguments. The drawbacks of these theories were also explored, and it was evident that they have been challenged over the time and this has given rise to new perspectives. The traditional approaches, individually considered, fail to provide a complete explanation of the internationalisation process, thus calling for a more integrative approach, incorporating complementary views about this phenomenon.

One of the most researched theories has been the Uppsala internationalisation model, which describes the internationalisation phenomenon as a process of successive stages with higher degrees of international involvement, introducing the concept of psychic distance. Although a considerable number of studies have confirmed the existence of gradual international expansion, thus providing support to this approach, other studies have contested it, since it does not explain international new ventures or born globals, who internationalise very quickly and do not pass through a series of incremental steps. The network approach has shed some light on how firms, particularly SMEs, can internationalise rapidly. According to this view, the development of business relationships can help overcome the existing barriers, by providing the necessary market knowledge and know-how.

Most works have tended to focus on manufacturing firms, however a growing interest has developed in analysing the particularities of service firms. Although classified in the service sector, the hotel sector has distinctive characteristics that differentiate it from other service industries, therefore presenting a challenge and calling for separate research on the decisions about the mode of corporate development. Despite the importance of the service sector, there are not many studies focusing on it.

The subject of hotel internationalisation is a slowly developing research field. The growing amount of literature in this area offers directions for further research exploring new geographical and organisational issues. However, it has been suggested that tourism research may not always be in line with the generic research conducted on the internationalisation of businesses, nor always aware of the different schools of thought that exist, thus being somewhat limited in scope. This research thus intends to fill in the gaps in the tourism literature, and provide deeper insight in the internationalisation phenomenon.

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Chapter 8

THE LODGING SECTOR AND THE GLOBAL ECONOMY: CHINA'S HOTEL INDUSTRY IN INTERNATIONAL CONTEXT

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Abstract: This chapter examines and analyses the transformation of the lodging sector in China by applying three economic concepts of development and trade: Structural change, catch up and internationalisation. It discusses the structural change in China's lodging sector affected by the structural change in China's overall economy by reviewing China's economic reform and development since 1978. It analyses the catching up efforts by the Chinese hotel industry to improve operating efficiency and service standards and the emergence of Chinese domestic hotel chains. The internationalisation of hotel firms, as reflected first in inward foreign direct investment of equity and human capital and then in outward foreign direct investment by Chinese domestic firms, is examined to identify current hotel development trends, strategies and challenges in the global economy. It concludes with an assessment of future development prospects of China's hotel industry when China becomes globally the leading tourism importer and exporter and has the largest domestic tourism market in the world.

Keywords: Catch up; China; hotels; internationalisation; structural change.

8.1. Introduction

The lodging sector in the Chinese tourism industry has experienced phenomenal development since China's economic reform was initiated in 1978. In the 33 years from 1978 to 2010, the development of China's lodging sector mirrored the economic transition and ascent of China in the global economy. This chapter examines the structural changes of China's lodging sector as affected by its economic reform and transition during this period. It identifies and analyses market demand and supply factors that have shaped the lodging sector. Market segmentation and penetration by international hotel corporations and the emergence of domestic hotel groups are analysed in the

context of the global economy. It also examines the future development of the lodging sector in China as well as the outward foreign direct investment by Chinese hotel corporations.

After China embarked on its economic reforms in 1978, China witnessed rapid economic growth in the following decades. During this period of its economic ascent, China has experienced the typical changes and structural adjustment of its economy which also have affected the development of its lodging industry. A review of the economic growth patterns identified by economic theories of development and trade is felicitous to the study of China's lodging sector. In this chapter, three economic theories of development and trades are discussed to analyse China's remarkable economic growth and the impact on its lodging sector: structural change, catching up with a focus on the emergence of domestic hotel firms, and internationalisation of business firms including both inward foreign direct investment and outward foreign direct investment. The analyses of these factors provide a synthesis of China's hotel industry in the international context.

8.2. Structural Change

China's economic reform found its roots in peasant agricultural society in the late 1970s. The structural policies were then to provide incentives to improve agricultural productivity and transfer works from low-productivity to high-productivity industries (Sacks and Woo, 1994). As the transition progressed, labour shifted from low-productivity to high-productivity industries and services. This transition can be illustrated in the gradual decline of the composition of the primary industry in the country's Gross Domestic Product from 28.2% in 1978 to 10.2% in 2010. This significant decrease was attributed to the slower agricultural output compared to the economic outputs by other sectors. During the same period, the share of Gross Domestic Product by the tertiary industry increased from 23.9% to 43% as service sectors developed rapidly. However, secondary industry has been consistent in contributing its share to the Gross Domestic Product of 48% during the period (46.8% in 2010) as a whole (National Bureau of Statistics of China, 2011). In a revealing study on forecasting China's economic growth, Holz (2005, p. 7) using data from 1978 to 2002, confirmed that when a considerable number of absolute reduction in labour in agriculture productivity in real time increased in China's economy occurred in China. This finding indicates the gradual transfer of labour from the primary industry to the secondary and to tertiary industry, improved labour productivity after the structural changes.

The structural changes in the Chinese economy over recent decades have therefore transformed the sectoral distribution of labour and increased productivity. At the same time, the quantity and quality of labour has been significantly improved because of the increased educational opportunities and improved education standards (Holz, 2005). With increased living standards and education levels, the economic structural changes were clearly reflected in the development of the lodging sector.

At the start of the economic reforms in the late 1970s, domestic travel as a leisure activity was insignificant in the Chinese economy because of the low personal living standards and a large proportion of population engaged in agriculture. The national tourism policy was then to attract international tourists to earn hard currency for national economic development. Resources were committed to building travel services, developing infrastructure and increasing lodging capacity to meet overseas tourist demand (Tisdell and Wen, 1991). Figure 8.1 illustrates China's international tourism growth measured by overseas arrivals with overnight stays in China from 1978 to 2010. This demand pattern shows the remarkable international tourism development from 716,000 overseas arrivals in 1978 to 55.7 million international tourists with overnight stays in 2010. International tourism receipts increased from $263 million in 1978 to an estimated $45.8 billion in 2010 (China National Tourism Administration, 2011). This demand pattern was interrupted several times during this 33-year period as noted by the dips in the trend line — the Tiananmen Square student demonstration in 1989, the political tension between China and Taiwan in 1995, the SARS

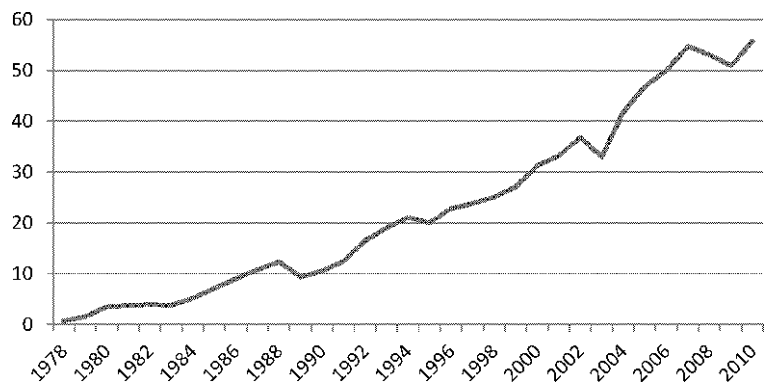

Fig. 8.1. International tourist arrivals in China from 1978 to 2010. International tourist arrivals data includes only those who had overnight stays in China.
Source: China Tourism Statistics Bulletin (various years), China National Tourism Administration (2011).

epidemics in 2003 and the impact of global financial crisis from 2007 to 2009. Obviously, the global financial crisis had a strong negative impact on overseas tourist demand for China, even the mega-sport event of 2008 Beijing Olympics was not able to revive the recovery. However, overseas tourism demand rebounded significantly in 2010.

Overseas demand was the primary driver for China's travel and lodging consumption in the first decade of China's economic transition. Since then, China's domestic tourism market has shown phenomenal growth in the period 1994 to 2010, with only the SARS epidemic in 2003 causing a slight decline. The increase of 2,100 million domestic tourists in 2010 from 524 million in 1994, the first year China National Tourism Administration published official data on domestic travel demand, shows a strong consumer demand for travel in China (Fig. 8.2). The ascent of domestic tourism demand is particularly phenomenal since the SARS epidemic in 2003. Such demand pattern for travel consumption clearly parallels the economic ascent of the country as reflected in the structural changes. Therefore, the rapid development of China's domestic tourism can be attributed to the structural changes in the national economy since the start of China's economic reforms, particularly, to the rise of living standards, the increase of public holidays, and production sector shift to service businesses. As an evidence of structural changes from primary to tertiary industry, the number of travel service providers increased significantly to cater for different market destinations and provide services to entice potential Chinese domestic tourists to visit different destinations within China. Specialised travel services, such as adventure travel,

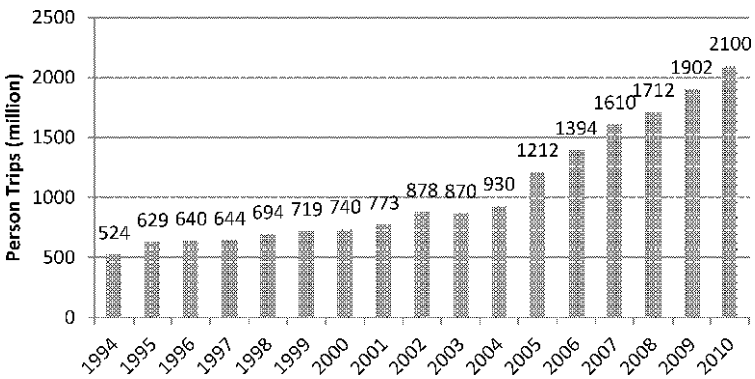

Fig. 8.2. Domestic tourism in China, 1994 to 2010.
Source: China Tourism Statistics Bulletin (various years), China National Tourism Administration (2011).

farm-stays, etc., have further facilitated the convenience of travel planning and the accessibility of a variety of destinations.

After analysing the demand patterns by both overseas and domestic tourists, it is discernible that there has been a structural change in tourism demand for lodging in China. During the early phase of China's economic reform, the lodging sector was primarily developed to serve overseas demand since lodging facilities of international standard were in short supply during the first decade of economic transition. Hotels in primary and secondary cities catered primarily to overseas business and leisure visitors during this period time. With the rise of domestic tourism in China, the demand drivers for the lodging sector have shifted from being overseas-oriented to being dominated by the domestic travel market. A recent study examining China's lodging sector in 2009 provided evidence for such demand shift when it found that domestic tourists occupied 84% of the room nights in Beijing while overseas tourists accounted for only 16% of hotel room nights in 2009 (Gu *et al.*, 2010). Since Beijing is the leading tourism destination in China, hotel demand in the capital city indicates the structural shift of market demand for lodging services in China.

8.3. Catching Up By China's Hotel Industry

Catching up theories of economic development and trade refer to the learning and acquiring knowledge and technology by developing economies from developed economies to shorten the required time to improve their labour productivity and to accelerate economic growth. Developing countries therefore, look for new ways of improving their economies by adopting production techniques and management knowhow from the developed countries which are leaders in innovation, research and development. Methods of catching up with the developed economies include purchase of production equipment, recruitment of expatriate professionals and managers, formulating favourable policies to attract direct foreign investment, encouraging joint venture businesses, and capacity building of human capital. In the process of catching up, structural changes continue because of shifts in the industrial sectors and labour productivity improvement.

In catching up with developed economies, two major challenges face the developing economies. These are lack of capital for economic development and human assets for carrying out the economic reform. Therefore, inward foreign direct investment is targeted as a strategic policy for raising badly needed capital for development and introducing new management practice for human capital development. Host countries have formulated

foreign investment policies to provide incentives to entice investment by international developers. These include tax breaks, financial packages, and other subsidies. It is believed that inward foreign direct investment generates the infusion of not only the badly needed capital into new business development, but can also generate knowledge spillover effects thereby raising the level of productivity in the same industry sector in the host country. Since the new business projects financed by international investors or multinational corporations follow international operation standards and require high productivity, the high productivity resulting from the high standards of management operations can be emulated by domestic firms, which is a strategy for catching up. In the service sector, the knowledge capital strategy is pursued by multinational corporations as they invest knowledge assets in the host countries (Kaskell *et al.*, 2002; Carr *et al.*, 2001). However, studies have also found that these spillovers may not be significant in some host countries because of the limited absorptive capability of the local managers and staff (Aitken and Harrison, 1999).

The catching up by the lodging sector started right after the unfolding of the economic reform in 1978. The initial hotel projects were developed as joint-ventures between Chinese government agencies and the Chinese diaspora, such as the Beijing Jian Guo Hotel, a joint venture between China International Travel Service Beijing Branch and an American Chinese. The White Swan Hotel and the China Hotel in Guangzhou were developed respectively in 1983 and 1984 as joint-ventures with prominent investors in Hong Kong. The most symbolic landmark hotel to witness the economic reform in China and its effort to catch up is the Zhaolong Hotel Beijing which was built in 1985 and financed with $10 million by Sir Pao Yue Kong, Chairman of World Shipping Group in Hong Kong. The grand opening of the hotel was attended by Deng Xiaoping, the chief architect of China's economic reform along with a dozen of other national and municipal leaders. In fact, more than half of the international capital attracted to China in the 1980s was invested in the lodging sector which made the sector one of the earliest and most open industry to the outside world.

In addition to financial capital infusion from Chinese diaspora, international hotel firms also entered the Chinese lodging market by bringing in knowledge capital. The first management contract was reached in 1982 between Hong Kong-based Peninsular Hotel Group and the joint owners of Beijing Jian Guo Hotel. Gradually, international hotel firms entered the market by signing management contracts to operate the upscale and luxury hotels catering for overseas business and leisure travellers. By 1991, 202

hotels were operated as joint ventures with overseas investors, 215 hotels were trading under international management contracts, and four hotels were financed completely by overseas investment (CNTA, 1992).

China's catching up strategy by attracting both financial capital and knowledge capital through joint venture projects and sole investment by overseas investors had a significant impact on the development of China's lodging sector, particularly, in improving guest service quality and increasing service quality to meet international standards. One of the most debated issues concerning the catching up strategy arranged through inward foreign direct investment or knowledge capital transfer is the spillover effect on wages and productivity in the host country (Lipsey and Sjöholm, 2005). Inconclusive evidence about spillovers as results of inward foreign direct investment was reported in research literature from other industry sectors in different countries. The lodging sector in China was benefited from the catching up strategy leveraging inward foreign direct investment in both capital asset and management knowhow. Hotel operations by international management at upscale and luxury levels (four-star and five-star hotels) leveraged their competitive advantages in knowledge capital, e.g., reservation systems, marketing strategies, property management systems, cost control system, human resources development, and they were able to perform more efficiently and profitably. Such competitive advantages by internationally managed hotels were reported in several earlier studies (Pine and Phillips, 2005; Yu and Gu, 2005; Ryan and Gu, 2007). The spillover from international firms to local firms owned or managed by these international firms made these firms more competitive in the lodging market. As a result, their catching up time was reduced compared to those of the domestic firms and individual hotels. Figures 8.3 and 8.4 compare hotel performance efficiency measured by revenue per available room (RevPar) among hotels managed by international affiliations, domestic firms and independent operators from 2002 to 2009. The positive spillover on productivity and efficiency of international management is clearly reflected in the hotels managed by international firms from 2002 to 2009 as their RevPar performance has been consistently better than those of similar domestic operations managed by Chinese chains and independent operators.

The emergence of domestic hotel firms is another indication of catching up by the Chinese lodging sector. After learning and absorbing international practices, domestic hotel firms developed rapidly after 1990. The domestic hotel industry also experienced major structural changes as well from predominantly state-owned enterprises (SEO) to diversified ownerships, and

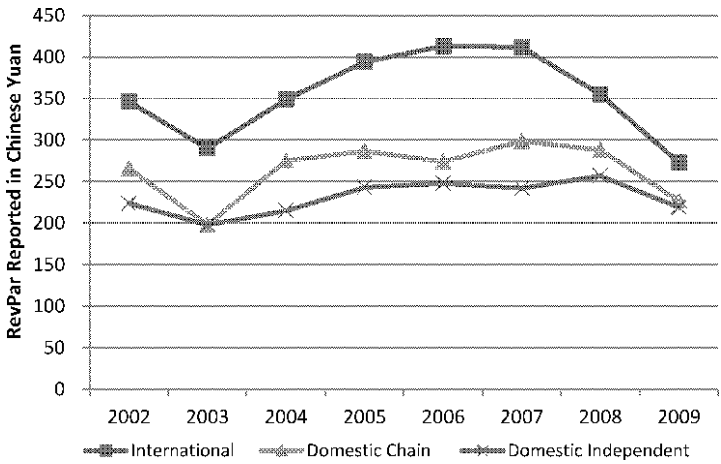

Fig. 8.3. Comparison of RevPar performance of four-star hotels by management. Chinese Renminbi has been appreciated from \$1:¥8.27 before June 2005 to the present \$1:¥6.54.
Source: *China Hotel Industry Study 2003–2010*. China Tourist Hotel Association.

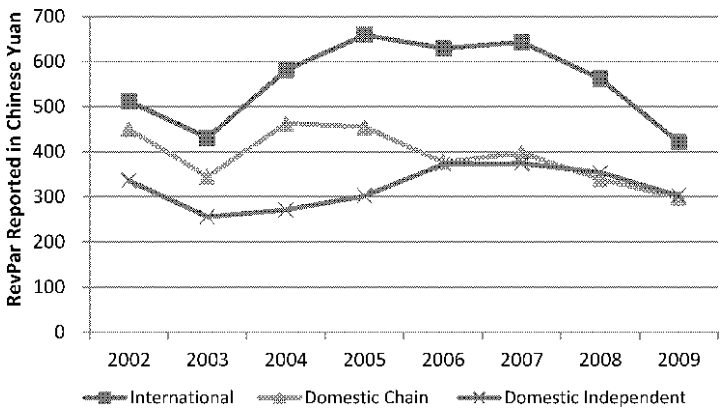

Fig. 8.4. Comparison of RevPar performance of five-star hotels by management. Chinese Renminbi has been appreciated from \$1:¥8.27 before June 2005 to the present \$1:¥6.54.
Source: *China Hotel Industry Study 2003–2010*. China Tourist Hotel Association.

from simply a place to stay to a home away from home under contemporary management. However, the transformation of the China's lodging sector was not without pain and costly lessons (Pine and Qi, 2004). With the implementation of the hotel star ranking system in 1988, Chinese domestic tourism hotels were pressured to improve customer service and operational efficiency: Two major areas of operations in which domestically owned and operated

hotels lagged behind their internationally owned and operated counterparts. Much of the blame was primarily placed on the ownership of the hotels, SEO, for the lack of market-oriented management expertise and the lack of incentives for the management to perform. Unprofitable performance and non-performing assets due to bad loans had plagued many of domestically owned and operated hotels (Yu and Gu, 2005; Tang *et al.*, 2006; Mak, 2008). Over a period of six years, the Chinese hotel industry experienced economic hardship. It began with the Asian financial crisis in 1988, and was added to by natural disasters, global terrorist attacks, the epidemics of SARS, and bird flu in 2003. During this period of six years, the Chinese hotel sector suffered consecutively financial losses and many domestic hotels were devastated by these uncontrollable external events.

Market reform in China's lodging sector was initiated as early as the late 1980s with an aim to catch up with hotels operated by international firms. The first Chinese indigenous hotel group, China Hotel Lian Yi Group, was created in early 1987 to consolidate several SOE properties and set up standardised operations to improve service and financial performance. In the ensuing year, Beijing Hotel Group was created to manage three SOE hotels owned by Beijing Municipal Government. This trend ushered in the emergence of domestic hotel management firms and the number of these firms reached 40 by the end of 1999s. Market reform accelerated in the latter part of 1990s as China anticipated to joining the World Trade Organisation in 2002. The Chinese government planned to transfer its state ownership in hotel assets to private ownership as a way of disposing of many non-performing properties and in order to reduce its financial burden due to high debt ratios plaguing many state-owned banks. As a result, hotel consolidations and mergers occurred at an increasing pace in the Chinese lodging sector, and many private Chinese firms invested in hotels as a strategy to diversify their assets. Privately-owned hotel firms were also developed to capitalise on market opportunities for hotel development and management. New Century Hotels & Resorts, the largest private hotel firm in China, was converted to a private enterprise in 1999 and has now become one of the few private hotel firms ranked in the top 20 largest domestic hotel groups in China. Table 8.1 lists the top domestic hotel firms by size. Jin Jiang Hotels is now ranked as the 13th largest hotel firm in the world (HOTELS, 2010). Not only do these domestic firms grow in size, but many have strategically positioned themselves in different market segments through branding. For example, Jin Jiang Hotels has developed five brands to capture different travel motivations and lifestyles: Jin Jinag Hotels, Marvel Hotels, Jin Jiang Inn, Bestay Hotel Express, and Magnotel.

Table 8.1. Growth of Chinese domestic hotel firms, 2008–2009.

Hotel group	Total room (2008)	Total rooms (2009)	Growth (%)
Jin Jiang Hotel International	29,638	87,289	194.5%
HK CTS Hotels	16,883	22,713	34.5
BTG — Jianguo Hotels & Resorts	20,054	21,348	6.5
Jinling Hotels & Resorts	16,801	19,821	18.0
New Century Hotels & Resorts	8,962	14,556	62.4
Lingnan Hotels International	8,017	13,463	67.9
Blue Horizon Hotels Group	4,577	12,775	178.0
Guangdong (International) Hotels	14,897	12,698	−14.8
Hunan Huatian Hotel Group	8,100	11,741	45.0
HNA Tourism	10,873	11,735	7.9
SGF International Hotels	10,800	11,003	1.9
Landison	8,659	10,576	22.1
Nanyuan Hotel group	5,323	10,305	93.6
Zhejiang Narada Hospitality Services	6,754	9,871	46.2
Plains Hotel, Henan	8,931	9,484	6.2
Soluxe Hotel Group	5,166	9,222	78.5
Shaanxi Provincial Tourism	4,658	7,300	56.7
Tianlun Hotels International	5,730	5,876	2.5
OCT Hotel Group	4,500	5,739	27.5
Oriental Jasper Hotels	4,754	5,483	15.3

Source: China Tourist Hotel Association (2010).

8.4. Internationalisation of Hotel Firms, and China's Outbound Tourism

The internationalisation of the business of firms is motivated by different internal and external determinants. Market entry by firms from developed economies into developing economies is primarily determined by the market potential in the host country and the exploitation of firms' competitive advantages in the global market (Conklin, 1991). The competitive advantages of the developed firms are reflected in their access to capital and possession of the knowledge capital in innovation, new product development, and service management. In addition, internationalised firms can leverage organisational advantage with efficient vertical integration in global market

by formulating strategically defined mission, culture and management standard. These competitive advantages combine to motivate international firms to exploit business opportunities in different countries (Conklin, 1991).

Dunning and McQueen (1982, p. 78) studied the internationalisation of hotel firms in the 1970s and reported that four types of involvements hotel firms developed their overseas portfolios: (1) Direct equity investment (in varying degrees of commitment), (2) Leasing arrangement, (3) Management contract, and (4) Franchise agreement. Applying the framework of the eclectic theory of international production, the authors explained the growth, distribution and the strategy of multinational enterprises in the international hotel industry. The expansion of international hotel firms to overseas markets is particularly attributed to the competitive or ownership advantage over other firms and to the efficient utilisation of resources found in the host countries. These advantages are identified primarily as knowledge and expertise, such as the advantages in intangible assets and logistical skills, sourcing of human assets and products, managerial and organisational systems (particularly, standard operation procedures and training programs), and the global reservation and marketing apparatus (Dunning and McQueeen, 1982, pp. 83–85).

These competitive advantages of international hotel firms characterised in Dunning and McQueen's study were also fully exploited in the Chinese lodging sector. Though China was open for inward foreign direct investment in the early 1980s and management contract operations by international hotel firms started in the mid-1980s, its pace of internationalisation of hotel development picked up in the 1990s and accelerated in the 2000s. International hotel companies have been aggressively jockeying for positions in the Chinese lodging markets through direct investments, brand conversion through franchise and management contracts, and strategic alliances (Pine *et al.*, 2000; Xiao *et al.*, 2008). Luxury brands such as Four Seasons, Ritz-Carlton, Shangri-La have been developed in major metropolitan markets, such as Shanghai, Guangzhou and Beijing. Marriott International has been focusing on both up-scale and mid-market segments. Familiar brands such as InterContinental, Starwood, Accor, Hyatt, Hilton etc. continue to expand in major and secondary cities and other tourist destinations. Market opportunities for budget and mid-market segments for the growing Chinese domestic tourists have attracted Wyndham (Days Inn, Super 8, and Howard Johnson brands) to expand operations in China.

The business development strategy of international hotel firms paralleled the economic transition of China. International hotel firms were first motivated to serve the pent-up demand by overseas tourists to China. Dunning

and McQueen (1982, p. 85) noted that 'countries most likely to be involved in foreign hotel operations would also be those which tend to generate the most foreign investment'. In addition, the market leaders of early entrants to China's lodging market also originated from the major tourism originating countries for China. The management of Beijing Jian Guo Hotel by Hong Kong-based Peninsular Group (1982), the entry of Shangri-La Hotels and Resorts (1984), InterContinental Hotels Group (1984), the management of Beijing Great Wall Hotel and Shanghai Huating Hotel by Sheraton (1985), Shanghai Nikko Hotel (1987), Shanghai Hilton Hotel (1988) and Kempinski Hotel in Beijing (1992) reflected the ownership advantage by international hotel firms in their knowledge of consumer perceptions and behaviours from their home countries and regions, particularly, business and leisure tourists from Hong Kong, Singapore, the US, Japan, and Germany. The competitive advantages of these international firms are characterised as benefitting from the highly developed lodging industry in their home countries in the areas of management knowhow, knowledge of markets and a pool of expatriate managers for international assignment.

As the Chinese economy continued to transform and as significant structural changes occurred in the economy, international hotel firms began to focus on both overseas and domestic markets. Market segmentation by products and geographic location began to take shape. In the luxury market, Shanghai Portman Hotel invited Ritz-Carlton to manage its operations in 1998. More midscale lodging products were introduced to China in the 1990s, such as Courtyard by Marriott in co-branding with New World Hotels (1998), Ramada (1993), Howard Johnson (1998), and Days Inn (1999).

After China became a member of the World Trade Organisation in 2002, internationalisation of China's lodging market has been intensified. Market entry barriers were removed and international hotel firms had no restrictions in pursuing opportunities in hotel investment and management. China and the US even signed a bilateral agreement lifting all restrictions for US-based hotel companies to conduct business in China three years after China's entry into the World Trade Organisation (The China Business Review, 2000). The scope and market penetration by international hotel firms were far reaching during the 2000s. Development by international hotel firms generated greater competition and highly diversified hotel products defined by brands and market segments. The drive for penetrating the Chinese lodging market by international hotel firms was primarily determined by the forecast of the overseas arrivals to China, the rapidly growing domestic market and the ever growing level of outbound tourism from China. The following news release

by Accor after announcing its development strategy in China articulated the strategic vision by international hotel firms:

> We are placing great emphasis on the development of our upper-scale brands, we are also expanding rapidly in the mid- and economy sectors of the market — which sets Accor apart from most other international hotel companies. In China, we offer a complete range of hotel styles, from luxury to economy, from city-centre to resort, and from major gateway cities to regional and emerging cities. We cover the needs of the complete range of domestic and international travellers in China.
>
> With the Chinese mainland expected to double the number of foreign visitors from 25 million to 50 million by 2020, and with a forecast of 1.5 billion domestic trips, Accor is developing its network to cover the areas of greatest new demand. Our wider presence in the Chinese market will also benefit the outbound market, with growth over 10% in outbound travel forecast for destinations such as Europe, Asia and Australia, where Accor has a very significant presence (Accor Media Release, 2007).

Such three-pronged strategy has been pursued by most international hotel firms in China in the last decade: Continue to cater to overseas tourists, capture the travel demand by the Chinese upper and middle classes and build brand awareness and loyalty among Chinese consumers. When the Chinese travel to overseas, international hotel brand will be their preferred choice of lodging accommodations. As Fig. 8.5 demonstrates, the Chinese outbound tourism witnessed an impressive growth of 2.39 million visitors in 1992 to 57.39 million visitors in 2010, the first time Chinese outbound tourists outnumbered the inbound tourists of 55.7 million for the year. This also indicates that the growth trajectory forecast by the UNWTO for 100 million Chinese outbound tourists by 2020 could be reached before target. Therefore, the Chinese outbound tourism has been aggressively targeted by many countries. International hotel firms are cultivating brand awareness and nurturing brand loyalty among Chinese consumers and strategically positioning their brands in the Chinese outbound markets.

Capitalising on the structural changes of China's economy as reflected in the travel market, international hotel firms have also redefined development strategies in China, particularly, embodied in the following strategies: (1) Shifting the primary market from overseas to domestic by strategically

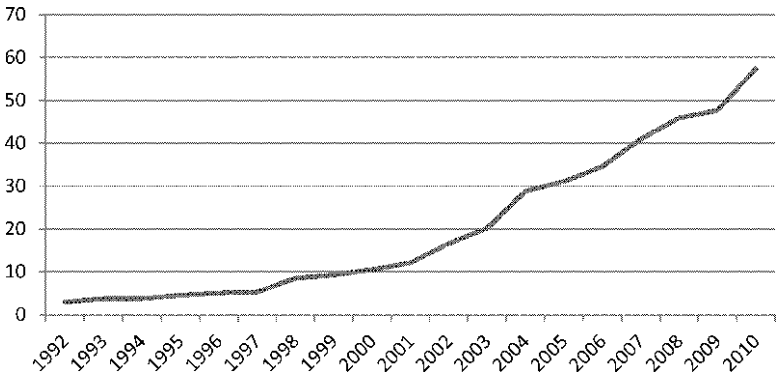

Fig. 8.5. China outbound tourism from 1992 to 2010.
Source: China Tourism Statistics Bulletin (various years), China National Tourism Administration (2011).

developing new brand for the Chinese market, e.g., the Pullman brand by Accor, and by effectively integrating local management talent and local culture in service management; (2) Market penetrations from the primary, coastal cities to the secondary cities and now to interior, tertiary cities and destinations; (3) Strategically introducing or developing hotel brands to the Chinese markets after realising that the Chinese consumers' behaviours have significantly changed from accepting all international brands religiously to realistically selecting lodging accommodations based on motivations, needs and lifestyles. However, international hotel firms continue to face the challenges of management operations in China, particularly in managing cultural differences, as evidenced by the delisting of five-star rankings of international branded hotels (*China Daily*, 2010). In addition, international hotel firms have been left out of the real estate development market in the last two decades since most firms did not take an equity-ownership approach in hotel development in China.

The internationalisation of hotel sector in China serves as a good example of the globalisation of world economy and trade as China's economy continues to power forward. The heavy presence by international hotel firms, estimated around 40 international hotel groups with over 60 brands and more than 550 hotels managed by international hotel firms, has presented tremendous competitive challenges to the domestic hotel operations, both managed by hotel chains and independent owners. The following section examines and analyses the development of the domestic hotels amidst the intensified waves of internationalisation.

As the international hotel firms continue to expand and penetrate China's lodging market, the domestic firms have also looked beyond national borders for opportunities to continue the catching up for competitive advantage in the increasingly globalised business environment, particularly, raising capital from overseas equity markets and outward foreign direct investment. This strategy demonstrated the continuing trend of catching up by accessing the global capital markets and by engaging in global mergers and acquisitions. Home Inn, an economy hotel chain developed by a partnership between CTrip (China's largest online travel agent) and Capital Tourism Corporation in 2002, raised $109 million from its initial public offering on NASDAQ in October 2006. The capital raised from overseas equity market enabled Home Inn to expand aggressively its portfolio in China to over 70 cities and compete head-on with Jin Jiang Inn, a market leader in the economy market space which launched its first hotel in 1997. With its business success in the economy market, Home Inn has developed a new strategy to enter the mid and upscale business markets by introducing the Yitel brand targeting business travellers. Following the success of Home Inn, 7 Days Inn went public in the New York Stock Exchange and raised $111 million on its IPO in November 2009. Founded in 2005, 7 Days Inn expanded its operations rapidly and has become one of the top five economy chain hotels in China. The newly raised capital would keep the company competitive in marketing promotion and brand management.

While accessing overseas capital is pursued by economy hotel chains as internationalisation strategy, bigger and well-capitalised Chinese domestic hotel firms have chosen a different strategy — outward foreign direct investment by engaging in merger and acquisition in developed countries. Outward foreign direct investment by Chinese firms has drawn considerable interests by scholars and most investment in merger and acquisition activities are in other business sectors such as energy, transport and logistics, textile, automobile, information systems, trading, etc. (Liu *et al.*, 2005; Liu and Tian, 2008). As Liu and Tian (2008, pp. 96–97) noted, the motivations of the Chinese firms for outward investment include expanding into foreign markets and acquiring competitive advantage by owning the management and technical expertise present in these markets. Though still in its infancy, outward foreign direct investment by Chinese hotel firms will continue to grow. One of the major outward investments was made by Shanghai-based Jin Jiang Hotels in 2009 when it joined US-based Hotel Acquisition Company to acquire Interstate Hotels and Resorts in the US valued at approximately $309 million for a 50/50 joint venture. The merger included the subsidiary of Hotel Acquisition Company, Thayor Lodging Group, Jin Jiang Hotels, and

Interstate Hotels and Resorts. Such an acquisition clearly gave Jin Jiang Hotels immediate access to North America lodging markets as well as access to knowledge sharing in all aspects of hotel and resort management.

8.5. Summary and Prospects

This chapter analysed the development of the lodging sector in China since it embarked on economic reform in 1978. This was done by applying theoretical frameworks from economic growth and international trade, structural change, catching up and the internationalisation of business firms. The remarkable rise of the Chinese economy over the last 33 years (up to 2011) has resulted in significant structural changes in its economic system as the focus of its industrial sectors had shifted from primary industry to tertiary industry, and labour productivity in China has been improved. As labour productivity increased, living standards of the urban population and residents in the coastal areas where export-based manufacturing were based were improved as well. China's structural changes in economic transformation therefore, created increasing numbers of rich and middle class of Chinese residents with demand for domestic and overseas travel. In China's lodging sector, hotels developed by both domestic and overseas investors were originally built to cater to international visitors. As the structural changes continued in its economy, hotel firms in China focused on Chinese domestic tourism and Chinese outbound tourism as the main target markets. Also, product diversification and market competition intensified between domestic and international hoteliers.

The possibility of catching up economically with more developed countries motivated the Chinese government to encourage inward foreign direct investment and capture knowledge assets from international firms establishing business in the host country. The spillover in productivity is considered to be the main effect of catching up and occurs when international firms hire local residents and transfer knowledge in their management operations. International firms thus maintain competitive advantage in labour productivity over their domestic counterparts. The Chinese lodging sector leveraged the catching up effectively by first inviting hotel investment by the Chinese diaspora in the US and Hong Kong, thereby providing badly needed financial capital. On the other hand, international hotel firms with established brands were encouraged to manage hotels in China by contributing to knowledge capital. Knowledge transfer in hotel management was one of the earliest and the most effective forms of catching up in the early years of China's economic reform (Pine, 1992). The spillover in productivity and efficiency was

demonstrated by a comparison of Chinese hotels managed by international hotel firms with those which were domestically owned and operated. Because of its early start in catching up, the lodging sector in China's tourism industry, when examined as a value chain, can be confidently identified as one of the strongest components of the value chain because of its early exposure to and implementation of industry standardisation and internationalisation.

The internationalisation of the lodging sector experienced dramatic development in recent decades. International hotel firms first entered the China market to serve the international tourists at mid-and upscale levels. As the Chinese economy continued to sustain rapid growth, international hotel firms increased their presence in China to target both overseas and domestic tourism and developed highly diversified lodging options from luxury services to economy accommodations. At the same time, international hotel firms also promoted brand awareness to Chinese consumers for future outbound business. In recent years, Chinese domestic firms have begun to internationalise their operations by raising capital in overseas equity markets and by pursuing outward foreign direct investment in developed countries to increase their competitive advantage in market access and by knowledge acquisition.

The internationalisation of China's lodging sector will continue to intensify in this decade as both international and domestic hotel firms compete for new growth opportunities. At present, the development of large resort projects, as evidenced in Hainan Island, have attracted both domestic and overseas investors. Leveraging resort to increase residential property values has also been pursued by Chinese real estate developers. Mixed use projects featuring commercial, residential and lodging functions are also on the rise, such as the development of the Shanghai J-Tower designed as the tallest building in China with certification for sustainable design by the Leadership in Energy and Environmental Design (LEED).

The growing sizes of the three tourism markets of China: overseas inbound tourism (export market), domestic tourism and Chinese outbound tourism (import market), particularly, when China is forecast to surpass the US in business travel by 2015 (Ernest & Young Global, 2011), will further spur hotel development throughout the country by both international and domestic firms. Hotel firms will penetrate different market segments by diversifying their products. Firms which have been pursuing focus and cost strategies, such as the economy chains, have reorganised their development strategy by diversifying their brands to capture broader market segments. Two examples illustrate this strategic development: The redefining of brands to cover the economy, midscale and upscale lodging markets by Best Western

into Best Western Premium, Best Western Plus and Best Western; and the Yitel brand by Home Inn to appeal to upscale business market, a departure from its core business of catering for the economy market.

As both international and domestic firms attempt to capitalise on the growing demand for lodging, they also face challenges in business operations. International hotel firms have been enjoying competitive advantage in knowledge capital and global network support. However, such advantages could be soon challenged as more domestic firms begin to internationalise their operations to gain access to global market or merge with an international hotel firm with proven management track record in the continuous effort of catching up by the domestic firms. Domestic hotel firms face even greater challenges in the internationalisation of the hotel sector. The critical area of competition focuses on the development of human assets for hotel operations. After the hotel properties are fully developed, hotels compete for market shares by interactive marketing, impeccable guest services, brand management, guest relationship management, yield management and efficient technological applications in reservations and communications. Since the international firms and better managed domestic firms attract the best talents in their operations, therefore, most domestic hotels are challenged to develop a new generation of hotel managerial professionals to stay competitive in the internationalised lodging market.

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Chapter 9

TRAVEL AND TOURISM INTERMEDIARIES: THEIR CHANGING ROLE

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Abstract: This chapter focuses on the role of travel agencies and tour operators in the tourism system and their ability to adapt to constant changes in an increasingly dynamic tourism market. Special emphasis is given to the impact of information technology. The economic objectives of these entities are explained, as are the consequences of the consolidation processes that have helped to create a leisure travel value chain which provides customers with a complex service from a single source. All of these factors have brought significant changes to the structure of the tourism industry.

Keywords: Consolidation; leisure travel value chain; online distribution; tour operator; travel agent; travel and tourism intermediaries.

9.1. Introduction

One could ask why travel and tourism intermediaries still exist when, since the 1970s, some market analysts have been predicting their disappearance, and, along with them, cheap package holidays, too. Obviously, these 'futurists' have not taken into account the ability of intermediaries to adapt to the constant changes in the tourism market. Like any other economic entity, travel intermediaries have to justify their existence in the market, otherwise they would simply be pushed out. Since inventions and innovations have been part of our very existence, they have also certainly led to developments in travel and tourism intermediation as well.

Travel agencies and tour operators, as the major representatives of intermediaries in the tourism market, and forming part of indirect distribution channels, have certainly been one of the important factors in the tourism system. It is very hard to believe that they will not continue to play a vital part. The following data, for illustration only, reflect the position of travel agencies and tour operators in the largest generating and receiving market in the world — the European market. According to the European Travel

Agents' and Tour Operators' Association (ETAA), there were 190 million package holidays sold in 2007. In 2010, there were 77,000 travel agency and tour operator enterprises in Europe and between them they generated EUR 300 billion in turnover. Package holidays accounted for about half of this amount (De Blust, 2011). This equals over 40% of the total international tourism receipts recorded in 2010 worldwide. This suggests that Europeans still strongly rely on the services of travel agents and tour operators, despite the trend of suppliers of tourism services to bypass travel and tourism intermediaries by selling their services directly to consumers. Nevertheless, one has to bear in mind that the organisation of travel varies from country to country (Flash Eurobarometer, 2011). For example, in the UK, 90% of foreign package holidays are provided by The Association of British Travel Agents (ABTA) members; in Germany, 80% is provided by Der Deutscher ReiseVerband (DRV) members.

The situation in the USA market is different. There are 9,386 travel agency firms that operate 15,671 retail locations which belong to the Airlines Reporting Corporation (ARC). There is also an additional number of travel agencies that focus on leisure travel sales but do not sell air services and therefore are not included in the ARC reports (ASTA, 2011). According to research by the American Society of Travel Agents (ASTA, 2011), from 2004 to 2010, the percentage of international sales provided by travel agencies increased from 40% to 55% (ASTA, 2011). Leisure products make up an average of 78% of the total sales, and corporate sales account for the rest. According to a United States Tour Operators Association (USTOA) survey (2011), tour operator members of USTOA provide holiday travel for more than 11 million passengers annually and their annual sales amount to over $9 billion. Compared to European figures, this is very modest. However, one has to bear in mind that the European market is the most developed market of organised travel in the world.

Those who say that the role of travel agencies and tour operators is diminishing, on account of the ongoing trend of individualisation in tourism travel and due to the increased use of ICT, probably base their arguments on the number of travel agencies and tour operators in the market. They clearly have not made a thorough in-depth analysis of the changes that have occurred within the field of intermediaries. Indeed, it is true that the number of travel agencies and tour operators in the largest tourism generating and receiving market, Europe, has fallen in the last ten years. But has it not always been the case that travel agencies that perform poorly go bankrupt, with the same happening to some bad online systems, too? One should also not forget that the European market of organised travel has gone through

the most intensive consolidation process in its entire history and that this process has resulted in significant structural changes in the tourism market that have significantly affected the business of intermediaries.

The present situation in the travel and tourism intermediaries market clearly demonstrates that travel agencies and tour operators are here to stay, and not just in the near future. Most of the so-called 'futurists' in the tourism field overlook the fact that travel and tourism intermediaries have always been accustomed to different kinds of threat. As Goeldner *et al.* (2000, p. 196) rightly pointed out, 'one of the problems of being an intermediary (wholesaler or retailer) is that someone is always trying to eliminate you'. For travel and tourism intermediaries, trading conditions in the market have always been challenging.

The functions of travel and tourism intermediaries in the tourism system are the same as when they first appeared in the market: They still connect providers of travel and tourism services with those who make use of these services. They are of equal importance for tourism consumers and for the suppliers of the related products and services. However, what has changed is the *role* that travel agencies and tour operators play in the market and the *way* in which they execute their business functions and satisfy the needs of their customers. The main drivers of these changes are customers, ICT, competition and the intermediaries themselves.

9.2. The Changing Role of Travel Agents

Why would someone nowadays even try to buy a travel and tourism service from a travel agent when he or she could buy it directly from the final providers of the related services that have developed online applications which enable customers to access directly their reservation systems? The simplest answer can be found on the website of a travel agent association: 'Without a travel agent, you're on your own!' (ASTA's motto). Millions of people experienced what it means to travel with or without a travel agent's support during and after the volcano ash cloud in 2010, or during the unrest in the Arab region in 2011, or whenever something goes wrong on a journey or on a holiday.

Since the times of Thomas Cook some 170 years ago, travel agencies have been acting in the market as retailers and have been selling the products of various providers of travel and tourism services, for example, hotels, transportation companies, car rentals, package holidays, travel insurance, and so on. To be able to fulfil the role of travel intermediary in the market, travel agents have for years been providing free a wide range of information and

giving advice to their customers, ranging from very general to strictly specific information, usually face to face. The role of providing information has also been closely connected with the promotional function of travel agents. All of the mentioned roles and functions are still incorporated in the travel agency's business, but execution of these functions has drastically changed.

The main area of change and innovation in tourism is connected with the use of information and communication technologies — ICT (OECD, 2004). Buhalis and Law (2008, p. 609) stress that ICT has been dramatically transforming tourism globally since the 1970s. According to the same authors, the Internet is one of the most influential technologies that have changed travellers' behaviour, since they are able to interact directly with suppliers, thus challenging the role of intermediaries. This has caused a revolution in intermediation, since conditions have thus been created for the emergence of many new eTourism intermediaries (Buhalis, 2003), such as Expedia or Travelocity. Online travel sales have been rocketing from year to year. In 2000, the online travel trade in Europe amounted to only 1% of the total, while in 2009 it reached 34% of total sales globally (Euromonitor).

With the turn of the new millennium, there was a huge emergence of direct online sales from all service providers: The creation of web portals and the rise of online travel agents (OTAs) really seemed to threaten the future of traditional travel agencies which at the same time had to cope with the introduction of the 'zero base commission' by airline companies, the IATA's Billing Settlement Plan (strict rules imposed by IATA, passing all costs to agents with no commission and no credit for travel agents), and the growing market share of Low-Cost Carriers (LCC) with strong incentives for direct bookings. The result of these events was that the profit margins of many travel agencies began to shrink, operating costs rose, and productivity decreased. To make matters worse, many travel agencies had a very low level of technology, and no customer relation management tools, and therefore were not able to meet customers' changing demands.

On the other hand, ICT has had a very positive effect on tourism consumers, since the tourism offer from each supplier has become more transparent worldwide, therefore creating 'pressure in the direction of quality, optimal prices and efficient use of time with regard to tourist offers' (Laesser and Jäger, 2001, p. 40). ICT has necessarily become a must for travel agencies as well. Some travel agencies in these processes of change have been successful, and some have not. However, the travel agencies those have accepted ICT as a challenge and a tool for enhancing their service, and not as a threat, have been able to improve significantly their service offer for their customers. Buhalis (1998) clearly pointed out that there are also

a few IT facilitated factors on the demand side, which enhance consumer satisfaction, namely: More information for consumers who enjoy greater choice; a reduction of bureaucracy and paperwork, effectively freeing time for customer service; customising the product and establishing 'one-to-one' marketing by using intelligence collected by loyalty schemes; providing new services, entertainment, office facilities and information; facilitating operational tasks; personalised services; better integration of the departments and functions of organisations in order to provide better service.

With the increasing use of ICT, holiday booking channels have significantly changed. The following data clearly illustrate the shift in customer booking habits. In 2005 in the UK (one of the traditional markets where the use of travel agencies for booking holidays has a share that is among the highest in Europe, 90%), 21% of customers made a personal visit to a travel agent to make a booking, while in 2009 this percentage dropped to 13%. Almost 40% of customers made their holiday booking entirely by phone in 2005, and in 2009 only 25% of them made a booking over the phone. In the same period, holiday bookings through the Internet increased from 26% to 43% (MORI, as indicated by TUI, 2010).

Since new technology enables customers to find all sorts of travel and tourism information on the Internet, the role of travel agencies in providing information to their clients has significantly diminished, and in this respect they have lost part of their former function. As revealed by a recent representative survey of the holiday travel behaviour of Germans and German-speaking foreign nationals living in Germany, their travel-related attitudes, motivations and interests (Reiseanalyse, 2011), far more than half of all travellers nowadays use the Internet for holiday information prior to their trip. However, since the Internet and ICT have enormously increased the number of choices for customers (Buhalis and Law, 2008), there is no wonder that according to the RA survey their search is becoming rather extensive and time consuming. In 2010, people seeking information in relation to their holiday trip spent on average 9 hours online and visited 13 different websites trying to prepare for one holiday trip, and 25% of them even spent up to 25 hours online and browsed up to 50 websites (Reiseanalyse, 2011).

The threat that ICT poses for travel agencies in the sense that they might lose their role as travel intermediaries in an increasingly individualised and independent market actually represents a great opportunity for them. In their battle for survival, travel agents have been changing their role as mere facilitators of reservations of 'travel commodities' and are becoming *travel and tourism consultants* that provide customers with relevant information, products and services with added value, which only qualified experts can

secure for them. With customers becoming more experienced in travelling, and more used to searching for 'the best deals', travel agents might be losing the battle in terms of the simple facilitation of travel and as an intermediary of tourism-related services, but they are increasingly gaining importance when it comes to the sale of more complex and specialised travel and tourism products, since consumers value the professional advice and unbiased expertise and are ready to pay for this. This view is supported by research data from the USA market where travel agents sell 85% of cruising holidays, 70% of all tours and packages, 50% of all airline tickets (still!), 30% of hotel services, and 25% of all car rentals (PhoCusWright, 2008; ASTA, 2011).

Since travelling on holiday is of extraordinary significance in every person's life, nobody wants to ruin the best days of their year. Here, the changing role of travel agencies is already highly visible. They are moving away from being general providers of all sorts of travel and tourism services to becoming specialised travel consultants that not only save their customers' money, but also, and sometimes even more importantly, their valuable time. Travel agencies should become for their customers in the sphere of travelling what a family doctor is in the realm of their health protection. In this respect, travel agencies will need to raise even more awareness among customers of the benefits they can provide in comparison to the Internet. In order to use the Internet most effectively, one has to be able to look at it with professional eyes. However, customers are often price driven, and, without being aware of the hidden extras, in the end they might not find the best solution for themselves. In this respect, the business strategy of travel agents will increasingly need to follow the 'AAA model': *Advice* before the trip, *Assistance* during the trip and *After sale service* (ECORYS, 2009, p. 33). This will also result in a different structure of their revenue.

For many years, the largest share of a travel agency's revenue was generated from the commission earned by selling flights of various airline companies and/or by selling the package holidays of tour operators. The rule of 'zero base commission' imposed by airlines, coupled with direct online reservations and e-tickets, has drastically changed the revenue structure of many travel agencies. In the period from 2002 to 2011, the percentage of air ticket sales among ASTA travel agents dropped 23% and car rentals fell by 24% during the same period, while cruises, tour packages and hotel sales recorded strong increases of 18%, 13% and 24% respectively of sales for 2011 are projected (ASTA, 2011). Many travel agencies which could not adapt to the new business conditions under the rule of 'zero base commissions', and with the increased online direct distribution, by service providers went out of business because the revenue from other sources was not enough for them to

survive. In other words, they were not able to generate enough income from other services and to add value to the existing services for which customers felt was worth paying for. This has resulted in 'market clearing' in which low-level travel agencies went bankrupt and those that were able to adapt survived by specialising or integrating themselves horizontally, and by developing their own corporate identity in order to raise their profile in the market (Cooper *et al.*, 2008).

Despite all the challenges travel agents have been facing in the recent past, especially competition from online and other distribution channels, they still remain the dominant channel for the distribution of holidays for customers, thus proving that they are able to adapt to the changing needs of their clients and to the challenge of new technology. They are already serving their customers by using all kinds of different holiday organisation offers. What they provide for their customers can hardly be substituted by any software: Minimising the uncertainties of travel, providing customer protection, offering top quality professional consultancy, experience, competence and added value.

Although the structural change of organising holidays and bookings is evident, with online portals and with travel and tourism service providers increasing their share in the market, business practice shows that there are opportunities for both online and offline intermediaries to complement each other, or to work together in the market. However, it should also be stressed here that market analysis from the largest generating market in the world, Germany, already indicates that the extraordinary growth of web portals seems to be over, and those that want to grow will also have to invest heavily in technology and marketing. This leads to the conclusion that travel web portals are also reaching a turning point where they will have to switch from their purely e-intermediary role and assume the function of reliable travel organiser (FVW, 2011).

9.3. The Changing Role of Tour Operators

The main difference between a tour operator and a travel agency is that the tour operator functions as a wholesaler and the travel agency as a retailer. Fitting well into the concept of industrialised economies, tour operators have become one of the most powerful and influential parts of the modern tourism system. Using economies of scale and an enlarged scope of operation, tour operators have industrialised the organisation of holiday travel, and have significantly changed the previous forms of the tourism phenomenon, thus becoming synonymous with mass tourism. The tour operating business

started in Europe and has developed mostly in Europe. However, European tour operators have been important for the development of tourism not only in European destinations, but have also become very significant in the development of what are today well-known destinations in the Caribbean, Mexico and the Asia-Pacific region. Since tourism flows towards the Asia-Pacific region were primarily boosted by package holidays from Germany, the UK and, to a much lesser extent, Switzerland (EIU, 1994, p. 67), the European generating markets, at least at the beginning of their tourism development, were more important for that region than the intraregional markets.

The influence of tour operators in the development of the leisure travel market differs from country to country. So, for example, in the UK, tour operators may sell some 40 million packages, while in France this number does not exceed 8 million packages (ECORYS, 2009, p. 31). Nevertheless, even with this number, France offers significant market potential for tour operating companies. According to UNWTO data (2010), the markets of Germany, the UK, the Nordic countries, France, Belgium, the Netherlands, Austria, Poland, Switzerland and Canada represent over 45% of the world's leisure travel market expenditure. No wonder that tour operating companies have a major influence in organising holiday travel in these markets.

The structure of the market where tour operators dominate has significantly changed in the last two decades due to the strong process of horizontal and vertical integration powered by the process of the creation of a single European market, and the new business framework created with the signing of the General Agreement on Trade in Services (GATS), which has given plenty of opportunities to companies to penetrate outside their domestic markets and to engage in takeovers and acquisitions that have led to their internationalisation. Horizontal integration abroad has enabled tour operating companies to power their growth by increasing their market share outside their domestic markets. However, real strength has been gained through forms of vertical integration whereby tour operators have become integrated with charter airlines, accommodation facilities in tourism resorts, retail travel agencies, incoming travel agencies in receiving markets, insurance companies, rent-a-car companies, etc. This has helped them create a leisure travel value chain that can provide customers with a complex service from a single source (Čavlek, 2002). This has become of the highest importance for travel wholesalers for several reasons: First, the tour operating business is a very low net profit business (Čavlek, 2006), and vertical integration helps tour operators survive in a very competitive market by gaining profit not only from the tour operating business but from many other fields which supply components of the integrated product that the

tour operator sells (Čavlek, 2000a, p. 325); second, dwindling opportunities for growth within their own markets has pushed those concerns to expand to markets abroad and to strengthen their position in the global market; third, it enables leisure travel concerns to have quality control over the complex service provided (Čavlek, 2002a), thus also lifting customer protection to even higher levels; fourth, operators have lowered their business risks by securing risk dispersion through an increased geographic spread of their business operation; fifth, costs have been cut by the synergy effects of consolidation.

Therefore, when we nowadays analyse the travel and tourism intermediary market, we actually see the 'tourism industry'. From a highly fragmented business activity, the market has transformed into an increasingly concentrated multibillion dollar industry that is horizontally, vertically and diagonally strongly integrated where the companies involved apply in effect the rules of production of the industrial sector. The strategy of creating a leisure travel value chain has initiated a process of creating value in new forms and by new players, with the underlying goal of creating an ever improving fit between competencies and customers (Norman and Ramirez, 1993; Walters and Lancaster, 2000). This has been of enormous importance and has been used as an advantage in the battle with the growing trend of direct distribution by suppliers.

A short overview of different stages of consolidation processes can best illustrate the structural changes that have taken place in the European tourism market. It is interesting to note that among the top 10 tour operators in the 1990s only TUI has succeeded in constantly maintaining its leading position. At first, the battle was fought between two differently structured markets of organised travel: The German one led by the tour operating companies TUI and NUR, and the British one led by Airtours/My Travel and Thomson Travel. In this phase of the consolidation process, the leading German tour operators succeeded in taking control of the main generating markets of Continental Europe, and the leading British tour operators took control of the similarly structured markets of the Nordic countries and Ireland. However, everything changed once the German industrial conglomerate 'Preussag' entered the tourism field in 1998 by gaining majority ownership of the largest European tour operator, TUI, and the battle between the leading German and leading British tour operators grew fierce. At the same time, in this process of constant acquisitions, mainly abroad, tour operating companies grew into large multinational leisure travel concerns, horizontally and vertically highly integrated, thus becoming not only multinational but also multi-business companies. Their portfolios included tour

operating companies both in domestic markets and abroad, charter airlines, accommodation facilities in many tourism destinations, retail travel agency chains, incoming travel agencies in many tourism destinations, etc. As these leisure travel concerns provide very complex customer care, it has become very important for them to form integrated tourism concerns that work right across the travel value chain, providing distribution, tour operations, flights, accommodation, insurance, entertainment, excursions, etc., from a single source (Čavlek, 2002, p. 42).

The newly created travel and tourism giants did not stop there. They had appetite for one another. Already in 2000, the mother company of TUI bought the biggest British leisure travel concern Thomson Travel, while the second largest German travel group 'C&N' (the new name following the merger of NUR with the charter airline Condor) merged with the British company 'Thomas Cook' and retained the name of the latter. This acquisition enabled Thomas Cook to take second place in the European tourism market, pushing the British My Travel Group into third place. In 2007, the TUI AG tourism division merged with the UK-based fourth largest leisure travel concern First Choice, and TUI Travel PLC was formed. Almost at the same time, the Thomas Cook leisure travel concern merged with the My Travel Group and the Thomas Cook Group PLC was formed.

Thus, the market of organised travel in Europe is nowadays dominated and controlled by two main leisure travel giants, TUI Travel PLC, and the Thomas Cook Group PLC. However, it would be wrong to conclude that small tour operating companies ceased to exist in the European market. On the contrary, small companies that use their size and high degree of flexibility as a business advantage have been able to change their business model by specialising and offering services tailored to the specific needs of a narrow segment of demand. They also soon realised that this business model ensured them a higher profit margin than standard commodity packages. However, it has to be stressed that the business conditions for many small tour operating companies have become more challenging, especially with the process of consolidation that has resulted in 'market clearing'. Many 'me-too' tour operating companies without any differentiated and high quality products have not been able to compete with well-organised leisure travel concerns that have been able to make considerable investments in ICT, and so have crashed out of the market. Indeed, the business conditions for small players have deteriorated since the integrated leisure-travel concerns have created unfavourable conditions for the majority of small tour operating companies which have now limited access to distribution channels and to charter seats. Their negotiating power in the tourism destination can also not be compared

Table 9.1. Comparison between the two leading leisure travel concerns in Europe.

TUI travel (A public limited company)	Thomas Cook Group (A public limited company)
• No. 1 leisure travel concern in the world	• No. 2 leisure travel concern in the world
• 30 million customers	• 22.5 million customers
• £13.525 billion revenue	• £8.9 billion revenue
• Customers from 27 source markets	• Customers from 21 source markets
• Over 200 TO brands	• Over 30 brands
• Approx. 3,500 retail agencies	• Approx. 3,400 retail agencies
• Incoming agencies in 48 countries	• Data not available
• 143 aircraft	• 93 aircraft
• Approx. 170,000 hotel beds in 261 hotels	• Approx. 80,000 controlled beds
• Approx. 49,000 employees	• Approx. 31,000 employees

Source: Compiled from TUI Group — Investor Presentation, Deutsche Bank — German and Austrian Corporate Conference, Frankfurt. Available at http://ara2010.tuitravelplc.com [accessed on 1 June 2011], and Thomas Cook Group PLC. Available at www.thomascookgroup.com [accessed on 1 June 2011].

to the power of long established, well-financed and reputable leisure-travel concerns.

Table 9.1 clearly demonstrates the power that the two major leisure travel concerns have amassed in the intermediary leisure-travel market. The present data support the view that the giant leisure travel concerns operate and control not only their markets of origin, but through mergers and acquisitions they have become the leading and most influential tour operating companies in other source markets as well. The concentration of the tour operating business can best be illustrated by the following data: The market concentration of package holiday sales of *just two* leading tour operators in the UK market is 82%, in the Belgium market 87%, in the German market 54%, in Canada 60%, in the Nordic markets 55%, in the French market 38%, and in the market of the Netherlands 34% (TUI Travel PLC, 2010). The TUI leisure-travel concern alone claims to have a share of 35% of the entire European package holiday market.

Moreover, the process of consolidation in the European market has given those leisure travel concerns the power to dictate the rules not only in the generating markets where they have control over the chains of distribution, over fleets of aircraft, etc., but also in the tourism receiving markets where they nowadays own or control a significant number of accommodation facilities, cruise liners, incoming travel agencies and other

parts of the supply chain. A number of studies of the relationship between accommodation companies and tour operations in Mediterranean destinations (Bastakis *et al.*, 2004; Buhalis, 2000; Medina-Munoz *et al.*, 2003; Karamustafa, 2000) provide conclusions from secondary research or present empirical evidence of the influence and power of European tour operators in the accommodation sector in certain tourism receiving countries.

With such a constellation of power, it would be difficult to imagine that the leisure-travel concerns would allow their business to disappear from the market. The question naturally arises of how these leisure-travel concerns compete with the trend of the changing behaviour and demands of customers, independent travel, low-cost carriers and increased direct online distribution in the market. The answer might be that tour operators, too, have been changing and adapting their products, their marketing strategies and their organisational structures to the new business conditions. They have developed new business models and have been investing heavily in online distribution and are doing everything in their power to offer their customers the brightest possible range of travel and tourism related services, and are thus keeping their customers.

Although many still perceive tour operators as producers of 'off-the-peg' inclusive tours where everything is produced according to a similar pattern, from the means of travel, the time, manner and site of the holiday, to various holiday activities (Čavlek, 2000b, p. 299), due to the changing demands of customers and the new conditions brought about by ICT, the above-mentioned characteristics of package holidays are rapidly changing. Even the term 'mass market holidays', usually associated with many negative connotations, is no longer used by tour operating companies. They are sending the message that the mass market holiday product, traditionally known as the 'package holiday', has also changed. The new magic word for traditional package holidays is now 'mainstream holidays'.

Since even before the turn of the new millennium the market share of mass packages had reached saturation point (Čavlek *et al.*, 2010), in the following years the *mass market business model* slowly modified to become the *mainstream business model*. This business model still offers pre-packaged holidays, since there is still very considerable demand for this type of holiday. However, instead of sticking tightly to the fixed holiday components within the mass market business model, the leading tour operators have developed a mainstream business model for their 'pre-packaged' holiday offer which gives their customers more flexibility (in terms of travel duration, variety of other available options in flights, accommodation, types of transfer, etc.). TUI has gone even further with this business model, offering differentiated

and exclusive products that make the company stand out. These packages are also offered through mixed distribution channels, not just travel agencies, and are promoted increasingly by online multimedia in addition to the traditional holiday brochures of tour operators. Even more important to mention is that the implementation of this business model helps tour operators to increase their profit margins. In this business segment, the leading European tour operators also see great opportunities in the emerging markets of the BRIC countries (Brazil, Russia, India, and China). No wonder that TUI is already present in some of these markets.

Being aware that ICT and the Internet have dramatically changed the leisure market, tour operators have also transformed their business strategy into one that can best fit into the independent leisure travel segment, too. This is the segment where customers arrange their 'package' themselves, combining separate components of their holiday product, such as flight seat, hotel accommodation, rent-a-car, excursions at a destination, etc. Since market forecasts reveal that this segment of the market is expected to grow at a higher rate than the growth of the mainstream segment, tour operators have implemented *a model for the independent market* by which they actually 'unpackage' the components of a package holiday and give their customers the choice of booking and buying a single component or several separate components, for which the customers also see the prices of each component, or they offer them a 'self-packaged holiday', the latter known as *dynamic packaging* for which the client has an inclusive price. Dynamic packaging is not a new product. It is only a new tool that gives customers more 'freedom'. There are important benefits for the customers who use the dynamic packaging offer. Namely, the tour operator approaches the supplier as a wholesaler and can therefore negotiate much lower prices than the customer could get if he bought the same service directly from the same supplier. At the same time, the tour operator still gains a fair margin for itself. In this way, wholesalers secure for customers combined savings for a dynamic package and for separate components as well. Dynamic packages are usually sold online.

The leading tour operators in Europe already have their own well-developed direct-sell brands and they will continue to enhance their online distribution since they do not want to lose the benefits that the growing online market offers. Since independent travel even in 2010 represented one-third of the gross profit of TUI Travel (2010), it can be assumed that all tour operators will explore more opportunities to offer products for the growing independent leisure holiday market. However, distribution channels will be modified according to customer preferences in each tourism-generating market, which means that tour operators are likely to use a distribution mix,

using controlled traditional and online retail distribution networks, their own online distribution portals, and will surely develop new, more customer-friendly reservation systems.

9.4. Conclusion

The tourism market is becoming increasingly complex and, as presented in the case of travel and tourism intermediaries, demands greater flexibility to provide unique and special experiences. Naturally, this puts even more pressure on the management and marketing strategies of travel agencies and tour operators. Although independent travel, direct distribution by all service providers, and e-intermediaries have changed the structure of the tourism market, travel and tourism intermediaries will surely remain an important part of the tourism system.

Growing competition in the tourism market will lead to the closer collaboration of travel intermediaries and the providers of tourism services in destinations. Developments in the independent market of leisure travel suggest that travel and tourism intermediaries are increasingly using the advantages offered by ICT and that they have started to customise their products and tailor them to the specific needs of their clients. With the use of ICT, vertically integrated leisure travel concerns can more easily raise the quality of their products and services along the whole value chain, and thus improve their total performance.

The tour operators' constant search for innovation in order to earn higher profit margins has already led to tremendous structural changes in the tourism market. Consolidation processes across Europe have become the main mega-trend in travel distribution. The result is a less fragmented marketplace, innovative products and organisational structures, competitive cost advantage, new business models, new marketing strategies, etc. Although one might have expected that the concentration processes would lead to reduced choices in the products provided by travel and tourism intermediaries, the offer has never been wider, prices are even more competitive, and customer protection has increased. Thus, we cannot speak today of having less organised travel. Rather, we can speak of more innovative models of organised travel.

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Chapter 10

THE IMPORTANCE OF THE AIR TRANSPORT SECTOR FOR TOURISM

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Abstract: This chapter explores the importance of the transport sector for tourism with primary emphasis on air transport. Further to the introduction, Sec. 2 discusses the systemic relationship between the two sectors, applying, among other things, the characteristics theory of demand in the context of air transport and tourism. Section 3 then focuses on the airline industry examining alternative business models, including the low cost one. Section 4 examines developments in airports and their role as gateways to tourism destinations. Section 5 discusses the importance of information and communication technologies for air transport while Sec. 6 summarises and concludes by arguing that the strong interrelationship between the air transport sector and the tourism industry should be better understood by the authorities responsible for devising policies related to regional economic development.

Keywords: Air transport; airline; airport; business travel; leisure travel; ICT; tourism destination.

10.1. Introduction

The first decade of the 21st century presented unprecedented challenges for the tourism sector including the September 11th terrorist attacks; the wars in Iraq and Afghanistan; SARS; and more recently the global economic and financial crisis. Some of these adverse events set the foundations for a paradigm shift in tourism (Papatheodorou *et al.*, 2010) including the emergence of 'staycation', i.e., the switch to domestic tourism destinations or even the decision to spend holidays at home as many consumers decided to dramatically reduce their tourism expenditure after considering the consequences of the financial crisis upon their annual income. Still, the tourism industry has proven significantly resilient and is gradually recovering: Indicatively and according to the UNWTO (2011), 940 million

international tourism arrivals were recorded in 2010 (up from 882 million in 2009) accounting for 693 billion Euros (up from 610 billion in 2009).

Transport is a major component of the tourism product at both macro (i.e., related to the connection between the tourism origin and the tourism destination) and micro (i.e., associated with movements within tourism destinations) levels. In fact, these two sectors of the economy are structurally interdependent: The demand for transport is of derived nature, i.e., it exists because people want to go somewhere in order to engage in spatially constrained activities (including leisure and business tourism); conversely, transport accessibility determines to a great extent the demand for a tourism destination (Papatheodorou, 2008). In fact, the vast majority of international visitors travel for tourism purposes. According to the UNWTO (2011), 51% of the 2010 inbound tourism flows were attributed to leisure, recreation and holiday purposes; 27% to visiting friends and relatives, health, religious and other reasons; whereas 15% of inbound tourism flows were associated with business and professional reasons.

There are numerous examples of natural catastrophes and incidents of political instability that caused a significant decrease in transport and tourism traffic flows in the past. For example, the terrorist attacks in 2001 and more recently the 2010 volcanic eruptions of Eyjafjallajökull in Iceland proved detrimental in the short term for both tourism and transport sectors, especially air transport. In addition to such unexpected incidents, tourism flows and transport demand experience seasonality phenomena related, among others, to factors such as climatic conditions, different types of events, happenings and exhibitions, work and school vacations (Butler, 2001). In fact, the non-storable nature of the tourism and transport services is the reason behind the need for an accurate and flexible planning of operations since there are peak and off-peak periods where transport services should be available but in varying frequencies. Supply and capacity levels have to be carefully planned in advance since it would be rather unbeneficial or, at least less profitable, for transport operators if they fail to meet the demand for their services. All cost and supply variables should be explicitly considered to ensure that both operating and fixed costs are at least covered from the revenue side. Furthermore, the overall planning process should cover an extended period of time (i.e., at least one year) since off-peak and peak periods share the same fixed cost elements such as rents and salaries. Price discrimination combined with an appropriate promotion policy is of major importance to achieve market clearing at profitable levels of production (Page, 1999).

Air transport is a par excellence tourism sector with a related ratio exceeding 90% (Smith, 1998). The sector is an inseparable part of the economic, social and regional development of a country because it is both directly and indirectly involved in many aspects of modern societies, including tourism. According to the UNWTO (2011), 51% of the inbound tourists arrived at their destination by air while the rest travelled using road (41%), water (6%) or rail transport services (2%) in 2010. The air transport sector experienced remarkable changes over the last three decades including a radical overhaul of business practices as a result of changes in demand and supply conditions — among other, market deregulation and liberalisation played a significant role in shaping the new paradigm in air transport (Doganis, 2005). The last decade proved very turbulent for the sector but in any case, 2010 was an exceptionally good year profit-wise for the airline members of the International Air Transport Association (IATA) industry at an absolute level (with a profit of 18 billion US dollars) despite a mediocre profit margin of 3.2% (Bisigniani, 2011). This chapter will further highlight the importance of air transport and tourism. Section 2 discusses the systemic relationship between the two sectors, while Sec. 3 focuses on the airline industry. Section 4 examines developments in airports and Sec. 5 focuses on information technologies while Sec. 6 summarises and concludes.

10.2. Air Transport and Tourism: A Structural, Systemic Relationship

The importance of air transport for tourism is proportional to the distance between the origin region and the destination since the majority of the modes of transport cannot support a long haul transfer service in a comfortable and time-saving way. In fact, as distance increases passengers are more likely to be travelling by air for business and leisure purposes. Usually and from a time perspective, surface transport modes cannot adequately serve travellers heading for international and intercontinental destinations. In addition, land travel is also associated with a number of 'hidden' costs including en route costs for accommodation, catering and road tolls. For all these reasons, the air transport system has exerted a profound effect upon the growth of the tourism industry and destination development. Technological advancements in the air transport sector, the size of the airline networks and the routes operated in conjunction with the appropriate pricing and promotional strategies are some of the factors that played an important role in the establishment and growth of new destinations and attractions. Based on Bieger and

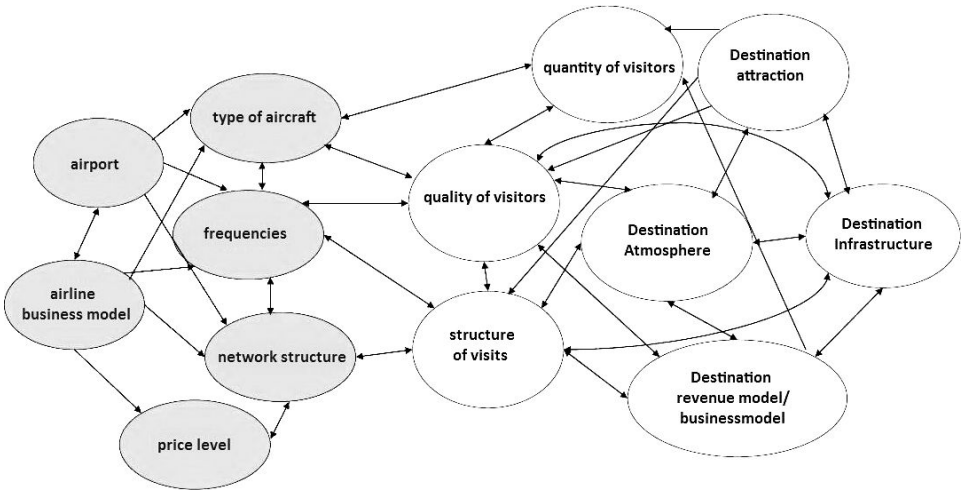

Fig. 10.1. Interdependence of air transport and tourism.
Source: Based on Bieger and Wittmer (2006).

Wittmer (2006), the mutual interdependence of the two industries is highlighted in Fig. 10.1.

The left part of Fig. 10.1 with the elements shown in grey refer to the air transport sector while the right part is associated with the tourism industry and the leisure destinations. There is a strong interdependence, both direct and indirect, between the elements that determine the main aspects of the two sectors in question. Technical and economic factors affect the operations of the entire air transport sector while social, environmental, political and economic characteristics of a destination or a country influence the pillars in the right side of Fig. 10.1. In particular, the airline business model (i.e., full service, charter, low cost — to be discussed later) and the available airport infrastructure determine the type of aircraft, the frequencies, the routes and the pricing strategy to be followed. From a systemic approach the type of aircraft is directly related to the quantity and quality of visitors, while the frequency of services and the structure of the route network shape the temporal and spatial configuration of tourist visits and vice versa. The latter are also directly affected by the attraction, infrastructure and ambience characteristics of a tourist destination. As far as the transport industry is concerned, the economic situation in the origin country is strongly related to the quality and reliability of the transport services while the respectively prevailing economic conditions in the tourist destination (country or region) determine the existence of sufficient levels of infrastructure and the capacity to maintain it.

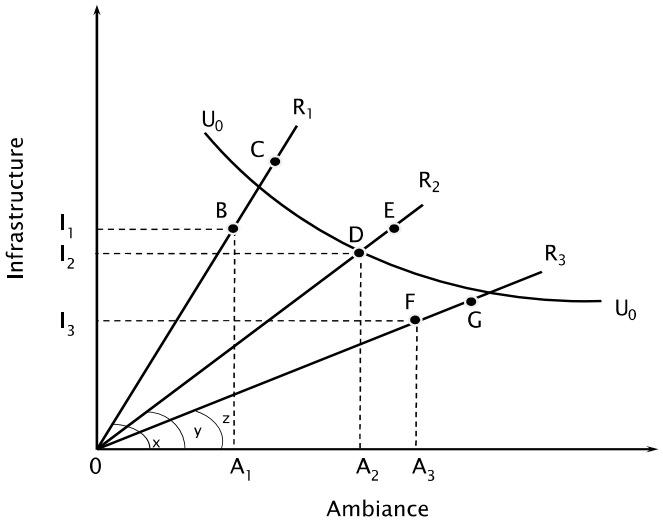

Fig. 10.2. Air transport, tourism and the characteristics framework.

The structural interdependence between air transport and tourism may also be highlighted by using the so-called characteristics theory of consumer demand originally developed by Lancaster (1966, 1971) and Gorman (1980) and effectively applied in tourism by Rugg (1973), Morley (1992), and Papatheodorou (2001). A detailed exposition of the theory is provided in Stabler *et al.* (2010). For the purposes of this chapter, however, a brief graphic representation is sufficient based on Fig. 10.2.

In particular, the tourist is supposed to consume two bundles of characteristics; those related to the tourism ambience of a destination resulting from its natural and built attractions and overall atmosphere (measured on the horizontal axis); and those associated with the available tourism infrastructure in terms of airports, hotels, restaurants and ancillary services (e.g., hospitals), measured on the vertical axis. Consumers face two major constraints, i.e., the budget but also a time constraint, which limit the total quantity of characteristics that they can buy and enjoy by spending their money and vacation days in resorts R_1, R_2 and R_3. More specifically, R_1 is infrastructure-intensive while R_3 is ambience-intensive (as shown by the slopes of the characteristics rays OR_1 and OR_3 where $x > z$) while R_2 lies in the middle. Consumer choice is assumed to be discrete (i.e., the tourist can only travel and stay at one resort at a time). Based on the (notional) budget constraint, the tourist may at a maximum consume bundles B, E, and F in resorts R_1, R_2 and R_3 respectively; accordingly and based on the time constraint (which is related to the duration of the journey and the

local stay), the tourist may at a maximum consume bundles C, D, and G. Hence, the effective (binding) constraint is given by bundles (also known as vertices) B, D, and F. Given the map of indifference curves represented by curve U_0U_0 and based on non-linear programming maximisation techniques, the tourist chooses resort R_2 consuming vertex D, which corresponds to a quantity of A_2 tourism ambience characteristics and a quantity of I_2 tourism infrastructure features.

Based on the above theoretical framework, it can be easily deduced that the role of transport in resort choice is multi-fold. First, an improvement (deterioration) of transport accessibility to a specific resort results in a shift of its vertex associated with the time constraint, i.e., point C, D, or G to the right (left) as the journey time is reduced (increased). Hence, the initiation of direct flights to a tourist resort may increase its competitiveness vis-à-vis other tourist destinations even if no changes occur in the ratios or quantities of characteristics 'produced' on a daily basis. Second, the pricing of transport services has a direct effect on the budget constraint, i.e., on vertices B, E, and F. Consequently, lower fares as a result of the emergence of low cost carriers (LCC — to be discussed later) will shift the vertices to the right whereas conversely, the creation of an (air) transport cartel, which abuses its dominant position in the market, will shift the vertices to the left *ceteris paribus*. Third and based on the concept of the generalised differential costs which considers the substitution between cost and time (Quandt, 1970), as global income rises people become more time-sensitive and opt for faster transport modes (i.e., they travel by air or high speed trains where available) at a macro level leaving surface transport (e.g., car rental) only for the micro level. In other words, an increase in economic prosperity will result in a rightward shift not only of the budget but also of the time vertices provided that the increased affluence is not achieved to the detriment of available leisure time. If vertices shift in a parallel manner, then the relative competitiveness will not change. Otherwise, and considering the impact of the two previous arguments, the resort which manages to receive competitively priced direct flights will benefit most. Fourth, an increase in resort competitiveness as a result of the above transport enhancements may lead to a new cycle of investments in the specific resort, which will then be endowed with increased infrastructure (and possibly also ambience) characteristics. A self-reinforcing mechanism of competitiveness then emerges unless (or until) the destination becomes a victim of its own success due to environmental degradation and other emerging problems as depicted in the Tourism Area Life Cycle model (Butler, 1980; Papatheodorou, 2004).

In addition to the above-mentioned direct relationship between the aviation and the tourism sector, air transport is also indirectly related to the leisure industry through several other aspects of the modern economic environment. For example, the air cargo services facilitate the global commercial activity through the unhindered access to international markets with backward and forward linkages to the tourism product. Air transport offers the tourism industry the opportunity to enjoy the positive consequences of scale economies arising from increased quantity demanded. On these grounds, the air cargo services reduce the average delivery time rendering business transactions more reliable, faster and cheaper. Several obstacles related to the surface supply chain process (e.g., strikes, extreme weather conditions) can thus be avoided. This is very important for the tourism sector where inconsistency in the logistics mechanism and shortage of products, fuel or delays and cancellations of arrivals may cause severe problems in (remote) tourist destinations (Doganis, 2010).

10.3. The Airline Sector: From Flag Carriers and Charter Airlines to the Emergence of the Low Cost Phenomenon

Until the late 1980s, traditional scheduled carriers dominated the air transport market worldwide with the exception of summer sun leisure routes in Europe where the majority of passengers were carried by charter and non-scheduled airlines. In spite of the existence of surface modes of transport offering access to leisure destinations, the leisure carriers provided a reliable, secure and time-saving service and hence, they were preferred by many tourists. In the case of conventional airlines the typical aircraft seat configuration comprised a first, business and an economy class characterised by notable differences in the quality of service (in terms of seat pitch, inflight catering, ground services and other amenities) and fare levels (Doganis, 2010). In many cases, the traditional carriers were operating as government agencies and were considered, in an indirect but quite fundamental way, to be ambassadors of their home countries encouraging both domestic and international tourism mobility (Fleming and Hayuth, 1994). As a result of the recognition of the role of air transport services for the tourism sector's prosperity, there were many examples of governmental support to air carriers in the form of subsidies and/or tax-exemption policies. Routes that were originally developed mainly for political reasons, turned out to be providers of access to major leisure destinations and revealed the rising importance of leisure-travel demand. Consequently, several traditional airlines attempted

to adapt their operational structures primarily to satisfy the leisure demand for air transport services in cases where business-related routes proved less profitable.

Still and until the late 1980s, charter carriers prevailed in the European leisure market. These airlines accounted for a major part of air transport leisure activity by offering a low cost service as part of a bundled holiday package. In fact, by actively pursuing the vertical integration of the leisure product in the 1970s and 1980s, the major British (e.g., Thomson) and German (e.g., TUI) tour operators of the time acquired majority stakes or even fully owned charter airlines in order to avoid double marginalisation, rationalise costs and seek an optimal profit strategy. The *ad hoc* nature of the charter transportation service ensures direct connection to leisure destinations avoiding transit flights while the high load factors achieved result into substantial unit cost reductions. Furthermore, leisure travellers are not usually interested in expensive, high quality transport services but prefer safe and trustworthy airlines offering a basic but much cheaper product. Moreover, leisure passengers often organise their vacation trips well in advance. These characteristics increased the demand for charter airlines supporting the tourism development of many destinations in the Mediterranean region. Seasonality though is a feature of high importance for the charter airlines since there is a significant variation between the overall demand levels observed during the summer and the winter months respectively. To deal with this problem, some European charter airlines used to lease their aircraft for short-term periods to airlines servicing areas facing reverse seasonality (e.g., in the Caribbean) whereas more recently a number of carriers (with suitable aircraft types) have introduced long-haul routes from Europe to remote winter sun destinations. Another way for European charter airlines to deal with low load factors during the winter period is to focus on the winter sports market servicing ski resorts in Europe and elsewhere.

In spite of the relative freedom faced by charter airlines in their niche market, it should be noted, however, that overall and until the late 1970s (in the USA) and late 1980s (in Europe) the airline business environment was characterised by great inflexibility and heavy economic regulation aiming to protect the traditional incumbents by raising institutional barriers to entry and severely constraining competition in prices and other dimensions. Protectionism also prevailed at an international level where air services were regulated by restrictive bilateral agreements aiming at boosting the revenue of flag carriers. In many cases, these regulatory policies proved detrimental for tourism development as a result of high fares and low levels of service quality (Papatheodorou, 2002).

Inspired by a fast-track domestic market deregulation process introduced in the USA in 1978, the liberalisation of the air transport market in Europe started in a slow pace in mid-1980s and was brought to completion ten years later. In particular, the *First Package* of measures was introduced in 1987. Among others, this first step included a framework granting some pricing freedom to airlines participating in the market. In June 1990, the *Second Package* became a reality with only marginal changes, however, compared to the first one. In 1993, the *Third Package* was introduced based on three interrelated pillars. The first one referred to free market entry and exit in the European airline market, including full cabotage rights from 1997 onwards: As a result, every European carrier is now free to operate within the European Common Aviation Area (the equivalent of the Single Market in the aviation sector) connecting any two points in the European Union even if those lie within a third country. For example, Lufthansa is now free to operate between London and Edinburgh or between Lyon and Milan. The second pillar of the *Third Package* extended the pricing freedom granted previously, whereas the third pillar focused on the harmonisation of the procedures followed across Europe with respect to licencing and certificates of airworthiness (Doganis, 2005). Since the late 1990s, the European Union and also other developed countries in the world including the USA, Australia and Canada have actively sought to change the restrictive international aviation framework by signing 'open skies' agreements either at bilateral or at a multilateral level. The creation of the Open Aviation Area between the European Union and the United States in 2008 is possibly the most important agreement of this kind to date (European Commission, 2007).

The relaxation of the various market impediments in domestic and international air transport markets helped new entrants join the sector increasing total supply and stimulating competition. In many cases, this resulted in the amelioration of the quality of services provided and/or the decrease in the level of fares with positive repercussions on transport accessibility and tourism destination competitiveness. The radical changes that were introduced into the airline sector made the development of new practices and policies inevitable for the airlines. LCCs, also known as no-frills emerged taking advantage of the new air transport *status quo* and developed new pricing formulas and price discrimination strategies. In particular although there is no single definition for an LCC, this term is widely used to refer to the operational model of airlines that have adopted aggressive cost cutting policies in order to minimise their air fares.

Nowadays most passengers are able to distinguish a conventional airline (e.g., Lufthansa, Qantas, American Airlines) from a LCC (e.g., Ryanair,

Air Arabia, Air Asia). Lawton (2000) argued that a typical LCC has a single class aircraft configuration; inflight catering and other on-board services are only offered at an additional cost; and sales are promoted using distribution channels other than the traditional ones (e.g., travel agents). In many cases, the LCCs manage to cut costs by focusing on point-to-point services instead of operating based on a hub-and-spoke network as most traditional airlines do. Moreover, no-frills carriers usually fly from and/to regional, less congested airports bypassing busy and expensive hubs. Decentralised airports offer faster turnaround times, lower airport fees and possibly more customised services. Furthermore, the introduction of paperless tickets (e-ticketing process) by LCC resulted in substantial savings in costs and time. With respect to their market positioning, the LCCs mainly introduced destinations that were already included in the flight schedules of incumbent airlines, but they used aggressive policies to raise their market share. Furthermore, LCCs became quite popular among the leisure travellers while several remoter regions that were previously oriented towards the domestic market gradually became popular international destinations: Carcassonne in France, served by Ryanair, is a good example (Palaskas *et al.*, 2006).

To face the LCC menace, many traditional airlines have been trying since the early 2000s to incorporate operational 'no-frills' elements into their business model without, however, degrading their product (at least to a significant degree). This development makes the distinction between traditional carriers and LCC increasingly blurred. Several conventional airlines created LCC subsidiaries (e.g., British Airways and Go; Qantas and Jetstar) to enlarge their market share albeit not always successfully. Moreover, smaller flag carriers in Europe (e.g., Austrian Airlines, Olympic Airways) started facing financial problems and rigorous competition from several mega-carriers (e.g., Lufthansa) that were trying to dominate on routes no longer protected by restrictive bilateral agreements. Holding majority stakes in airlines turned out to be an expensive strategy for many governments: The new, liberalised environment in the aviation industry strengthened the trend towards privatisation by keeping air carriers away from state aid and putting increased pressure upon them to become profitable and financially transparent (Zenelis, 2011).

Spain is a successful example of tourism development founded on enhanced air transport accessibility. The dramatic growth in the leisure traveller flows has been mainly the result of increased transport activity of both charter airlines and LCC. After experiencing a two-decade period (i.e., from early 1950s to late 1960s) of conventional airline dominance, the

Spanish tourism policymakers decided to liberalise the charter airline market consenting to a regulation-free access of this type of leisure air transport. Germany and the United Kingdom became the main origin countries of charter airlines operating to several leisure destinations across the Iberian Peninsula. By the 1970s, the growth in the number of routes between Spain and Northern Europe was so high that made Spain the most representative cheap and value-for-money leisure destination in the Mediterranean region. As a result, the Spanish tourism industry experienced a noteworthy growth rate that led to significant earnings over time through profit reinvestment. This tourism urbanisation process paved the way for the subsequent rise of LCC in popular Spanish tourism destinations such as the Balearic Islands, the Costa del Sol and the Costa Brava. The Spanish government was aware that the liberalisation of the Spanish skies could potentially harm domestic carriers but acknowledged that the cumulative net benefit for the Spanish economy emerging from tourism development would be much greater. Interestingly, Spanish conventional carriers (with Iberia being the most notable example) followed business reengineering strategies to survive in this increasingly competitive environment (Zenelis, 2011).

According to the 2011 Travel & Tourism Competitiveness Report (WEF, 2011), Spain ranked eighth among 139 countries in the travel & tourism competitiveness index. Moreover, Spain also ranked eighth in the air transport and tourism infrastructure categories. As far as the sub-categories of the air transport infrastructure pillar are concerned, Spain ranked sixth in the number of operating airlines; seventh in international and 10th in available seat kilometres. The Travel & Tourism Industry's contribution to the Spanish GDP was estimated at 92 billion US dollars (5.9% of total GDP) with 1.3 million employees working in the sector (6.8% of total workforce); while the respective numbers for the Travel & Tourism Economy as a whole (i.e., when indirect and induced effects are also taken into consideration) were US $238 billion (15.3% of total GDP) and 3.21 million jobs (17.1% of total workforce). Although Spain may be considered as a very good example of using liberal air transport policies to pursue tourism development, this does not obviously mean that Spanish tourism growth has always been on a sustainable path; there are many cases where Spanish resorts (e.g., in Mallorca) have become victims of their own success as a result of congestion and environmental degradation (European Commission, 2000). In fact, Spain may be able to deal with such problems as a result of its large spatial scale and financial power. However, this may prove a more challenging situation for small European countries, such as the island states of Malta and Cyprus.

Papatheodorou and Busuttil (2003) examined the implications of air transport liberalisation for Malta and Cyprus showing that the development of LCC routes could lead to a substantial increase of tourism flows with potentially serious impacts on their fragile flora and fauna. Moreover, both islands (especially Malta) depend on desalination as their water reserves are inadequate, while a number of resorts are close to their level of carrying capacity (Papatheodorou, 2011). Having the above in mind, and although air transport liberalisation may prove beneficial, tourism policymakers are urged to undertake environmental impact assessment exercises to counter any potentially negative side-effects.

10.4. Airports as Gateways to Tourism Destinations

The key purpose of an airport's existence is to ensure safe and reliable air transport operations for both passengers and freight. The variability of preferences of different types of airlines and passengers makes the strategic market positioning of an airport an extremely demanding task for its management team. Each group of clients is important for the viability and prosperity of an airport. Hence, the quality of its services should exceed expectations to increase the chances of securing cost-effective levels of business activity (Graham, 2008). One of the major concerns that an airport has to face is safety, especially after the September 11th attacks. Passengers should feel safe and secure in an airport to choose it as their gateway to the final destination. The safety and security procedures applied in an airport concern both the airside and the landside areas. There is always a grey boundary and a trade-off between proper security procedures and a customer service of seamless quality. Sometimes a discomforting and excessive use of security procedures discourages travellers from choosing an airport for their transfer. The realisation of this sensitive issue is a major concern for an airport's management authorities, the airline companies and the tourism industry's business units.

In any case, airports and tourism are structurally interdependent as the former exist because the airlines use their facilities to offer transport services to passengers the majority of which travel for tourism purposes. The airport environment and facilities are considered to be inseparable parts of the tourism industry as they shape the first and last impression of a passenger's tourist experience. On these grounds, the airport facilities have evolved into an experience for different types of passengers: Modern airports are not just intermodal transport platforms but a place of commercial activity, a component of the holiday package that could contribute to a better leisure

experience (Papatheodorou and Lei, 2006). In many airports around the world, both domestic and international, there are several traveller-oriented services such as hotels, restaurants, conference and exhibition centres, shopping malls, car-rental and car-parking facilities, travel agencies, casinos, hospitals, churches, fitness centres, cinemas to enrich the travel experience and help passengers spend waiting or transit hours in a more entertaining and relaxed way. These types of services are mostly leisure traveller-oriented since non-business travellers have more stress-free travel plans making them big spenders at the airport, especially on the return part of the trip, just before the departure (Graham, 2008).

The importance of airports for the local economies, especially of those located near leisure destinations, is so high that their operations are often supported or even subsidised by local authorities and tourism associations either directly or indirectly. In fact, the dependence of local economies upon air transport services, especially when tourism is the major source of income, can be so strong that the local authorities experiencing competitive pressures from neighbouring regions interested in attracting air carriers (especially LCCs with Ryanair being a notable example) may provide tax exemptions and other incentives to them. Neighbouring regions are interested in giving concessions to air carriers to attract them. However, as stressed by Stabler *et al.* (2010, p. 151) '. . . this intensification of regional competition may result in a zero sum game, where the sole beneficiaries are the airline companies. The problem is even more serious when the likelihood of flow diversion or even complete airport abandonment is considered. . . as the abandoned areas lock in people and infrastructure with potentially detrimental financial and social results'. For this reason, policymakers should strive to convert the airport-tourism nexus into a win–win rather a win–lose situation.

10.5. The Importance of Information & Communication Technologies in Air Transport

The evolution of aviation technology has significantly extended the aircraft flying capacity and improved fuel consumption efficiency over the last 50 years. As a result there has been an overall quality upgrade of the transport services and a reduction in the general level of air fares to the benefit of tourism development. More recently, however, the applications of information and communication technologies (ICT) have also become very important for the unobstructed functionality of airlines and airports facilitating significantly their operational procedures. It is not only the huge information volumes concerning travellers, aircraft, ground handling services and

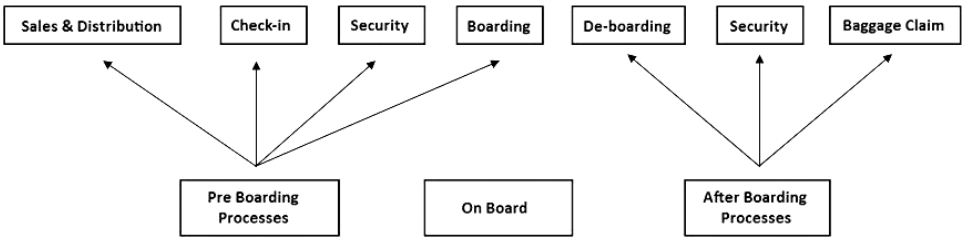

Fig. 10.3. ICT applications used by travellers before and after boarding.
Source: Based on Sigala (2008).

staff coordination that necessitated the development of ICT but also the need for an uninterrupted sharing of this information in real time among several organisations that contribute to an adequately functional aviation and tourism industry (Sigala, 2008; Stabler *et al.*, 2010). Furthermore, the increased need for high security standards together with the constant rise of passenger volumes have rendered important the expansion and customisation of ICT tools especially in the airport business environment.

The majority of ICT applications in air transport have a direct or an indirect effect on customer satisfaction and the overall tourism experience. Figure 10.3 presents schematically the main ICT air transport applications used by travellers. These applications are directly related to the transport experience of a passenger since there are numerous electronic systems that are not presented here and are designed to support the sales and distribution system, the check-in functions etc.

The first step towards a holiday break or a business trip is booking a ticket to the destination in question. Electronic booking and ticketing is considered to be one of the most important ICT applications in air transport. It enables the passenger to organise their trip details and increases price transparency as the traveller becomes aware of the overall cost for the transport services. This situation helps people determine the proportion of their budget that is available for spending in the final destination. E-ticketing is also an important tool for the airlines since it enables them to create a huge information database on a real time basis which is of great value for their sales strategy, the load factors and the effectiveness of their price discrimination policies. In fact, the airline management teams can now easily redefine, at their discretion, their pricing strategies if actual data reveal a divergence from an airline's targets. Disintermediation is also achieved as the development of a direct sales network between the airline and the passenger bypasses the need to rely on travel agents and reduces the distribution cost

and hence the overall fare level (Buhalis, 2006). Furthermore, the development of biometric applications of ICT across the entire air transport business was an important advance, especially in the context of new passports. Leaving the protection of personal data aside, such applications aim at smoothing security control practices, which can now become less time-consuming and discomforting for the passenger. As a result, the latter can now spend more time and possibly money at the airport and/or the tourist destination.

10.6. Conclusions and the Way Forward

This chapter aimed to explore the importance of the transport sector for tourism development with primary emphasis on air transport. The contribution of aviation lies in its ability to offer transfer services of high quality to passengers travelling on both business and leisure across the globe. Air transport has changed the spatial aspect of access to remote destinations since any trip in the world can now be measured in terms of hours spent on board. Aviation policies and government decisions concerning the smooth cooperation of tourism and aviation can make a big difference in the prosperity of a leisure destination. It is difficult for tourism to thrive without reliable aviation services since both inbound and outbound travel flows and tourism mobility are sometimes severely constrained by surface or water transport services. The contribution of commercial airlines to the rise of international tourism was mainly a result of the increased level of accessibility through the creation of an efficient operational network. The management teams of the major players in the air transport sector, i.e., airlines and airports, should actively participate in the planning process and the determination of a destination's or a region's strategic development policies, as their contribution and reliable supply of transport services is considered to be of high importance for the successful application of the strategies in question. In the present business environment characterised by uncertainty in a liberal setting, co-opetition (i.e., the combination of competition and cooperation) seems to be the way forward for tourism service providers and destinations. In this context, the strong interrelationship between the air transport sector and the tourism industry should be better understood by the authorities responsible for devising policies related to regional economic development.

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Chapter 11

TECHNICAL PROGRESS IN TRANSPORT AND THE TOURISM AREA LIFE CYCLE

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Abstract: Richard Butler's tourism area life cycle envisions tourism destinations to evolve in stages from exploration to rapid growth followed by slackening, stagnation, and even decline. The eventual slow-down in tourism growth is attributed to the destinations reaching their physical and social carrying capacities. This chapter examines the evolution of Hawaii as a tourism destination from 1922 to 2009. We demonstrate that tourism growth in Hawaii has declined not because the destination has reached its carrying capacity but primarily because of slowing technical progress in passenger air transportation and competition from newer destinations. We conclude that for destinations that depend on transportation improvements to attract tourists, technical progress in transport may provide a better explanation of the evolution of their destinations than their carrying capacities.

Keywords: Technical progress; tourism area life cycle; transportation.

11.1. Introduction

In 1980, Richard W. Butler published his now classic article in the *Canadian Geographer* in which he adapted the concept of the product life cycle from the marketing literature to describe the evolution of tourism destinations (Butler, 1980; Butler, 2006a, pp. 4–9). As with new products, Butler posited that destinations typically go through several stages from commencement to rapid growth and maturity and ultimately to possible decline when

‡Andrew Kato wrote this article in his personal capacity. Any opinions, findings, conclusions, or recommendations expressed in this article are those of the authors and do not necessarily represent the views of the Bureau of Labor Statistics or the US Government.

the destination's carrying capacity is exceeded by the arrival of too many tourists. Butler wrote (Butler, 2006a, pp. 4–5):

> 'The pattern which is put forward here is based upon the product cycle concept, whereby sales of a product proceed slowly at first, experience a rapid rate of growth, stabilise, and subsequently decline; in other words, a basic asymptotic curve is followed. Visitors will come to an area in small numbers initially restricted by lack of access, facilities, and local knowledge. As facilities are provided and awareness grows, visitor numbers will increase. With marketing, information dissemination, and further facility provision, the area's popularity will grow rapidly. Eventually, however, the rate of increase in visitor numbers will decline as levels of carrying capacity are reached. These may be identified in terms of environmental factors (e.g., transportation, accommodation, other services), or of social factors (e.g., crowding, resentment by the local population). As the attractiveness of the area declines relative to other areas, because of overuse and the impacts of visitors, the actual number of visitors may also eventually decline'.

The stages through which it is suggested that tourist areas pass are illustrated in Fig. 11.1.

Butler's article has spawned an entire industry devoted to the interpretation, critique, and suggestions for improvement to the tourism area life cycle (TALC). The publication of two volumes of essays on the subject in 2006 by prominent tourism scholars, and edited by Butler (2006a, 2006b), provide a rich sample of the vast literature on the TALC.[1] To date studies on the TALC largely have been authored by geographers. Very few empirical studies have appeared primarily because lengthy data series on tourist arrivals for individual destinations are scarce.

11.2. Economics Literature on the Life Cycle of Industries and Implications for Tourism Destinations

Economic historians have been conducting empirical analyses of industry life cycles from at least the 1930s, among the most notable include Nobel

[1]A count of the articles published between 1980 and 2003 and cited in these essays that contained either "the tourist area life cycle" or "destination life cycle" in their titles totalled nearly 70. A literature review by Richard Lagiewski (Butler, 2006a, Ch. 3) of the "major works" on the subject contained over 50 articles.

Laureate Simon S. Kuznets who published his *Secular Movements in Production and Prices* in 1930. Kuznets wrote (1930, p. 1):

> 'As we observe the various industries within a given national system, we see that the lead in development shifts from one branch to another. The main reason for this shift seems to be that a rapidly developing industry does not continue its vigorous growth indefinitely, but slackens its pace after a time, and is overtaken by industries whose period of rapid development comes later. Within any country we observe a succession of different branches of activity leading the process of development, and in each mature industry we notice a conspicuous slackening in the rate of increase'.

Kuznets fitted curves to output data for manufacturing and extractive industries from five industrial countries and found that industries tended to experience slower rates of growth over time.[2] He attributed the retardation of an industry to several factors: (1) the slackening of technical progress,

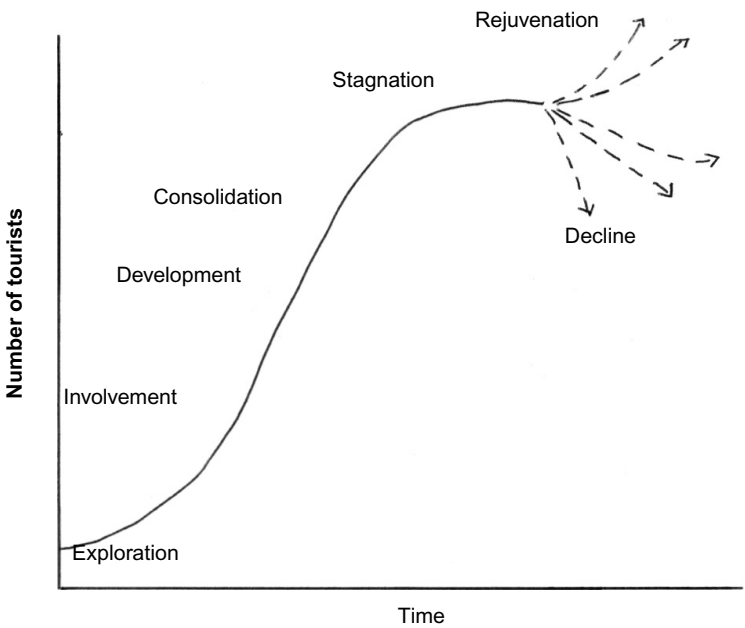

Fig. 11.1. Butler's hypothetical tourism area life cycle.
Source: After Butler (1980).

[2]Kuznets (1930, pp. 324–325) found the simple logistic curve to provide the best description of the long-run trend.

(2) retardation of (other) industries which supply it with raw materials or complementary goods, (3) decrease in available funds for further expansion, and (4) competition from the same industry in a younger country (Kuznets, 1930, pp. 41–53). He explained that all four factors are related to technical change and its eventual slackening.

Four years later in 1934, Arthur F. Burns published his parallel work, *Production Trends in the United States Since 1870*. Burns reached the same conclusion as Kuznets. Like Butler, Burns (1934, pp. 172–173) suggested that the life cycle of industries can also be divided into 'stages' — the nascent stage, the maturity stage, and the decadence stage — and that they differ in duration and intensity from industry to industry. He analysed statistically the outputs of 142 industries in the US since 1870 and found (p. 118) that '(r)etardation has taken place in a preponderant number of the industries covered in our survey'. His study also included a few declining industries. He found (pp. 160–162) 'decadent industries' tend to show slower rates of decline after some period of decline rather than accelerating into extinction. He then surmised (p. 162) that 'a structural change' might take place in a declining industry 'which once rejuvenated — would embark on a new career of rapid growth and retardation'.

More recent economic studies on the industry life cycle (e.g., Klepper, 1996; Jovanovic and MacDonald, 1994; Klepper and Graddy, 1990; Gort and Klepper, 1982) take an industrial organisation approach and focus on firm entry and exit and the total number of firms over the life cycle of an industry. Their findings also support the earlier work by Kuznets and Burns. The typical life cycle of an industry is described as follows: A young industry begins with only a few firms producing many different versions of the industry's product. The new firms were initially established to take advantage of a product innovation. With few competitors, high prices prevail and profits rise, inducing entry of new firms. The increase in the number of firms results in dramatically higher total output and lower prices. Rising output and declining prices also stem from falling costs of production attributable to both improvements in production processes and economies of scale. Output continues to grow but the annual rate of growth of output, as well as the rate of decline in prices, eventually slacken inducing some firms to leave the industry. However, it is not uncommon for an industry to depart from the general pattern of a fall in the percentage rate of growth in its output and the percentage rate of decline in its prices at some time during its history. In the long run, only firms with sufficiently low cost and/or high product qualities survive.

Technical progress is seen by economists to play a crucial role in the life cycle of industries as it can affect both the demand for and supply of commodities. Innovation that leads to the development of a new product creates new demand, and improvements to an existing product increases the demand for it. On the supply side, technical progress that reduces production costs leads to lower product prices resulting in greater quantity demanded. As technical progress slows, so does the growth of the industry.

Assuming that tourism destinations can be viewed as industries, these studies suggest the following stylised profile of evolution for tourism destinations. First, over the course of a destination's life, it can experience more than one cycle of growth and retardation. Second, each cycle has an approximate beginning initiated by a major technical break-through or 'structural change', a period of rapid growth followed by slower growth, maturation, stagnation, and either decline or rejuvenation. Third, growth may not be strictly monotonic as there could be periods when the rate of growth of tourism can depart from a smooth curve. Fourth, if decline does finally come, it could be an extended one rather than acceleration into extinction as efforts are made to slow its progression. Fifth, if another major technical change or 'structural change' comes along, it can initiate a new cycle of growth, retardation, stagnation and so on. Sixth, extinction is not inevitable.

Economists and Butler differ on the principal factor behind the secular retardation of industries/tourism destinations. For example, Kuznets focused on the slowdown in technical progress as the most important factor in explaining the retardation of industries over time. By contrast, Butler focused on the destination's carrying capacity.[3] Both were aware that the

[3]There are several definitions of a destination's 'carrying capacity' (see Martin and Uysal, 1990, pp. 328–330.) Butler's (1980) definition is rather curious. His notion of physical carrying capacity includes 'transportation, accommodation, and other services' which are reproducible services. Since the TALC is a long run model of tourism destination evolution, the critical physical capacity constraints are those which are non-reproducible, technology cannot surmount, and good substitutes cannot be found in the long run. Environmental resources come to mind (Tisdell, 2005, Ch. 10). The World Tourism Organization (UNWTO) defines carrying capacity as "the level of visitor use an area can accommodate with high levels of satisfaction for visitors and few impacts on resources". (Mak, 2004, p. 176). The social carrying capacity notion can be added to the UNWTO definition by adding the words 'and residents' after 'high levels of satisfaction for visitors' to complete the definition. This is the notion of 'carrying capacity' employed here.

factor that each had singled out does not represent a complete list of factors that explain the growth of an industry/tourism destination (Kuznets, 1930, p. 53; Butler, 1998; Butler, 2006b, p. 282). Kuznets (p. 53) emphasised technical change because it 'seemed to us to be paramount'.

Hawaii provides an excellent illustration of the relative importance of technical progress versus carrying capacity in explaining the evolution of this premier tourist destination. For Hawaii, the technical progress of significance is in passenger transportation, notably in aviation. Hawaii has reliable annual data on visitor arrivals since at least 1922 (Table 11.A, Appendix).[4] The existence of a continuous series of tourism data for a single destination for over 80 years is rare. Moreover, Hawaii's tourism product, while changed over the years, has not changed drastically since the turn of the 20th century. Tourists have always been attracted to Hawaii by its exceptional natural amenities — the sun, sand, and sea. A uniform market has often been cited as one of the requirements for the TALC to apply [Lundtorp and Wanhill in Butler (2006b, p. 149)]. For destinations such as Hawaii that rely on the development and diffusion of transport technology to attract tourists, Kuznets' technical change based theory may provide a superior explanation of their life cycles than Butler's carrying capacity theory.

11.3. The Life Cycle of Hawaii's Tourism Industry/Destination

Tourism grew at a modest pace in Hawaii between 1922 and 1941, interrupted by four straight years of decline during the Great Depression of the 1930s. However, the numbers were still small. On the eve of America's entry into World War II in 1941, the number of visitor arrivals in Hawaii totalled only about 26,000. Rapid growth came after World War II after the tourism business resumed operation following its suspension (1942–1945) during the War when transportation and hotel facilities were transferred to military use. Between 1946 and 2009, the evolution of Hawaii as a tourist destination followed in near picture-perfect fashion Butler's TALC, with rapid growth in the late 1940s through the 1960s, slower growth thereafter until 1990, and maturity and stagnation after that (Fig. 11.2). If we consider the years before

[4]Crampon (1976, Appendix, Table III, pp. 316–317) estimated the number of visitor arrivals in Hawaii back to 1800. Nineteenth century visitor arrivals in Hawaii comprised mostly of visiting merchant seamen and whalers. The rise and decline of whaling in the North Pacific during the 19th century provided Hawaii with its first tourism cycle.

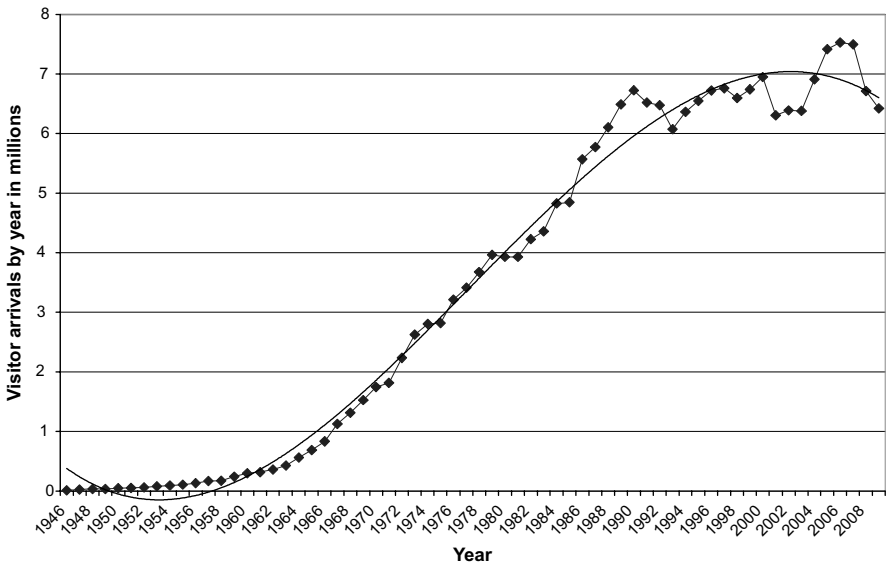

Fig. 11.2. Annual visitor arrivals by air to Hawaii, 1946–2009 (with added trendline).
Source: Table 11.A, Appendix.

1942 as the commencement of modern tourism in Hawaii, we can focus most of our attention on the explanation of its stunning growth after 1945.

11.3.1. *The beginning: The nascent period*

Crampon (1976) noted that Hawaii had a tourist trade going back to the early 19th century. But it was not until after 1870 that one could say Hawaii really became a tourist destination when regular steamship service between the US West Coast and Hawaii was firmly established. Cargo and passengers were carried on the same ship then, but it was cargo that was more valuable. In 1903, Hawaii established its first tourism bureau. The Roaring Twenties saw sizeable increases in the number of visitors to the islands. America's economy was booming, population on the West Coast was increasing rapidly, and ships were faster and sailed more frequently. In 1927, the first of what would be Matson Navigation Company's fleet of 'White Ships' — the 20,000 ton, 650-passenger *Malolo* — made its maiden voyage to Hawaii carrying 419 (all first class) passengers; it was the largest and fastest passenger ship in the Pacific cruising at a fleet 21 knots. The *Malolo* joined a fleet of eight other Matson ships offering seven trips to Hawaii from San Francisco and Seattle every month at an advertised price of '$270, up' for

'all expense tours' (O'Brien, 2008, p. 30). Matson would build three more luxury passenger liners in the early 1930s (O'Brien, 2008). In addition to bringing most of the tourists to Hawaii, Matson owned and operated two of the finest hotels in Waikiki, the *Moana* and the *Royal Hawaiian*. Indeed, when the *Royal Hawaiian Hotel* was opened in 1927, it was considered one of the finest hotels in the world (Cohen, 2001).[5] Matson's name became synonymous with Hawaii tourism (Allen, 2004, p. 4).

On October 21, 1936, Pan American Airlines introduced its Clipper service from San Francisco to Manila via Honolulu, using the long-range flying boat, the Martin M-130.[6] The M-130 could carry 32 passengers and cruise at a speed of 130 miles per hour. On its inaugural flight, the *Hawaii Clipper* from San Francisco to Honolulu carried seven passengers at a one-way (first class only) fare of $356 (Crampon, 1976, p. 233). While flying by air was much more expensive than by steamer, speed-wise, it was a big improvement over a five-day ship voyage on the fastest steamer; the M-130 flying boat took about 20 hours to reach Hawaii. For the next few years, Pan Am, which held a monopoly on the route, flew a once-a-week schedule between San Francisco and Manila, with stopovers in Honolulu, Midway Island, Wake Island, and Guam (stops were necessary for refuelling).

Not long after the M-130 was put into service, Pan Am introduced the improved B-314 flying boat which provided somewhat longer range and slightly more air speed but a much larger passenger load, 70 passengers instead of 32.[7] The scheduled flying time was cut to 17 hours and 30 minutes at a nominal one-way fare of $278.

The flying boats did not bring a dramatic change in tourist travel to Hawaii. High fares and limited capacity explain why almost all (98.9%) the

[5]Two other hotels, the *Surfrider* and the *Princess Kaiulani* were built after the War (Allen, 2004, p. 4). By owning hotels, Matson was able to sell transportation and accommodation packages that no other transportation company could at the time.

[6]Actually the first scheduled flight by the China Clipper was in November 1935 taking 21 hours; but that flight carried only mail. Only three of the Clippers were built, the China Clipper, the Philippine Clipper and the Hawaii Clipper. See http://www.aviation-history.com/martin/m130.html. [accessed on 7 September 2010].

[7]See http://www.clipperflyingboats.com/pan-am/boeing-b314. The B-314, also dubbed a 'Clipper' ship by Pan Am, could carry 74 passengers (40 passengers in sleeper configuration); had a 14-seat dining room, and even a private honeymoon suite at the back of the plane. At a standard cruising speed of 183 miles per hour, it was not a much faster plane than the M-130 [accessed on 7 September 2010].

arriving passengers in Hawaii before World War II came to Hawaii by ship (Crampon, 1976, p. 284). The persistence of ship travel is not surprising as it is not uncommon to see a new innovation not displace an old technology right away. As noted by Kuznets, new innovations are rarely perfect at the beginning, thus allowing old technologies to persist for quite some time.[8] On the eve of America's entry into WWII in 1941, over 62,000 trans-Pacific passengers arrived in Hawaii by ship; by comparison no more than a thousand came by air (Schmitt, 1977, pp. 452 and 460; Crampon, 1976, p. 284).[9]

11.3.2. *End of WWII to 1990: The sustained growth stage*

World War II put Hawaii's tourism industry out of business from 1942 to 1945. Following WWII, it took a few years before tourism in Hawaii finally surpassed the level attained before the War. In 1949, there were 34,000 visitor arrivals in Hawaii. By Statehood in 1959, the number had increased to 243,000. During the '50s the annual growth rate of visitor arrivals averaged nearly 21%. In no decade since then has Hawaii experienced a higher (average) rate of growth. The annual growth rate during the '60s averaged 19.7%, 8.7% in the '70s, and 5.6% in the '80s (Table 11.3). While the rate of growth slackened over time, the spectacular increase in visitor *numbers* was what caught people's attention and, beginning in the mid-1970s, fuelled resident demand for government intervention to curb tourism's growth (Mak, 2008, Ch. 3). By 1990, visitor arrivals reached 6.7 million, or nearly 28 times that in 1959.

Long-time Hawaii tourism executive, Robert Allen, opined that three elements were primarily responsible for Hawaii's phenomenal post-WWII growth in tourism: the jet airliners, the mega-resorts, and the travel agents (Allen, 2004, p. 22). Technical progress in air transportation was clearly the most important; the other two were dependent on the former. More speed, lower cost, and greater passenger carrying capacity offered by newer and more technically advanced airplanes were instrumental in the accelerated development of Hawaii tourism after WWII. But it was not the jet plane alone that propelled the take-off.

[8]See, also, Rosenberg (1972). Indeed, air and ocean transportation provided complementary services. In June 1935, Pan Am and Matson signed an agreement whereby Pan Am would furnish meteorological services to Matson and Matson agreed to ship passenger baggage for the airline (Davies, 1972, pp. 250–251).

[9]There were less than 1,200 arriving, departing, and through air passengers; no separate passenger counts were reported for each category.

Even before the introduction of jet plane service to Hawaii in 1959, one cannot readily dismiss the contribution of land-based piston engine planes to the expansion of tourism in the isles. After WWII, Pan American's flying boats were replaced by land-based planes which flew faster, carried more passengers, and operated at lower cost: the DC-4 in 1946, and shortly thereafter the luxurious Boeing 377 Stratocruiser,[10] various editions of the Lockheed Constellation[11] and the DC-6 in the early 1950s,[12] and finally the fastest of the piston engine planes, the DC-7 in the mid-1950s.[13] With the average aircraft speed increasing from 200 to over 300 miles per hour in a matter of a couple of years after the introduction of the DC-4, flight time from San Francisco to Hawaii was cut from 17 hours and 30 minutes in the B-314 flying boat, to 11 hours 45 minutes in a DC-4, to 9 hours and 25 minutes in a Boeing 377 Stratocruiser, and finally to 8 hours and 25 minutes in a DC-7. The one-way first class airfare between San Francisco and Honolulu fell from $278 on the B-314 to $178 (excluding taxes) in nominal dollars; but the introduction of an economy fare brought the lowest one-way passenger fare down to $125 by 1952. The initial first class one-way fare of $195 on the DC-4 in 1946 was 35% less expensive than a ticket on the B-314, and it quickly fell to around $160 three years later. Thus, technical progress in air transportation brought down prices and the time cost of travel. It also brought improved service; for example, cabin pressurisation was not introduced until

[10]Pan Am introduced the Boeing 377 Stratocruiser to Hawaii service in 1949. The plane, adapted from the WWII B-29 bomber, was the first truly intercontinental airliner with a range of 4,600 miles and a cruising speed of 300 mph carrying up to 100 passengers and crew. It had an extra wide passenger cabin and a lower level beverage lounge. See http://www.boeing.com/history/boeing/m377.html [accessed on 7 September 2010].

[11]These included the L049, L749, L1049 and finally the L1649 Starliner. Each of these planes could cruise at speeds in excess of 300 miles per hour; the maximum passenger loads increased from 54 passengers for the L049 to nearly 100 for the L1649. The 'Connie', judged a commercial failure, was not as economically efficient a plane to fly as the Douglas (DC) family of planes. See http://www.historynet.com/the-legendary-lockheed-constellation.htm [accessed on 7 September 2010].

[12]The DC6 Cloudmaster had a cruising speed of about 300 miles per hour with a standard passenger load of between 45 to 56. See http://www.airliners.net/aircraft-data/stats.main?id=190 [accessed on 7 September 2010].

[13]The DC-7s could carry about 100 passengers at a cruising speed of about 350 miles per hour. See http://www.airliners.net/aircraft-data/stats.main?id=191 By comparison, the DC-4 could carry a standard passenger load of only 44 passengers and fly at a cruising speed of about 210 miles per hour. See http://www.airliners.net/aircraft-data/stats.main?id=189 [accessed on 7 September 2010].

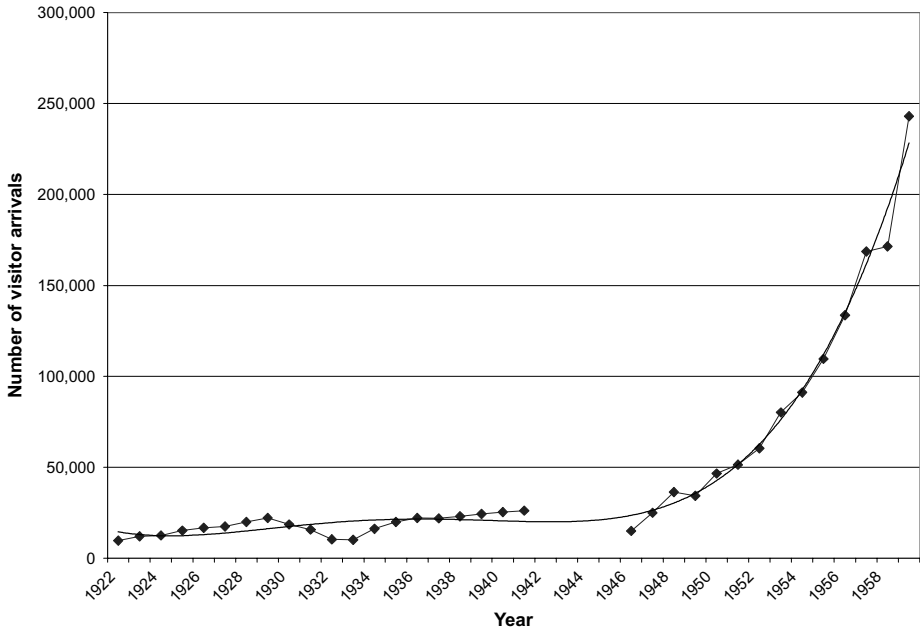

Fig. 11.3. Annual visitor arrivals to Hawaii, 1922–1959.
Source: Table 11.A, Appendix.

the DC-6. The rate of growth of tourism accelerated in tandem with technical advancements in airplanes after 1946 (See Fig. 11.3). Nonetheless, while tourism grew at an impressive pace in the 1950s, the count of visitor arrivals was still modest.

Nineteen fifty-nine (1959) was an auspicious year for Hawaii. Hawaii became America's 50th state, and the occasion produced a spike (+41.8%) in tourist arrivals in that year. However, another event would ultimately be more important to the long-run growth of tourism in Hawaii. In 1959, Pan Am inaugurated jet plane service to Hawaii using the Boeing 707 that could carry around 180 passengers. The Boeing 707 was able to carry almost twice as many passengers as a DC-7 and cut travel time by another three hours to five hours.[14] A faster plane could make more round trips in a given amount of time thus making the crew and plane more productive; the average cost of operating a craft on a given flight fell (Goodman, 2000, p. 41). So did airfares. Between 1960 and 1970, the price of a one-way coach ticket between San Francisco and Honolulu — adjusted for inflation — fell by nearly 50%

[14]Jet service was also more reliable (Allen, 2004, p. 22).

(Mak, 2008, p. 16). By the mid-1960s, the era of the piston engine plane had come to an end.

Then in 1970, the Boeing 747 jumbo jet came into Hawaii service.[15] While it did not fly any faster than the Boeing 707, it could carry nearly three times as many passengers depending on the configuration, enabling airlines to carry large groups of people who wished to travel together (i.e., the group package tour).[16] The Boeing 747 was also more luxurious. Because it could carry more passengers than the largest piston engine planes, the Boeing 747 and other jumbo jets (i.e., the McDonnell Douglas' DC-10 and the Lockheed 1011) were even less costly to operate.

Cost savings from using faster and bigger planes in the 1960s and 1970s were passed on to consumers via lower airfares. Lower time and money cost of travel led to a reduction in the average length of stay in Hawaii as more people found it worthwhile to take shorter but more frequent trips to Hawaii. The change in consumer behaviour confirms Gronau's (1970) hypothesis regarding the relationship between travel cost, trip duration, and repeat visitation: The lower the cost of travel, the greater is the passenger's tendency to stay shorter at the destination and to increase the frequency of trips.[17] Thus, technical progress in air transportation not only increased the number of people able and willing to travel, it also changed their travel behaviour once they arrived at their destination.[18]

Along with technical progress in aviation, there were also significant organisational changes in air service that stimulated tourist travel to Hawaii. Until 1947, Pan Am enjoyed a monopoly in providing air passenger service between the West Coast and Hawaii through its sole gateway in San Francisco. Until airline deregulation was enacted in the US in 1978, the Civil

[15]The first of the Boeing 747s denoted as Boeing 747-100 could cruise at a speed of 555 miles per hour carrying 366 passengers in a three-class configuration or 452 passengers in a two-class configuration. See http://www.boeing.com/commercial/747family/pf/pf_classics.html [accessed on 7 September 2010].

[16]Fares, which were regulated by the US government, permitted discounts for larger groups.

[17]By contrast, the lower the costs of hotels and restaurants at the destination, the greater is the passenger's tendency to stay longer and reduce the frequency of visits in the future. (See also Mak, 2004, pp. 52–53).

[18]As well, as newer and faster planes were able to fly over the vast Pacific Ocean without frequent refuelling, the number of stopover and in-transit visitors to Hawaii declined. The number of in-transit passengers (i.e., passengers who do not spend at least one night in Hawaii) fell from roughly 1 million per year in the 1980s and early 1990s to 13,000 in 2008.

Aeronautics Board (CAB) tightly controlled airfares and airline entry and exit in interstate air passenger transportation (Biederman, 1982).[19] In 1947, after many years of deliberation, the CAB permitted two more American carriers to fly to Hawaii: United Airlines in 1947 to serve San Francisco and in 1950 to also serve Los Angeles, and Northwest Orient in 1948 to serve Seattle and Portland. Though a relative newcomer, United Airlines would become the largest carrier in the Hawaii market. Borrowing a pricing practice on the mainland, economy fares were introduced on the Hawaii routes in the early 1950s. Then in 1969 and 1970 came the Civil Aeronautics Board's great expansion of five additional carriers: American, Braniff, Continental, TWA, and Western.[20] Competition among airlines was growing rapidly. Increased competition was good for consumers as it led to lower airfares and better service quality.

Improvements in air transportation services took a heavy toll on travel by ocean liners. Time cost conscious business travellers were the first to switch to air travel. By the early 1960s, most of the passengers on Matson's White ships were vacationers (O'Brien, 2008, p. 257). When the Boeing 747 was introduced into Hawaii service in 1970, less than one-half of 1% of the visitors from North America still arrived by sea (Schmitt, 1977, p. 276). In the same year, Matson terminated its passenger service.[21] The last sailing of a 'White Ship' under its new owner in 1978 ended the era of luxury liner travel between the West Coast and Hawaii (O'Brien, 2008, p. 15). It is noteworthy that most of the decline in ship travel came after World War II following the deployment of the more efficient land-based piston engine planes.

Kuznets noted that technical improvements that increase productivity and reduce prices would 'spread to larger areas, overcoming obstacles which

[19]However, the CAB did not regulate the frequency and quality of service, thus inducing airlines to engage in non-price competition such as buying more and bigger planes, scheduling more flights, and providing more on-board 'free' amenities. For instance, Western Airlines boasted that it served (free) champagne on every Hawaii flight (Ebel and Mak, 1974, p. 36). Aggressive non-price competition dissipated the potential excess profits that airlines could have earned on their protected routes.

[20]For the story of this highly controversial case, see Davies (1972, pp. 557–561).

[21]Matson tried but was unsuccessful in its bid to secure CAB authorization to offer scheduled airline service from the West Coast to Hawaii (Davies, 1972, p. 377; Melendy, 2003). One of the reasons for the denial was CAB's concern that Matson's dominance in ocean shipping and its ownership of two of the premier hotels in Hawaii would give it a competitive advantage over Pan Am. Without an airline, Matson sold its four Waikiki hotels to Sheraton in 1959.

may have limited demand in the past'. Rapid growth of the industry ensues. We now examine the trend in airfares from the US mainland to Hawaii. While the airfare is not the total cost of a vacation in Hawaii, it is arguably the most important. Demand for long haul travel is highly sensitive to changes in the cost of transportation (Bechdolt, 1973; Oum *et al.*, 1972; Crouch, 1995).[22]

Economic theory predicts that if an industry (market) is highly competitive, the rate of change in the price of the commodity should reflect the underlying rate of change in the industry's productivity.[23] However, interstate passenger air transportation in the US was not an open, competitive market until after the early 1980s. In 1938, Congress passed the Civil Aeronautics Act of 1938 creating the CAB to regulate airfares and airline entry and exit; 40 years later in 1978 Congress enacted legislation to deregulate the airline industry (Biederman, 1982, Ch. 6). The CAB was abolished in 1985. Airlines were allowed some flexibility in setting airfares beginning in 1976, and they could set any price they desired after 1983 (Biederman, 1982, Ch. 6). Hence, airfares on the Hawaii route between 1938 and 1983 were not 'market' prices but were regulated prices. Nonetheless, airfares, adjusted for inflation, fell in the US even before deregulation, reflecting the decline in the cost of supplying air transportation services (Goodman, 2000, Chart 4, p. 44; Morrison and Winston, 1995, Figs. 2–3, p. 11).

Table 11.1 presents nominal and real (1982–1984 = 100) roundtrip San Francisco to Honolulu airfares between 1936 and 1977 during the regulated era. These are based on the cheapest available class of fares available to individual consumers, and hence are not constant service quality prices. In 1977, the cheapest nominal round trip airfare was only one-third that in 1936. Adjusted for inflation, it was less than one-twelfth (8%) the fare in 1936.

With deregulation in 1978 came the proliferation of fare categories. Table 11.2 presents weighted[24] airline passenger yields (i.e., average ticket

[22]Biederman (1982, p. 168) notes that it was widely accepted among airline industry officials before deregulation that demand for business travel was price inelastic while that of leisure travel was price elastic and they adopted pricing policies accordingly.
[23]The mathematical proof is presented in Haites *et al.* (1974, Appendix G). The productivity measure in Haites *et al.* is 'total factor productivity'; however, most estimates of airline productivity, until recently, measure labour productivity (Goodman, 2000). See Apostolides (2005) for differences between the two measures.
[24]Weighted by the share of seats from various US mainland cities; only fares paid by paying passengers were included in the calculations. The estimates, which have not been previously published, were kindly supplied to the authors by Dr Eugene Tian of the State of Hawaii, DBEDT.

Table 11.1. Trends in the cheapest nominal and real roundtrip airfares and flight times between San Francisco and Honolulu: 1939–1977 (Real airfares in 1982–1984 prices).

Year	Airfare	Fare class	Real airfare	Flying time	Plane	Seats (circa)
1936	$712	First	$5,120	20:00	M-130	28
1937	712	”	4,450	”	”	”
1938	712	”	5,050	”	”	”
1939	556	”	4,000	17:30	B-314	74
1940	500	”	3,571	”	”	”
1941	500	”	3,401	”	”	”
1942	500	”	3,067	”	”	”
1943	500	”	2,890	”	”	”
1944	500	”	2,841	”	”	”
1945	500	”	2,778	”	”	”
1946	350	”	1,795	11.45	DC-4	40
1947	243	”	1,090	”	”	”
1948	270	”	1,120	”	”	”
1949	288	”	1,210	9.25	B-377	60
1950	288	”	1,195	”	”	”
1951	288	”	1,108	”	”	”
1952	250	Economy	943	”	”	”
1953	250	”	936	”	”	”
1954	250	”	929	”	”	”
1955	250	”	933	”	”	”
1956	250	”	919	”	”	”
1957	250	”	890	”	”	”
1958	266	”	920	8.25	DC-7C	110
1959	266	”	914	”	”	”
1960	266	”	899	”	”	”
1961	266	”	890	4.55	Boeing 707	180
1962	266	”	881	”	”	”
1963	200	Thrift	654	”	”	”
1964	200	Thrift: Weekday	645	”	”	”
1965	200	”	635	”	”	”
1966	200	”	617	”	”	”
1967	200	”	599	”	”	”
1968	200	”	575	”	”	”
1969	170	”	463	”	”	”
1970	170	”	438	”	”	”
1971	196	”	484	4.55	Boeing 747	360-460
1972	200	”	478	5.02	”	”
1973	200	”	450	”	”	”

(*Continued*)

Table 11.1. (*Continued*)

Year	Airfare	Fare class	Real airfare	Flying time	Plane	Seats (circa)
1974	232	”	471	4.58	”	”
1975	232	”	431	”	”	”
1976	232	”	408	”	”	”
1977	238	”	393	”	”	”

Notes: Airfares were deflated using the US consumer price index (CPI-U), 1982–1984 = 100, published by the US Census Bureau (2010).
Source: Airfares, flying time, and planes from Schmitt, (1977, pp. 468–469). Seating capacity from footnotes above.

Table 11.2. Trends in weighted airline passenger yields between the US mainland and Hawaii: 1982–1997 (in cents per passenger mile).

Year	Nominal yield	Real yield (1982–1984 = 100)
1982	6.6	6.8
1983	6.1	6.1
1984	6.5	6.3
1985	7.0	6.5
1986	6.4	5.8
1987	7.3	6.4
1988	7.3	6.2
1989	7.2	5.8
1990	7.3	5.6
1991	7.3	5.4
1992	7.1	5.1
1993	7.1	4.9
1994	7.4	5.0
1995	7.2	4.7
1997	7.0	4.4

Source: Data from internal records kindly supplied by Dr. Eugene Tian, State of Hawaii Department of Business, Economic Development and Tourism (DBEDT).

revenue per passenger mile) on domestic westbound flights to Hawaii between 1982 and 1997 using data (OD1A series) from the US Department of Transportation.[25] Recalling that airlines could fully set their own fares

[25]The Department of Transportation uses a sample of airline tickets. Trends in airline passenger yields are commonly used to measure trends in airfares (See Morrison and Winston, 1995, Ch. 2).

Table 11.3. Average annual percentage change in visitor arrivals and real airfares.

Period	% Change in visitors	% Change in airfares
1922–1930	9.2	
1930–1940	5.6	−7.9 (1936–1940)
	Tourism Suspended, 1942–45, Due to WWII*	
1946–1950	34.6	−7.5
1950–1960	20.8	−2.7
1960–1970	19.7	−6.5
1970–1980	8.7	−1.3 (1970–1977)
1980–1990	5.6	−2.6 (1982–1990)
1990–2000	0.4	−3.4 (1990–1997)
2000–2009	−0.5	—

Note: *Attack on Pearl Harbor (Honolulu) occurred on December 7, 1941.
Source: Percentage change in airfares calculated from Table 11.1 for years before 1978 and from Table 11.2 for 1982–1997. Visitor arrivals from Table 11.A, Appendix.

beginning in 1983, nominal yields between the US mainland and Hawaii rose by 6% between 1982 and 1997 but real yields fell by 35% between the two years.

Table 11.3 summarises the average annual percentage changes in visitor arrivals and real airfares (mostly) at 10-year intervals since 1930. For the years for which we have data, real airfares for travel between the mainland and Hawaii fell. The annual percentage rate of decrease was greater right after WWII when the DC-4 and other piston engine planes were introduced, followed by slackening. The rate of fare decline picked up again during the decade of the 1960s when the era of jet travel began. The introductions of the Boeing 747 and other wide-body jets after the 1970s were the last major technological change in airplanes that were of economic importance (Goodman, 2000).[26]

[26]Kuznets (1930, pp. 30–33) noted that "the number of important inventions within an industry with an unretarded supply of raw materials tends to diminish with time". The airline industry benefited from other technological improvements besides improvements to the aircraft, among the most important being the computer reservation system first introduced by United Airlines and American Airlines in 1976 (Morrison and Winston, 1995, pp. 61–62). The development of the hub-and-spokes system in the early 1980s, a by-product of airline deregulation, also raised airline productivity as it helped to raise load factors (Goodman, 2000, p. 43).

Goodman (2000, p. 43) notes that in the US, 'Despite all the benefits of competition, output per employee advanced much more slowly after 1978, when ongoing changes to the aircraft were not so economically meaningful'. Real airfares continued to decline after the 1970s but not as steeply as before.[27] The timing of changes in real airfares in the Hawaii market corresponds roughly (roughly, because other factors also influenced airfares) to changes in labour productivity in the US air transportation industry.[28] Visitor arrivals also grew faster before 1970 than after 1970. The period between the end of WWII and (around) 1970 when the annual rates of tourism growth averaged in the double digits was, arguably, the Golden Age of travel to Hawaii.

The revolution in air transportation after 1959 ended the era when Hawaii was a vacation spot for the affluent. Some called what followed 'mass tourism', others 'the democratisation of travel'. Dr Richard R. Kelley, Board Chairman of his family-owned Hawaii hotel chain, Outrigger Enterprises Inc., recalled the dramatic transformation of Hawaii tourism from the '50s to the '70s this way[29]:

> 'I remember back in '51, I don't think we even had 10,000 visitors at that point ... Back in the '40s and '50s, everybody came in by boat. HVB (Hawaii's Visitors Bureau) had a tug rented and we'd go offshore and greet people. It was all individual treatment. Reservations were made and confirmed by mail with a three-cent stamp. But by 1970 larger number of tourists started to come. Jet planes were soon followed by the jumbo jet. All of a sudden we were dealing with an entirely different level. These weren't individuals, this was the day of mass tourism. The only way to get a cheap airfare was to book a packaged tour. Everybody was doing that. Suddenly we had 200 people in our lobby all at once, then you have nothing for a couple of days, then another 200 show up. We had to get into sales and marketing, working with wholesale travel companies. It was just a rapid evolution of the business'.

[27]Economic recession in the early 1970s slowed the deployment of the Boeing 747 until late in the decade and two energy crises during the 1970s raised the cost of air service provision.

[28]It is not unreasonable to assume productivity change in air transportation in the Hawaii market to be highly correlated to productivity change in the entire US.

[29]*The Honolulu Advertiser* (2004, p. C3). His father, Roy Kelley, and Founder of Outrigger, was instrumental in building large numbers of affordable hotels for the "common man." (Allen, 2004, Ch. 5).

In retrospect, the timing of the CAB's decision to adopt a more competitive market structure was directly linked to the expected increase in demand for air travel in the Pacific stemming in large part to technical advances in aircraft.[30] It also provided entrepreneurs the incentive to develop new supporting tourism businesses (e.g., tour wholesalers), and induced the entry of national/global hotel chains such as Sheraton (in 1959) and Hilton (in 1961) to Hawaii (Allen, 2004, Ch. 2). As noted by Kelley, progress in air transportation also led to consumer product innovation (e.g. the rise of pre-paid group package tours).

In 1951, more than half (52.3%) of all westbound (i.e., mostly North American) visitors to Hawaii were from California.[31] By 1975, that percentage had fallen below 25% (Schmitt, 1977, p. 274). Geographically, the market for Hawaii travel in North America was expanding eastward away from the West Coast. Falling (real) airfares and time cost of travel expanded the geographic market for Hawaii tourism. It also induced people to take shorter but more frequent trips. The percentage of repeat westbound visitors grew from 22% in 1951 to nearly 40% by 1975 (Schmitt, 1977, p. 274). The rise in repeat visitation was greatest after the introduction of jet plane travel in 1959. At the same time, the average length of stay of westbound visitors to Hawaii fell from 25 days in 1951 to less than 11 days in 1975 (Schmitt, 1977, p. 276).

Even a cursory examination of Table 11.A in the Appendix reveals the stunning growth in the volume of tourists since 1959. Visitor arrivals increased from 243,000 in 1959 to 1.7 million in 1970, to 3.9 million in 1980, and 6.7 million in 1990. Over a span of 31 years between 1959 and 1990, there was only one year (1980) in which the visitor count fell below that of the previous year. And that decline was a small one, less than 1%. Hawaii was seemingly immune from negative national and international shocks.

Tourism's growth rate slackened dramatically after 1970, but not because Hawaii had reached its physical or social carry capacity as Butler had hypothesised. Hawaii remained one of the most desired destinations to visit.

[30]Between 1959 and 1965, the number of air travellers between the US and the Far East and Oceania experienced the fastest growth rate of any of the world's routes (Davies, 1972, p. 557). World War II also raised awareness by Americans of Hawaii and Pearl Harbour and the greater acceptance of air transportation as a mode of travel.

[31]Visitors from North America accounted for 88% of all visitor arrivals in Hawaii in that year.

In 1999, the *National Geographic Traveler* magazine included Hawaii in its list of '50 Places of a Lifetime: The World's Greatest Destinations'. In 2004, *Travel Weekly* named Hawaii the 'Best Overall Destination in America'. A telephone poll of over 1,000 American adults commissioned by the Associated Press in 2005 found that Hawaii was their top vacation choice if money were no problem (Mak, 2008, p. 1). Kirk Smith, Senior Fellow in the Environmental Programme at the East–West Centre (Honolulu) opined that overall, 'Hawaii's natural environment is in great shape (relative to all other places inhabited by human beings), even in and around Honolulu, our only big city'. (Smith, 1993; also quoted in Mak, 2008, p. 143). Surveys of resident sentiment on tourism taken over many years do not indicate that Hawaii has reached or exceeded its tourism social carrying capacity either (Mak, 2008, p. 212; Market Trends Pacific and John M. Knox & Associates, Inc., Vol. II, 2008). The latest survey done in 2009 found that 78% of the state's respondents agreed that 'overall, tourism has brought more benefits than problems to the State' while 21% of the respondents disagreed (OmniTrak, 2010).[32] Historically, most of Hawaii's residents have expressed a strong sense of the 'Aloha Spirit' (i.e., hospitality), rather than hostility, toward tourists as individuals (Market Trends Pacific, Inc. and John M. Knox & Associates, Inc., 2003, p. 57).[33] Indeed, even as the rate of tourism growth was slowing in the 1970s, the state's tourism carrying capacity was growing as the outer islands of Maui, Kauai, and Hawaii (the Big Island) were just beginning to open up to mass tourism development (Mak, 2008, Ch. 8).

11.3.3. *1990 to the present: Maturity and stagnation*

Hawaii's visitor industry struggled during the 1990s. In the two decades since 1990, volatility replaced sustained growth.

There were a number of plausible reasons why tourism was in the doldrums in those years. Most of the factors were transitory. A prolonged economic recession in California, the first Gulf War in 1991, the collapse of

[32]In 2007, 71% responded positively. Surveys have generally found Native Hawaiians to be least supportive of tourism growth.

[33]Syndicated travel columnist Christopher Elliott noted that Hawaii was the exception when it came to hostility of residents in tourist areas toward visitors. He "was taken aback by the friendliness, which the residents refer to as the 'Aloha spirit'". (Elliott, 2010)

Japan's economic bubble in the same year, the devastation of Kauai by Hurricane Iniki in September 1992, and an airfare war among the major airlines on the US mainland during the summer of 1992 which excluded Hawaii all combined to create the Perfect Storm that slammed Hawaii's tourist industry for three consecutive years at the start of the 1990's. The Asian Financial Crisis of 1997–1998 discouraged foreign travel to Hawaii (−2% in 1997 and −10.1% in 1998). A succession of negative shocks also occurred after 2000. The decline in tourist arrivals in 2001 can readily be blamed on a mild US economic recession that began earlier in the year, the terrorist attacks on September 11 (which shut down air travel in the US for several days) and the subsequent Coalition invasion of Afghanistan. The decline in 2003 can be attributed to the Iraq War and the outbreak of the Severe Acute Respiratory Syndrome (SARS) in Asia. A recession in the US, which started in December of 2007, followed by a severe global financial crisis produced a sharp decline in demand for travel to Hawaii and to just about everywhere else in 2008 and 2009.

There was much discussion among local observers in Hawaii whether the tourism doldrums of the 1990s were only transitory. Surveys of visitors showed no sudden and sharp decline in satisfaction with their travel experiences in Hawaii. Indeed, in 2006, Hawaii recorded the greatest number of visitor arrivals in its history (7.5 million). Each of the two preceding years also set an all-time high record in visitor arrivals. But just about everyone agreed that Hawaii had become a mature destination, and probably for quite some time. The average annual rate of growth of tourist arrivals had fallen from double digits in the '60s to a single digit after that. Moreover, most (indeed nearly 60%) of Hawaii's tourists were repeat visitors. Among US mainland visitors roughly two-thirds had been to Hawaii before and many were on their fourth, fifth, or more trips. By comparison, in the 1950s, roughly 75% of all the visitors were first-time visitors. Waikiki, still the flagship of Hawaii's tourist industry, looked somewhat shabby and in need of major physical renovation. Hawaii was losing market share to other tourist destinations, and no new major markets appeared on the horizon.

11.4. Competition from Other Destinations

H. Peter Gray (1970) once characterised tourism as either 'sunlust' travel or 'wanderlust' travel. For most of its history Hawaii has been a premier 'sunlust' destination, with many, and indeed growing number of,

destinations around the world offering good substitutes. Kuznets recognised the importance of competition in causing the slackening or decline of industries.

In 2008, US and Japanese visitors comprised 84% of all visitors (excluding those arriving by cruise ships) to Hawaii (State of Hawaii, DBEDT, 2009). How competition from other destinations has affected those two groups of visitors over time reveals much about the impact of competing destinations on Hawaii's destination lifecycle.

In 1983, 572,000 Japanese visitors arrived in Hawaii, representing 13.5% of all Japanese trips to foreign destinations. Hawaii's market share fluctuated from year to year, usually between 13% and 14%, but did not exhibit a discernible downward trend until after 1995 (Fig. 11.4).

Thereafter, it would never reach 13% again. Japanese travel to Hawaii peaked in 1997 at 2.152 million arrivals. At Japan's airports, one in eight among Japanese overseas travellers was headed to Hawaii. After 1997, Hawaii's share of Japanese outbound travel would fall nearly every year

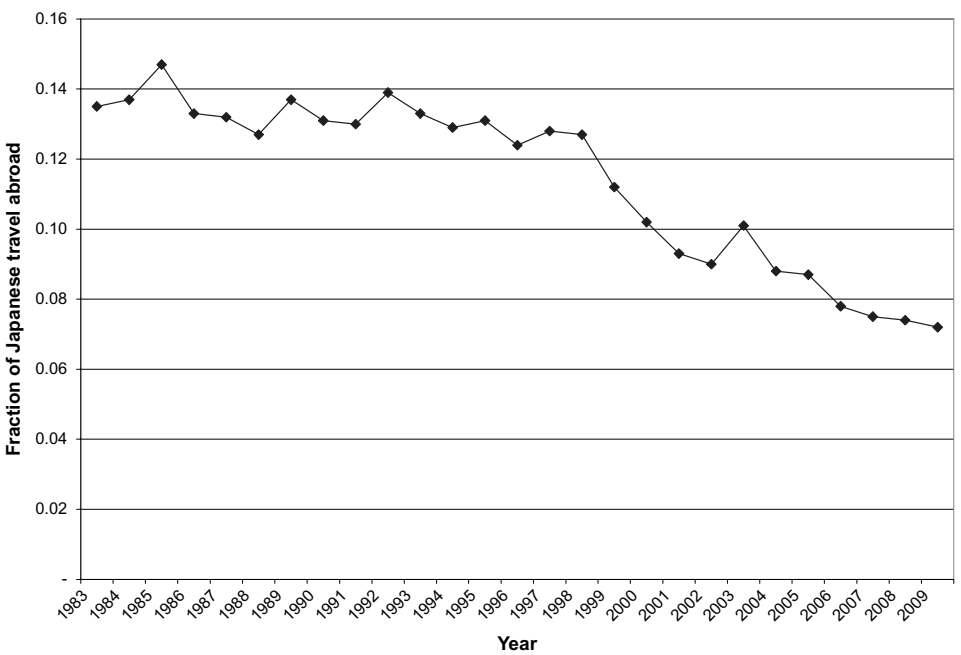

Fig. 11.4. Hawaii's share of Japanese travel abroad: 1983–2009.
Sources: Japanese outbound data from JTB Report (various years), JATA-NET (on-line), and Travel Journal; Japanese arrivals in Hawaii from State of Hawaii Department of Business, Economic Development and Tourism.

reaching the current percentage of 7.2% (2009).[34] While the Japanese travel to Hawaii has declined since 1997, the total number of Japanese outbound travellers (to all international destinations) peaked in 2000 at 17.8 million.[35] In 2006, Hawaii's market share of Japanese outbound travel was 7.8% when 17.53 million Japanese travelled overseas, the second highest total number of departures in any year. In 2009, 1.117 million Japanese tourists visited Hawaii, more than one million less than during the peak year of 1997 (State of Hawaii, DBEDT)). Increasingly, the Japanese are finding other destinations more attractive.[36]

The story of American travel to Hawaii is somewhat different from that of the Japanese. Here, we employ the ratio of American (domestic) travel to Hawaii and the US travel overseas (excluding Canada and Mexico) to represent the trend in the relative attractiveness of Hawaii versus other long-haul (foreign) destinations. Figure 11.5 shows the ratio between 1983 and 2009.[37]

In the 1990s, the ratio of the US domestic travel to Hawaii to the US resident overseas foreign travel — excluding Canada and Mexico — began a long decline, indicating that foreign destinations had become relatively more attractive than Hawaii. For a few years after the terrorist attacks of September 11 (2001), Hawaii once again became relatively more attractive to Americans due to growing apprehension of foreign travel. That apprehension appears to have abated after 2005.[38] Still, unlike Japanese travel to Hawaii, the number of the US (domestic) visitors to Hawaii continued to rise until 2007 after a brief reversal in the early 1990s. A review of both the US and Japan markets indicates that competition from other destinations has had a significant impact on the growth of tourism in Hawaii since the 1990s.

[34]Except in 2003. Japan Travel Bureau (various years); Travel Journal (various years); JATA-NET (2009) at http://www.jata-net.or.jp/English/materials/materials_index.htm.

[35]10.2% of these travellers were bound for Hawaii. The numbers would fall to 17.29 million in 2007 and 15.44 million in 2009.

[36]In 2008, 58% of all Japanese visitors to Hawaii were repeat visitors (average of 3.77 trips) (State of Hawaii, DBEDT, 2009, p. 43). Surveys of Japanese satisfaction with their Hawaii vacations indicate that about two-thirds of the respondents would very likely recommend Hawaii to their friends and relatives but less than half would likely return to Hawaii themselves in the next five years. The most frequently given reason for not returning soon is the desire to visit other destinations (State of Hawaii, DBEDT, 2008a, pp. 8–13).

[37]Aggregate US outbound travel data are not available for years before 1983.

[38]The temporary gain in popularity of Hawaii *vis-à-vis* other overseas destinations after September 11 is discussed in Bonham *et al.* (2006).

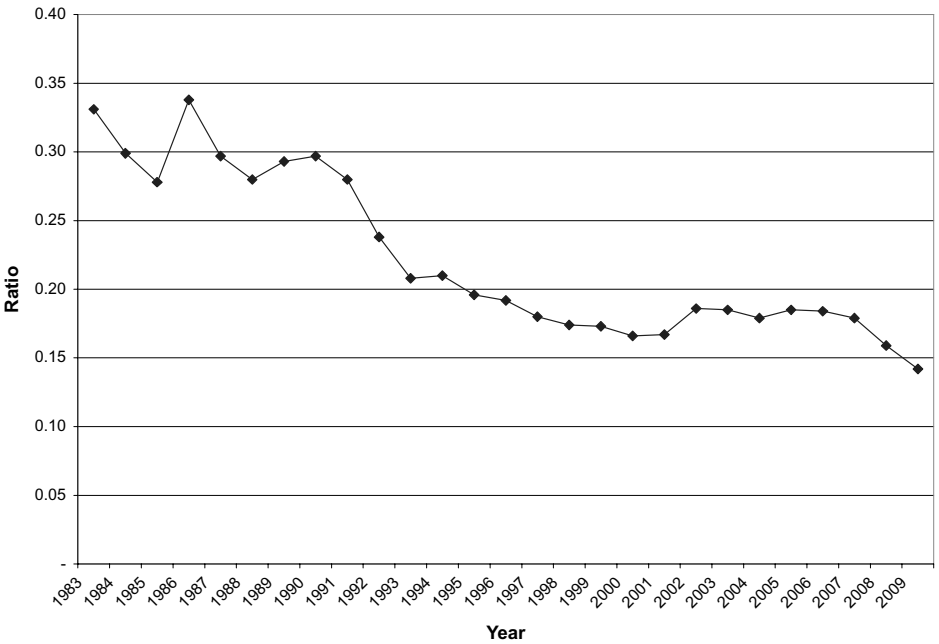

Fig. 11.5. Ratio of US domestic travel to Hawaii and US Resident Travel Overseas. *Sources*: US foreign outbound travel data from US Department of Commerce, Office of Travel and Tourism Industries; 1983–1989 obtained through personal communication; US domestic visitor arrivals in Hawaii from the State of Hawaii Department of Business Economic Development and Tourism (2000, 2008).

11.5. Conclusion

This chapter shows that the history of tourism evolution in Hawaii fits well Butler's TALC, even if the path has not been smooth. Throughout its lengthy history as a world-class tourist destination, Hawaii has been buffeted by numerous external shocks including wars, terrorist attacks, government travel regulations (in the US and elsewhere), business cycles, financial crises, contagious disease outbreaks, and natural disasters, but most of these shocks were transitory. The underlying expansion path is the S-shaped curve described by Butler. However, and contrary to Butler, for Hawaii the more important factor in shaping that curve was the pace of progress in air transportation technology and not the islands' 'carrying capacity'.

Tisdell (2005, p. 233) offers another reason for the eventual slowdown in the expansion of tourist destinations. He suggests (p. 233) that initial rapid growth of visitor arrivals may be the result of the realisation of latent demand by some people who wished to visit but could not, and once satisfied 'future demand may depend on such factors as population growth and repeat

visits, which may be few'. Tisdell's latent demand hypothesis is not incompatible with the technical change hypothesis advanced here. In the case of Hawaii, latent demand could not be satisfied until technical progress in air transportation made it possible at an affordable cost. Technical progress that reduces the cost of travel can also increase the size of the potential travel market, including the creation of new markets, thus staving off retardation. As technical progress slackens, the other factors mentioned by Tisdell may dominate to slow the growth of the destination.

American economic history reminds us that economies, over time and as a result of technological progress and changes in factor proportions, experience changes in their comparative advantage that can lead to changes in their industrial structure (Hughes and Cain, 2003, pp. 393–394). The economic history of Hawaii provides an excellent illustration of how changes in transportation technology have changed Hawaii's comparative advantage thus altering the structure of its economy over time (La Croix, 2001; Hitch, 1992; Morgan, 1948). At any time in Hawaii's history, a few industries were dominant. In succession, the sandalwood trade of the early 19th century was replaced by the whaling industry in the middle of the 19th century followed by sugar and pineapple production during the latter 19th and early 20th centuries, and finally defence and tourism. On the eve of America's entry into World War II (1940), the sugar industry produced $55 million in export revenues; pineapple, $46 million; US government military expenditures in Hawaii, $45 million; while tourism produced only $12 million (Schmitt, 1977, p. 165). In 2005, tourism generated $11.9 billion in external earnings compared to $92.5 million for sugar, $113.4 million for pineapple, and $5.0 billion for US military expenditures (State of Hawaii, DBEDT, 2008b, Table 13.01). Innovation in aviation technology and geopolitics (i.e., the growing importance of Asia and the Pacific in global affairs) helped to transform Hawaii's comparative advantage from commodity production (sugar and canned pineapple) to service production (tourism and US military presence). The rise of tourism to its current dominant economic position in Hawaii was most crucially due to technical advances in air transportation. We have no reason to believe that Hawaii's comparative advantage may not shift again from tourism to something else in the future.

The main lesson from the TALC is that tourism once it takes off can make an increasing contribution to the economic growth of an area, but eventually becomes a relatively diminished force. Fortunately, for most destinations, tourism is not the only industry contributing to economic growth. Kuznets noted that it is typical for industry leadership to shift from one industry to another over time. Even long before tourism goes into the final stage

of *absolute* decline, the tourism industry may have been experiencing a *relative* decline for some time as new industries grow at faster rates. In Hawaii, tourism's (direct) share of the gross domestic product peaked in 1988 at 24.7% and has been in decline ever since (State of Hawaii, DBEDT, 2000, Tables 7.20 and 13.02).[39] Butler suggested that management (i.e., government) intervention may be able to slow the pace or even prevent tourism's decline (Butler, 1980; Butler, 2006b, p. 285). Management intervention comes at a cost. Who should bear the cost? And will the expected benefit from intervention be worth its cost? The optimum tourism development policy is one that examines tourism not in isolation but as part of a larger economy.

Appendix

Table 11.A. Visitor arrivals in Hawaii: 1922–2009.

Year	Number	Year	Number
1922	9,676	1971	1,817,941
1923	12,021	1972	2,233,627
1924	12,468	1973	2,622,376
1925	15,193	1974	2,804,394
1926	16,762	1975	2,818,082
1927	17,451	1976	3,213,249
1928	19,980	1977	3,413,095
1929	22,190	1978	3,676,967
1930	18,651	1979	3,966,192
1931	15,780	1980	3,928,789
1932	10,370	1981	3,928,906
1933	10,111	1982	4,227,733
1934	16,161	1983	4,356,317
1935	19,933	1984	4,827,884

(*Continued*)

[39]In 2008, tourism's contribution (direct + indirect) represented 16.9% of Hawaii's gross domestic product, down from 19.9% in 2002. When visitor arrivals reached an all-time high in 2006, tourism's share of the state's gross domestic product was 18.9%. The rest of Hawaii's economy has been growing faster than tourism (State of Hawaii, 2008b). Indeed, if we employ real tourism expenditures in Hawaii as a measure of destination size, tourism in Hawaii has declined *absolutely* for two decades.

Table 11.A. (*Continued*)

Year	Number	Year	Number
1936	22,199	1985	4,843,414
1937	21,987	1986	5,569,067
1938	23,043	1987	5,770,585
1939	25,373	1988	6,101,483
1940	24,390	1989	6,488,422
1942–1945	Tourism suspended due to WWII	1990	6,723,531
1946	15,000	1991	6,518,460
1947	25,000	1992	6,473,669
1948	36,397	1993	6,070,995
1949	34,386	1994	6,364,674
1950	46,593	1995	6,546,759
1951	51,463	1996	6,723,141
1952	60,436	1997	6,761,135
1953	80,237	1998	6,595,790
1954	91,166	1999	6,741,037
1955	109,663	2000	6,948,595
1956	133,667	2001	6,303,791
1957	168,652	2002	6,389,058
1958	171,367	2003	6,380,439
1959	242,994	2004	6,912,094
1960	296,249	2005	7,416,574
1961	319,476	2006	7,528,106
1962	361,812	2007	7,496,820
1963	428,690	2008	6,514,382
1964	563,412	2009	6,420,448
1965	1,745,904		
1966	834,732		
1967	1,124,012		
1968	1,313,706		
1969	1,526,074		
1970	686,314		

Sources: Schmitt (1977, Table 11.7); State of Hawaii Department of Business, Economic Development and Tourism (DBEDT).

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PART IV

STUDIES OF PARTICULAR SEGMENTS OF THE TOURIST INDUSTRY

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Chapter 12

THE NATURE AND DEVELOPMENT OF VISITOR ATTRACTIONS

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Abstract: The variety of visitor attractions is large and there are endless variations in terms of the product concept. However, the latter is inextricably bound up with the assessment of market potential and vice-versa. Thus, while there is a clear demand for entertainment attractions, success is related to the creativity of the design and its appeal, namely the 'imagescape'. Location is also linked to market assessment and the imagescape; heritage attractions may have little choice as to their location, whereas created entertainments have the possibility of locating where they can maximise visitor potential. The pattern of ownership has a major influence on the market structure and pricing. That said successful attraction development is about the creation of imagescapes that have strong associations for visitors, conform to taste and fashion, and are flexible enough to encourage repeat visits.

Keywords: Admission charges; attractions; development; imagescape; innovation; ownership.

12.1. Introduction

For the purposes of this chapter, 'a visitor attraction is a focus for recreational and, in part, educational activity undertaken by both day and stay visitors that is frequently shared with the domestic resident population'. Such a definition is designed to encompass the fact that every region and every town boasts of at least one attraction, adding to its appeal as a destination. However, it is too broad for statistical purposes, where the requirement for measurement requires enclosure so as to record visitor flows. More restrictive definitions may be found in Leask (2010), but they run the risk of excluding iconic attractions (Weidenfeld, 2010) at destinations that are available to everyone without charge.

Thus, the range of visitor attractions is extensive and there are numerous variations in respect of the product concept or creativity of the design and

its appeal, which may be termed the 'imagescape' to match the use of the word 'imagineers' by the Disney Corporation when describing its designers (Kirsner, 1988). The explanation here is that in order to enhance the visitor experience in an ever-changing threshold of engagement (Voase, 2008), this being the meeting point between production (of objects, activities and interpretive material) and consumption, the modern approach is to place, say, a thrill ride, a collection of artefacts, or even a nature-based attraction within the context of a specific theme or image in a particular setting or environment, hence the word 'imagescape'. It is, therefore, possible to classify attractions along a number of different dimensions: ownership, capacity, market or catchment area (Clawson and Knetsch, 1966), permanency and type. The most basic classification by type is to group attractions into those that are gifts of nature and those which are man-made. The former include the landscape, climate, vegetation, forests and wildlife, embodied in, say, country parks in Britain, lakes in Canada, mountains in Switzerland, the coast in Spain or game reserves in Africa. The latter are principally the products of historic cultural development of countries and civilisations (Jansen-Verbeke *et al.*, 2008; Timothy and Nyaupane, 2009), but also include artificially created entertainment complexes such as theme parks, of which the most well-known are the Walt Disney parks, originating in California in 1955, but now reproduced in Florida, Hong Kong, Paris, Shanghai, and Tokyo.

Going further, it will be appreciated that the basic classification may be sub-divided again into attractions which are site specific because of the physical location of facilities and therefore, act as a destination, and attractions which are temporary because they are events. International events that are regarded as world class normally stand alone as 'hallmark' activities, while others may be used to complement site-specific attractions (Getz, 1997). It is what is happening at the time that is usually more important for events than their location, so mega-events, such as the Olympic Games, and exhibitions on the scale of World Trade Fairs may move around the globe. But some evolve in and become specific to and are therefore branded by their location; thus several of the most spectacular events in the form of parades or carnivals have become associated with major cities, for example, the Lord Mayor's Show in London or the Rio Carnival. This is because towns and cities provide access to a large market and have the economic base and desire to support the increasing popularity of festivals arising from the growth in cultural tourism (Andersson and Getz, 2007). Complementarity may be achieved, for example, by staging a festival of the countryside to enhance the appeal of a country park or markets and fairs in towns and villages of

historic interest, and similarly for the performance of a Shakespeare tragedy in the courtyard of an historic castle. Events are also used to raise awareness and give animation to object oriented attractions, such as museums, and to encourage new and repeat visitors, particularly in the off-season.

12.2. Attraction Product

The accepted thesis in the 'post-Fordist' society is that to retain market position, suppliers should no longer sell goods with attached services but rather services with attached goods, so that each customer receives a bespoke package. Figure 12.1 presents an abstract construction of the attraction product where the core is the imagescape, the purpose of which is to convey the essence of the visitor experience to the potential market. The core is surrounded by commodities and services, which are combined to add value through experiences that generate memorable mood benefits (and in consequence attachment) for the visitor and support the core, in the manner of a 'product wrapper'. For example, within the performing arts, such as opera (Wanhill, 2006), facilities such as retailing, restaurants and bars, cloakrooms, first aid, special needs access, queue management, handling complaints, and car parking, as well as an augmented imagescape are provided to ensure that all customer experiential requirements are met. Components of latter include: friends'/patrons' associations, concerts, behind the scenes tours, inclusive dining, pre-opera talks and presentations.

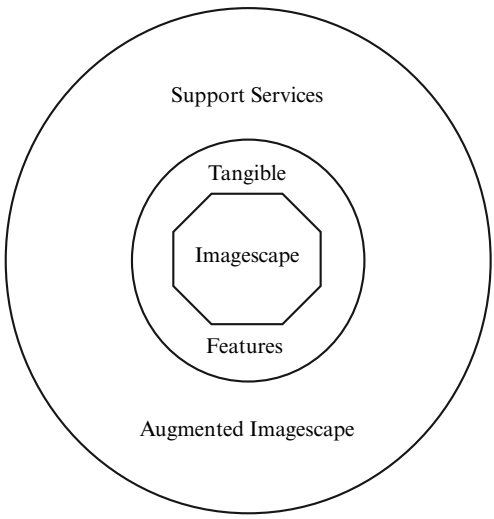

Fig. 12.1. The attraction product.

Table 12.1. Imagescape.

Armed forces	Industry
Art & media	Miscellaneous
Built environment	Myths & fantasy
Childhood	Natural world
Civilisations	Physical world
Dark subjects	Politics
Entertainment	Religion
Famous & notorious	Retailing
Food & drink	Science & discovery
Future	Society & culture
History & heritage	Sport
Hobbies & pastimes	Transport
Human body	War & conflict

When presenting the core, the diversity of imagescape themes for visitor attractions is beyond doubt extensive, as indicated in Table 12.1. Essentially, there is very little new in what draws visitors: the main attractions are still the wonders of the natural and physical world and the endeavours of human society, including, but to a much smaller extent, dark subjects that deal with what are considered to be behaviour inversions, such as the grim consequences of war (Smith, 1998), crime and punishment (Foley and Lennon, 1996), and the erotic. While the broad themes indicated in Table 12.1 may be globally enduring, their presentation may not. Thus animals in captivity in the form of zoos or safari parks are no longer acceptable to many people. There is a decline of interest in the straightforward presentation of collections for today's visitor, though some, such as gem stones and jewellery, are best displayed in this way. Despite the intrinsic value of historic buildings and collections, staging, interpretation using films, ICT and virtual reality, and good support facilities have become increasingly important. Using Rotterdam as a case study, Jansen-Verbeke and van Rekom (1996) demonstrate how museums can be an efficient marketing mechanism for urban tourism. The central motivation construct is 'learning something' as a means to enriching one's life and this is authored by the visitor. Noting this, Moscardo and Ballantyne (2008) develop the concept of 'mindfulness', namely allowing visitors to be in control and involved with their visit, and show how it can be used for designing effective interpretation, thus enhancing the quality of the experience. With the latter in mind, historical tableaux have developed from static wax museums to animatronic figures and living history portrayals, though the original Madame Tussauds still seems to

have universal appeal by simply allowing visitors to photograph themselves with the models of famous people. Today living museums, such as Colonial Williamsburg in Virginia and Beamish in the North of England, by using the interpretation and presentation technology of today to create a time capsule of yesterday, have crossed the boundary between a theme park and a museum. Thus, at any one time, the acceptance of the threshold of engagement of the imagescape is determined by fashion, which has its own dynamic that is born out of the spirit of enquiry and competition within society to alter its patterns of consumption and value systems. Fashion exists and is encouraged in the branding of everything that is purchased; if it were not so, the world would be cluttered with masses of still usable commodities and there would be little change in the nature of service provision.

As commercial operators well know, lack of content control as in the case of exhibitions that are made up of a variety of sponsors, or failure to communicate the imagescape at the right threshold of engagement in terms of the product offer and how to consume it, will lead to under-performance and possible attraction closure. In this respect, what is perceived as 'good taste' in society balances the desire to conform against the fashion to be different and so, while all attractions aim to achieve an element of surprise, it is important for general public approval that the content of imagescapes conforms to styles that are characteristic of the time. Therefore, for the market at large, it is of consequence that the bounds of taste should not be exceeded, unless it is a commercial attraction, such as the London Dungeon (a macabre exposition of medieval crime and punishment), which is designed to shock and appeal to the niche segment that is the voyeur and the bizarre. This is something that would not normally be acceptable in attractions owned by the public sector, although even here sensitivities have been changing. For example, in the 1980s the Victoria and Albert Museum in London was heavily criticised for using the marketing strap-line: 'Ace café with a rather nice museum attached!' to stimulate a re-appraisal of the museum by the public, something that is quite acceptable today.

12.3. Attraction Development

12.3.1. *Innovation and ownership*

The division between natural resources and man-made attractions is not always clear-cut. Both categories often require considerable innovation through inputs of infrastructure and management in order to use them for visitors; for commerciality and consumer choice are rather modern concepts, in the sense that the majority of today's attractions have not been brought

into existence for visitor purposes. Interest in innovation and the work of Schumpeter (1934, 1952) was revived by economists in the 1970s, owing to the failure of neoclassical economic theory to deal with the phenomenon of innovation in technological change. The neoclassical growth model considered technical change as an autonomous process, which is a level of abstraction that it is at odds with reality and policy actions taken by both the private and public sector in promoting research.

The essence of Schumpeter's theory is that the vehicle of economic growth is 'creative destruction' through radical innovation that disrupts existing technologies and creates new markets, collapsing old ones. This gives rise to a market structure involving firms that hold considerable power from competitive advantage and is the price that must be paid for innovative leaders in technological advance. Braun and Soskin (2010) illustrate this point for theme parks in Central Florida, which, at one time, were characterised by a dominant firm, Disney, and a competitive fringe. Expensive innovation by Disney acted as a barrier to entry (Dixit, 1980), thus allowing the market leader to earn supranormal profits (the reward for successful innovation). Subsequent entry by a comparable player in Universal Studios and the acquisition of the Sea World parks by Anheuser Busch 'contested' Disney's position (only to be recovered later), resulting in a more competitive market place (Baumol *et al.*, 1982).

On the other hand, infrastructure may also be put in place to protect the resource from environmental damage. In numerous countries, it is no longer possible to have open public access to many forests. Specific sites are designated for cars, trailers and camping, as well as colour-coded trails for walkers. Attractions that are the legacy of history and culture also share with natural resources the fact that they cannot be reproduced without considerable expense and alterations to their authenticity, unlike attractions designed principally for entertainment, so that modifications to the cultural capital stock are, in the main, irreversible. They therefore, deserve greater protection and management input to guard against excessive use. The innovation process is, therefore, a graduation from a situation of no adaptation (but rather controlled management) to visitor attractions that are fashioned for purpose, which is very different from the stereotypical image of monumental change as understood by Schumpeter's theory. A good illustration of the former case is Stonehenge, a prehistoric stone circle in southern Britain, which exhibits all the features of being resource-based and non-reproducible, so that, for some time now, it has been threatened by too many visitors. Measures to resolve this have been the construction of a new visitor centre some distance from the monument and putting a cordon around the stones to prevent them from

being further defaced by touching and in some instances, the chipping of the stones by capricious visitors. The surrounding area is an example of a tourist destination that owes its position on the market to this major attraction that is a World Heritage Site of uniqueness and appeal. Such attractions may particularly be beneficial to peripheral areas, whereas urban complexes often contain a variety within their borders. A major resource of this kind can be both an iconic and 'flagship' attraction, if it provides a locality with economic benefits over a wide range of businesses. It is for such economic regeneration reasons that governments sponsor tourism developments, although Pearce (1998) notes that public intervention in urban redevelopment in Paris had more to do with broader cultural considerations of image and political opportunism than the immediate economic gains from tourism. In this respect, more recent literature recognises a much greater variety in the nature and classification of innovations that may be appropriate for attractions (Booz *et al.*, 1982; Hjalager, 2010).

The actuality of having a spectrum of innovations with regard to visitor attractions is reflected also in the pattern of ownership, as shown in Table 12.2. Here the public sector is more likely to take on a stewardship role of what are considered to be national assets because of their historical legacy that limits innovation, while private sector firms may be much more innovative due to the need to maintain contact with consumers and their position in the marketplace. Observed ownership models indicate that most attractions are non-corporate, which absolves them of public shareholding constraints, while many are in the non-profit sector (public or voluntary) and so have a myriad of objectives (often conflicting), and mixed funding and operating methods arising from different ideals. Essentially the mission statement rather than the financial bottom line holds sway, which makes performance measures, particularly financial ones, hard to achieve and assess.

Table 12.2. Ownership.

Public	Voluntary organisations	Private
Central government	Charitable trusts (incorporated)	Individuals and partnerships
Government agencies	Private clubs and associations	Private companies
Local authorities		Corporations
State industries		

Publicly owned attractions may receive all or a substantial part of their funds from general taxation either directly or via grant-in-aid from quasi-public bodies. They are thus provided in the manner of a merit good and in so doing impose a degree of coercion on everyone, as individuals are not free to adjust the amounts that are made available save through the political process. Similarly, the development and preservation of many museums, historic houses, heritage centre and events have arisen out of the collections or interests of a group of enthusiasts who come together to provide for themselves and others, collective goods and services which are unlikely to have any widespread commercial appeal (market failure) and are equally unlikely to be of sufficient importance to attract central provision by the state. These organisations are in economic terms 'clubs', and because they normally have non-profit aims, they are entitled to claim the status of charities for tax purposes. However, in contrast to the public sector, they are not able to raise funds from taxation and so must cover their costs, in the long run, out of income. But, unlike the private commercial sector, their income is not always gained solely from admission charges and visitor spending inside the attraction. Membership fees, gifts, grants and bequests often take on a far greater significance in the income statement. As a consequence, recruiting new members to share the collective visitor experience is a priority task for these organisations. Rogers (1995) notes that in the UK, the attraction sector is cautious and conservative about admission charges, whereas a more active pricing policy could raise revenues, but it is evident that pricing is only one of a number of aspects to be considered (if at all) in the non-commercial sector. On the cost side, voluntary societies can benefit from their ability to attract labour inputs and some materials free of charge.

12.3.2. *Commercial development*

From a commercial standpoint, to paraphrase the famous dictum about hotels that has been attributed to Conrad Hilton: 'There are only three things you need to know about attractions: visitors, visitors and visitors!' No better example of this principle can be found in the Millennium Dome at Greenwich in London. It was designed as a celebration for the year 2000, but was judged by the press as a commercial attraction, so that the outturn of 6.5 million visitors for the year as against a forecast of 12 million was declared a financial 'disaster' in the media and the political arena, and an

embarrassment to the Government, although its purpose was to provide sufficient capacity to ensure that everyone who wanted to come to the celebration could do so. The initial grant from the Millennium Commission was for £399 million, but as its financial performance was below target, the Dome had recourse to more funds from the Commission, amounting to an extra £229 million. Although this money was designated as additional to normal state spending on education, health and welfare, the public's perception of the (encouraged by media reporting) was that the Government had got its priorities wrong and the Dome did not represent good value for money at a time when social expenditure was not matching need.

The difficulty is that once paying visitors are introduced to attractions in the public and voluntary sectors, then despite their mixture of ideological objectives, pressure builds up for the visitor experience, in support of admissions, to become the marketed output, as in the commercial sector. Yet, they cannot be compared to commercially established attractions that are seeking a return on capital invested. In theory this return, at a minimum, should be equal to the going cost of investment funds, and for new or 'venture' projects considerably more. On the other hand, where attractions are owned by multi-product firms or conglomerates, the ability of the facility to contribute to the cash flow of the overall business may be given a higher priority than return on capital. Production industries frequently have long lead times between incurring costs and receiving revenues. In these circumstances, the ownership of subsidiaries capable of generating ready cash inflows into the organisation on a daily and weekly basis can contribute greatly to total financial stability.

The key aspects to consider in developing an attraction are indicated on Fig. 12.2. Ideally the system is recursive, which begs the question of the running order. Logic dictates that the optimum path is Market > Imagescape > Location, but given the fact that most attraction developments are already proscribed by their nature and location (and are also non-commercial), this is a counsel of perfection that only has true force in terms of footloose businesses that can present subjects that are the focus of attention in a broad range of ways, so that it is only a matter of choosing the appropriate imagescape and scale. For example, Sea-Life Centres, which are modern aquariums, are not too sophisticated and require relatively small numbers to succeed, and so may be found in many coastal locations. But on the other hand, there are limited adjustments that can be made to the imagescape of a country park because the location is fixed and it has fairly unalterable intrinsic elements, so that change is restricted to adding support facilities

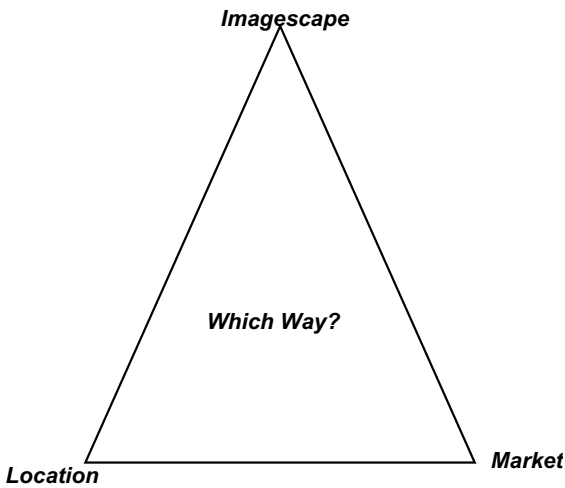

Fig. 12.2. The development process for an attraction.

such as a visitor centre to augment the imagescape. Similarly, a mining museum, that has a mine visit as part of the attraction, is tied by its location (Wanhill, 2000).

The most obvious examples of attractions that can follow the Market > Imagescape > Location path are amusement parks, because they are seeking to maximise their visitor potential, which is functionally related to the population (including tourists) catchment area within a specified drive time of up to two hours for cars and three to four hours for coach, bus or train. For instance, the Japanese company, The Oriental Land Co. Ltd., which has 100% ownership of Disneyland Tokyo (1983), is the first to acknowledge that their success is in large measure due to their location so close to Tokyo, giving a catchment area of 30 million people within one-hour's drive time (Jones, 1994).

In practice, the availability of large sites for land extensive entertainment complexes is often limited. There are many sites available for developers in North America, Australia, New Zealand and Asia, but both in Europe and North America, desirable sites near major cities are rare and dominated by planning controls, unless they become available under an urban renewal program. Urban sites are generally unsuitable for leisure parks due to: higher alternative use values as commercial, office or residential developments; the need for car access, which is no longer desirable in city centres; and, given the fact that most people live in cities, there is a desire for residents to travel outside city boundaries for leisure days out. This implies that sites near

motorways and railways are desirable. An exception is Copenhagen's Tivoli Gardens, but this is unusual by today's standards, for when it was first constructed in 1843 it was outside the original city boundaries. However, there is a modern trend in city centres to establish multi-storied leisure complexes incorporating 'high tech' leisure games and simulation. In the past, New York Central Park and Battersea Park in London were full of attractions and amusements, but no longer, as these parks are now valued for their environmental benefits.

Therefore, site availability may limit commercial attraction developers to a second best pathway that runs Imagescape > Location > Market, which incurs the risk of 'talking up the market', as in the Disneyland Paris case where the site was offered at 1971 agricultural prices as a consequence of the French government's desire to establish an economic growth pole in the eastern part of the Paris Basin (D' Hauteserre, 1997). What is important here is to recognise that location, market assessment and imagescape are bound to each other and the recursive process can become iterative over the development period of the attraction. Once the site is selected then the development can come into place, but the further the location is away from the optimal market position, the more appealing and exciting has to be the design content to 'pull' visitors in. Alternatively, the market assessment may be changed, which in turn can affect the imagescape. Either way, the calculations for the feasibility study will need to be revised at this stage and most likely continuously during the time it takes to translate the imagescape from idea into practice in order to keep abreast of market trends.

12.3.3. *Regeneration*

The regeneration and property development model typically follows a reverse pathway, Location > Imagescape > Market. In such cases, where old industrial buildings, disused market halls, railway stations and docks are located close to urban centres, it is fairly widespread to find public sector intervention, both at national and international level to convert them into tourist zones which serve both visitors and residents alike, as in Montreal and Singapore (Chang *et al.*, 1996). In this way, tourism has replaced manufacturing and distribution industries, which have left the inner core for more spacious and cheaper locations on the outskirts of the city and has been recognised as a feasible economic option and catalyst for community regeneration; for instance, the development of Baltimore's Inner Harbour, or South Street Seaport, New York, or the Albert Dock, Liverpool, UK or

Darling Harbour, Sydney, or the Victoria and Alfred Wharf, Cape Town. The base is often heritage and cultural activities (Bracalente *et al.*, 2011; Brown and Geddes, 2007; Viu *et al.*, 2008), but since leisure shopping is an increasingly important visitor and resident activity, there has been a focus on specialty shopping — as in Covent Garden, London — intermingled with hotels, leisure attractions and also business facilities — a convention centre, an exhibition hall or trade centre and offices in order to attract commercial developers. Thus tourism becomes the 'glue' that holds the area together, particularly where there is little else the local authority can do with such assets. A further trend in modern retail malls has been to provide an entertainment experience for the whole family through adding themed areas, health clubs, cinemas, performance venues, restaurants and bars to traditional shopping facilities in an enclosed space that can be open all-year-round. Such developments, for example West Edmonton Mall in Canada and the Mall of America in Minneapolis, have become noted visitor attractions in their own right and, given that entry is free, they have high levels of repeat visits (Finn and Erdem, 1995).

The ownership of regeneration development is mixed; frequently resulting from a private/public sector partnership in which the revenue earning activities are commonly in the hands of the private sector and the rationale for public participation is vested in the wider economic, social and environmental benefits that are bestowed. Even for commercially desirable urban sites, there is usually a percentage, around 15%–20%, devoted to leisure in order to obtain planning permission. One aspect to guard against where local authorities are involved is the danger of project inflation in response to civic pride and the vainglory of local politicians. This results in an exaggeration of employment creation to obtain development grants, increased complexity, which boosts consultants' fees, and substantial capital structures to the benefit of the architects. Several millennium projects sponsored by the Heritage Lottery Fund in the UK have gone this way and some have had to be closed or bailed out financially due to over-optimistic assessments (Richards and Wilkes, 2008). The lessons are straightforward: major capital projects should not be undertaken unless their market function is clear, visitor displacement has been considered and a 'proper' feasibility study has been carried out so that the nature of the risks involved are thoroughly understood and accepted. In defence, it is to be noted that market assessment for such unique attractions is notoriously difficult; the estimates of visitor numbers for the Dome in London ranged between 9 and 17 million (National Audit Office, 2000).

12.3.4. *Industrial attractions*

Industrial visitor attractions tend to pursue a path Location > Market > Imagescape. In the first instance, natural association with the place of production dictates the location, as for example, Cadbury World, Bourneville, near Birmingham, UK (1990), Tetley's Brewery Wharf, Leeds, UK (1994), Universal Studios, Hollywood (1964), Ford at Dearborn, USA (1999), Glenturret Whisky, Crieff in Perthshire, Scotland (1980), or Legoland, Billund, Denmark (1968), as they have almost universally developed from capitalising on the demands of consumers to visit the factory, brewery, studio or distillery. Not all are successful: Tetley's Brewery Wharf was closed in 2000 due to visitor numbers falling away. The imagescape of the attraction is built on consumer interest in the product and its history, and may be regarded as brand stretching or brand extension, so as to associate the attraction with the merchandise of the organisation and distinguish it from its competitors. Legally registering a brand, be it name, logo or design, protects the organisation's right to use it exclusively and enables the business to harvest the benefits of customer loyalty, reduced sensitivity to price and added value.

12.4. Visitor Attendances

The essence of the core of the attraction product in Fig. 12.1 and its development is the encouragement of repeat visits, unless the market for the experience is global, which therefore provides a catchment population that is to all intensive purposes infinite in size, since it is continually being replenished. Most attractions pass through a celebratory phase, either because there is a pent-up demand to see a collection as in the case of a museum or the project offers the newest experience in its field. The higher the proportion of first time only visitors in the market, the more peaked is the cycle and the greater is the drop to a sustainable level. Failure to grasp this point is the essence of Lennon's (2004) critique of science centres supported by the UK Millennium Commission.

Entertainment attractions, such as cinemas and theatres are able to survive on one time only purchases of the experience because they continually change the core, while theme parks embody thrill rides for which there is a repetitive demand that they reinforce with a rolling programme of replacement and re-theming to persuade their customers to return. Similarly, leisure shopping facilities continually replace their merchandise in line with fashion, but for the majority of visitor attractions that were not built for such purposes, their ability to maintain attendances is functionally related

to the size and dynamics of their market, and their capacity to alter the core imagescape and supplement it by special events and other supporting features. To this extent, national museums are at a considerable advantage because of the size of their collections; for example, the Victoria and Albert Museum, mentioned earlier has only about 3% of more than 4 million objects on public display, although more are accessible in its reading, study and print rooms.

12.5. Admission Charges

Within the Structure-Conduct-Performance paradigm for industrial organisation (Dwyer *et al.*, 2010; Stabler *et al.*, 2010), the general picture is one of many small differentiated attractions (monopolistic competition), with relatively few large 'aristocratic' attractions that are either owned by the public sector or in the hands of large corporations (from oligopoly through to monopoly). The complex nature of the attraction sector allows for all the three organisational forms to co-exist in a market structure whereby price setting and therefore, overall competition are heavily influenced by ownership patterns.

Figure 12.3 examines the normative economics of the appropriate pricing rules that may be followed. D is the demand schedule and market economics

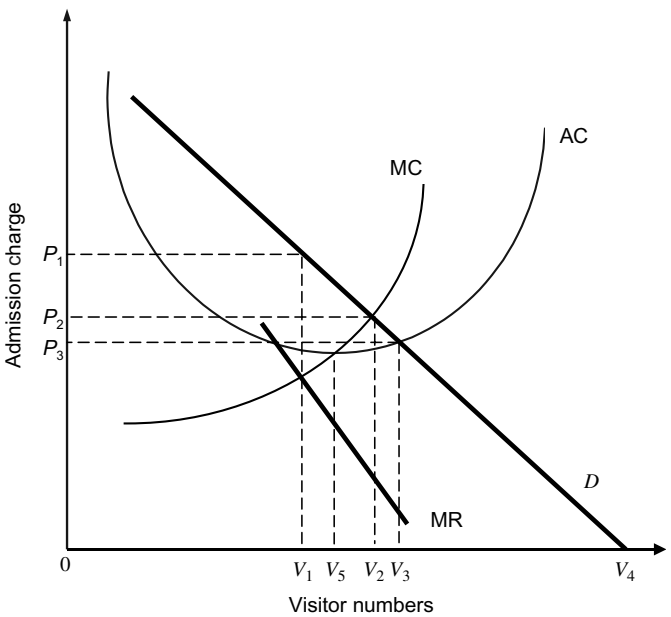

Fig. 12.3. Pricing rules by ownership.

dictate that private operators should attempt to optimise profitability, which is achieved by equating marginal revenue (MR) to marginal cost (MC), setting an adult admission rate of P_1 and attracting V_1 visitors — pricing according to 'what the market will bear'. In practice, contestable market conditions may give rise to limits on the price level and ease of entry under monopolistic competition will erode supranormal profits. On the other hand, modern ICT has allowed attractions to offer a whole range of prices to match different market characteristics and so improve yields.

The public sector, which has the interest of the economy at large, is faced with two economically efficient choices: free at the point of use, which results in a demand level of V_4, or setting admission equal to MC, implying a charge P_2 for V_2 visitors. The former typically applies to outdoor recreation areas or for attractions whose consumption the state wishes to encourage, while the latter is appropriate for state museums, where exclusion from consumption is possible. Equating P_2 to MC is the optimal pricing rule that would be obtained under perfect competition and represents the most efficient use of economic resources, for the price level is both lower and output greater than under monopolistic competition. Figure 12.3 depicts MC lying above AC, but it is common in attractions for MC to be small and lying below AC, which implies that even if governments charge for admission to public museums, they will still have to be subsidised directly from taxation if they are to survive. For the worlds' opera houses, it is a recognised principle that there is no reasonable ticket price that would allow them to survive without public subsidy and private giving.

The appropriate policy for the voluntary sector, if it wants to distribute maximum benefits to its members, while being mindful of its not-for-profit charitable objectives, is one of average cost pricing, setting a price P_3 to generate V_3 users, where V_3 may be interpreted in practice as visitors who are members and non-members. Generally, such operators tend to be 'fix-price' organisations, in that should demand increase in circumstances of limited capacity they will accumulate waiting lists for membership and extend facilities, rather than seek monopoly rents by raising dues. The optimum-sized club is at the lowest point on the AC curve, so in Fig. 12.3, it could be that attendance will be restricted to members and guests only at V_5, which is off the demand curve, and so $V_3 - V_5$ will be the waiting list for potential members, who may be allowed to attend as non-members. However, as noted earlier, voluntary organisations often provide their labour at little or no cost, due to their non-economic mission. Thus their cost curves could be lower and their optimum greater than that shown in Fig. 12.3.

A common approach to club membership is the two-part tariff (Phillips and Battalio, 1983), where the annual fee is designed to cover fixed costs and there is an ongoing charge to meet usage costs for meetings and activities. In the commercial sector, the annual fee is commonly segmented by membership category to extract the maximum willingness to pay (WTP). Thus through pricing policy, the pattern of ownership can alter the financial outcomes of an attraction and the nature of competition. A valid criticism of the not-for-profit sector, whether it is public or voluntary is that it has the inclination to try and do too much, because the management looks to meet perceived needs rather than market demand. To take a simple analogy; if people are asked if they want more of a collective good, then in the absence of a price system, they will surely vote 'Yes', putting the onus of the public sector to meet these needs, as there is a political incentive to do so. Failing public sector attractions rightly raise scorn from commercial operators who argue that if public funding and project inflation results in a situation where there is no relationship between the cost of delivering and what the customer actually pays, then this is a case of predatory pricing (technically defined as price less than the average variable costs of provision) in an over-supplied market that is likely to harm them commercially. Governments are sensitive to this kind of criticism and as a rule avoid trying to compete 'head on' with the private sector.

12.6. Successful Development

With visitor attractions covering such a wide setting, it is a moot point as to whether anything can be concluded as to what constitutes successful development, particularly when most attractions are non-corporate. Clearly, the attraction should meet stated and honestly intended goals, such as offering a quality experience, meeting visitor targets or ensuring continuous demand, and in so doing add more value (however measured) than it consumes. Fundamental to this is the relationship between the creativity of the imagescape and the market. It appears that some of the most successful attractions are those that have followed a reverse product development cycle to that normally understood in the production of commodities (Barras, 1986), in that existing products that are at the end of the supply chain, which have been developed for other purposes and in other industries, are adapted to provide a visitor experience with the aid of new communication techniques. Thus the Lego brick was well established as a toy long before the creation of the parks and similarly, the Disney

characters were well-known in the entertainment industry and as toys before the development at Anaheim. The imagineers were building 'reproductive' imagescapes: creations around already well-received products so as to call to mind positive images or happenings which the public knew how to consume, thus minimising risks.

Yet past success is no guarantee, for within the creative industries it is commonly stated that 'nobody knows' whether the launch of a new product will be successful, and the inherent risks are high. This was true for many now venerated cultural resources, monuments and works of art: thus one of the best loved of Verdi's operas, La Traviata, was not that well-received when it was first performed, there was fierce opposition to the Eiffel Tower and Van Gogh only ever sold one painting, *The Red Vineyard,* in his lifetime, because the audience had no prior perceptual experience of the creativity put before them and acknowledgement, which can come from experts in the field, as to its acceptability. This supports the view that avant-garde or 'anticipatory' imagescapes are difficult to evaluate in the marketplace, because there is no recognition at large of their value and so run the risk, as in the case of the Dome, of being lampooned in the media as the Emperor's new clothes, or causing public outrage when they run counter to what is considered to be good taste. Conversely, the London Eye, a Ferris wheel on the banks of the River Thames, is a tried and tested product attracting well over 3 million visitors, and has been heralded as a great success. The media are also capable of taking unknown attractions and developing them as reproductive imagescapes through their use as backdrops for films and television programmes (Riley and Van Doren, 1992; Tooke and Baker, 1996), boosting attendances and demonstrating that success is more likely to be attributed to 'reproductive' rather than 'anticipatory' creations.

Today, innovative architecture is evolving as an integral part of new attraction development. This lends weight to the argument often put forward by institutions dealing with these matters that arts and cultural attractions should be valued for their own sake as public goods that generate consumption externalities for society as a whole, such as adding to the creativity of the population, quality of life, identity, social criticism, aesthetics, pluralism and so forth. These are legitimate arguments for public provision or subsidy, but evaluation is still possible using surrogate market techniques to assess WTP (Herrero *et al.*, 2011), such as the Contingent Valuation Method (CVM). The term CVM is used because the responses depend on the hypothetical market situation that the interviewer describes to the consumer and non-consumer when the population at large is taken into the sample frame.

In this manner, CVM is the only method capable of estimating the total value (use, non-use and option value) of a cultural or heritage attraction for the benefit of the local community (Epstein, 2003).

12.7. Conclusions

When dealing with visitor attractions it will be readily appreciated that the number of permutations to do with the variety of imagescapes (Table 12.1), organisations (Table 12.2), and ways of classifying attractions are immense. From an innovation perspective, a useful classification is to place attractions on a scale that has at one end those that have been built or designed for visitor purposes, which are in the minority, and at the other, resources and facilities that can neither be for visitors nor can be adapted for them, with the bulk of attractions spread out between these two poles. This, in turn, is linked to the pattern of ownership and the multiple objectives that beset different ownership structures.

On the presumption that visitor numbers are a performance target, key attraction concepts — the Market, Imagescape and Location — and there linkages have been discussed, noting that for the majority of attractions their location is already proscribed by circumstances, which in itself has inherent dangers to do with being able to reach out to the market. Even for footloose attractions the availability of sites in the developed world is limited and found to be, in many instances, under public sector control. Within the commercial sector, attractions that are flourishing are often those that have followed the reverse product development sequence; namely, the creation of reproductive imagescapes from products designed for other purposes and in other industries. Similarly, in the not-for-profit sector, the reverse product development model supports the observation that winning museums are those that have good collections and use technology to add value to the experience. To take the technology route alone is to embark on a fashion cycle (similar to the 'two-year rollercoasterism' phenomenon of ride parks) that may be unsustainable in the longer term, though this route is not to be confused with major museums that sequentially update or renew their various departments as a matter of course. Successful innovation in attraction development is, therefore, about the creation of experiences that have strong associations with potential customers, enabling value for money to be easily recognised. They are distinctive, but not too different and are flexible enough to encourage visitors to return. Anticipatory or avant-garde imagescapes, which are about evoking expectations through 'pure' creativity, have a high probability of economic disappointment, both commercially

and also in the wider sense of attracting visitors and their expenditure to an area.

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Chapter 13

TRAVELLING FOR TREATMENT: THE EMERGENCE OF A MEDICAL TOURIST INDUSTRY

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Abstract: This chapter deals with the emergence of the market for medical tourism in developing countries. In this case, patients travel from high-income countries to get treatment. The factors that have led to a growth in demand for this industry are discussed. In addition, evidence is provided that this industry is growing. The costs and benefits are outlined of this industry to the medical tourist as well as to citizens in the destination country. This chapter finishes by exploring potential incentives and government regulations that could ensure that the costs and concerns associated with the industry are reduced.

Keywords: Health tourism; medical tourism; medical travel.

13.1. Introduction

The industry of medical tourism is growing. There is little consensus regarding the rate of this growth, although best guesses range from 20% per annum (Heung *et al.*, 2010) to 30% (Norton, 2009) based on the number of persons seeking treatment internationally. This excludes those travelling distances within countries to obtain medical treatment and therefore, is an underestimate. In addition, it is estimated that medical tourism contributes up to 60 billion US dollars annually to global businesses (MacReady, 2007). For the purposes of this work, medical tourism refers to the practice of travelling to another country to receive medical attention. In particular, this study focuses on the travel of people from developed to developing countries for medical interventions. Medical tourists commonly travel for cardiac, orthopaedic, cosmetic and dental surgeries, as well as fertility treatment, gender reassignment and general health checks. Developing countries that

*This contribution was written while I was in the School of Economics at The University of Queensland. I am very grateful for the excellent research assistance provided by Elizabeth Dernie.

are common destinations include Malaysia, Thailand, India and Singapore, which have been estimated to receive 350,000 (Hopkins *et al.*, 2010), 900,000 (Hopkins *et al.*, 2010), 450,000 (Hopkins *et al.*, 2010) and 350,000 medical tourists annually, respectively, in recent times.[1] When choosing to pursue medical treatment in these countries, tourists can purchase all-inclusive packages that include the cost of transfers by air and ground, visas for the destination country, accommodation, an escort from a local company, and the cost of their medical procedure.

Much has been written on the medical tourism industry, although most of this work documents either anecdotal or qualitative evidence. This chapter draws together the existing literature and provides some additional commentary on the topic. Specifically, it focuses on the reasons behind the emerging market in medical tourism and explores some of the advantages and disadvantages associated with the industry for both the tourist and host country. In addition, it presents evidence that people are increasingly turning to the Internet for information relating to medical tourism. This evidence is important given the premise that individuals are likely to turn to the Internet as a first step in pursuing medical tourism (Harvard Medical Letter, 2008; Connell, 2011). Finally, there is consideration of how some of the problems currently associated with the industry can be overcome by utilising economic incentives.

13.2. Why Has Medical Tourism Emerged?

The medical tourism industry is consumer driven. Intuitively, one would expect health services in developed countries to be better than those in developing countries. So why does the medical tourism industry exist? Firstly, citizens in developed countries may have trouble accessing health services in their own country due to long waiting lists or high costs. Secondly, there is a great deal of variation in the quality of health services in developing countries, with the potential for medical tourists to receive high quality care if they choose their destination and facility with care.

The high cost of healthcare in developed countries has been touted as one of the main reasons for the demand for medical tourism (Fallas, 2009; Resiman, 2010; Connell, 2011). This is particularly true for the US where

[1]These figures relate to 2007 with the exception of Thailand where the estimates relate to 2008.

it is estimated that 47 million persons are without health insurance coverage (Garcia *et al.*, 2010). In addition, uninsured families can only afford to pay in full for 12% of potential hospital stays with higher-income families still struggling with costs and only able to pay for 37% of their potential hospitalisations (ASPE, 2011).

High costs are generally not a concern for countries with more progressive systems. These countries provide care free-of-charge or require small co-payments through social insurance of State paid systems. Rather, in these cases, it is long waiting lists that may entice patients to seek treatment abroad. Examples of such countries include Canada, the UK and Australia where the waiting lists for many procedures range from many months to over a year. Long waiting times have been linked to patient deaths (Mahon, 2008; Plomp *et al.*, 1999). Furthermore, they can lead to deterioration in the patient's condition and intuitively the longer a person is on a waiting list, the longer they bear the burden of their complaint. In some cases waiting also has the potential to make the complaint even worse. Therefore, patients who are on waiting lists have a clear incentive to pursue medical tourism.

Pollard (2010) has estimated that some 50,000 citizens of the UK sought medical treatment abroad in 2009. Of course, having patients on waiting lists go elsewhere for treatment has the potential of decreasing waiting lists in the area that they leave (Dawson *et al.*, 2004), albeit the choice to go abroad brings with it a range of uncertainties that are discussed in greater detail below. This may be welcomed given that efforts have also been made to decrease hospital waiting lists, more often than not with disappointing results (Swethurst and Williams, 2001; Hamblin *et al.*, 1998; Freckleton and Sutherland, 2001; Wood and Thomas, 1985). However, the fact that a patient goes abroad for treatment raises issues of horizontal equity. That is, all else equal, it is likely that wealthier patients have the opportunity to avoid waiting lists and pursue care abroad more readily. In addition, they also have more funds to pursue a higher quality of care once abroad. This by definition is against the goals of health systems within countries that provide healthcare to all citizens equally regardless of income. Essentially, a two-tier system emerges.

Demand for medical tourism has also increased due to a lack of specific services in developed countries. As women increasingly delay pregnancy until later life, the need for fertility treatment to aid conception is growing. In the US, this is a high cost procedure, with some reports placing the cost at US$15,000 (*Newsweek*, 2010), which may not be covered by insurance. Even if it is, patients may require multiple cycles of treatment to conceive.

In countries with social insurance or a State run health system, fertility treatment is generally restricted. For example, since 2005, the UK has offered women between the ages of 23 and 39 one IVF cycle free on the NHS. Given that private treatment in the UK is prohibitively expensive, more and more couples are looking abroad for further treatments (Hancock, 2006) where it is possible to save half of the British price (Martin, 2009). This is also true for medical tourists coming from elsewhere (Blyth and Farrand, 2005; English *et al.*, 2001; Pennings, 2002).

Another procedure that is increasingly sought by tourists is gender reassignment therapy[2] (Connell, 2006). The most popular destination for this procedure is Thailand (Hancock, 2006), where patients are often treated in a hospital that is located in a resort area. There is the potential to save thousands of dollars on the cost of treatment, which in the UK is estimated to cost approximately £30,000 (Hancock, 2006) and is rarely covered by insurance policies.

Perhaps the most controversial reason to travel abroad as a medical tourist is to obtain transplant surgery (Budiani-Saferi and Delmonic, 2008). In developed countries, there are long waiting lists for, donors for organs such as kidneys, hearts, livers, pancreas and lungs. Waiting can have a severely detrimental effect on the patient. For example, studies have documented an acceleration of atherosclerosis in dialysis patients (Huysmans *et al.*, 1998; London and Drueke, 1997; Wheeler, 1996). Additionally, dialysis is associated with an increased accumulation of a variety of pro-inflammatory and pro-atherogenic factors that could adversely affect both the patient and graft survival post-transplantation (Zimmermann *et al.*, 1999; Lowrie, 1998; Wanner *et al.*, 1997; Gris *et al.*, 1994). Those waiting for organ transplants face an uncertain future, with no guarantee of a suitable donor being found. For this reason, they may go abroad to obtain this life saving procedure. However, going abroad for a transplant is not without its own concerns. In some countries, there is some uncertainty about where the organ may have come from. For example, while, evidence from doctors who have worked in China suggest that many patients travel to this country for kidney or liver transplants (Kumar, 2009), the British Transplantation Society has pointed to an accumulating weight of evidence that suggests that the organs of executed prisoners in China are being removed for transplants without consent (BBC, 2006).

[2]This is an umbrella term for medical procedures regarding gender re assignment of transgendered and intra-sexual people.

Organ harvesting is an extreme example of unethical and poor quality care, however a number of other concerns exist within the industry. Facilities in developing countries often claim to uphold a high quality of care (Bookman and Bookman, 2007; Hanson, 2008). Yet, quality of care issues are often cited as reasons to avoid medical tourism. These issues arise due to cultural and language barriers, uncertainty as to whether the medical team meets the standards of the tourists home country, and uncertainty surrounding post surgical after care. Obviously, a certain degree of anxiety can be expected while seeking treatment abroad. However, difference between the quality of care received in developing countries may not be as extreme as one would expect given that many of these countries rely on foreign born and educated doctors to meet their healthcare demands (Nakra, 2011). On the other hand, medical tourist guidebooks warn against seeking treatment in countries where culture differences exist (Connell, 2011). One of the biggest concerns associated with the medical tourism industry is the potential for a sub-standard level of care. With little data available on outcomes, the only evidence available is narrative and therefore uncertainty remains regarding the actual quality of care received by patients.

For those who pursue treatment abroad, an added concern is the risk of complications arising from their treatment when they return home. Providers in their home country may not have access to adequate medical records, and the ensuing medical costs may be high. The possibility of a complication is not low, given that developing countries have novel infectious diseases, which may cause problems in tourists who have not developed immunity from previous exposures. This risk is particularly high for those recovering from invasive surgery. Another concern is the long flight home after surgery, which increases the risk of thrombosis and blood clots.

There have been reports providing evidence of complications from surgeries carried out elsewhere, that need to be managed by the home country (Birch *et al.*, 2010), albeit information on such complications is hard to get (MacReady, 2007). Once again, this gives rise to the issue of horizontal equity, where a patient with the ability to pay, travels outside their home country to obtain a procedure only to draw resources from the system once they return home. It can be argued that these resources should not be made available to medical tourists, albeit such an argument is difficult to stomach when one considers the human consequences. In any case, legal recourse from the medical facility abroad may be fairly limited, difficult to obtain, or nonexistent (Reed, 2010).

Table 13.1. Costs in US dollars for various cardiac procedures in different countries.

Procedure	US	Singapore	Thailand	India
Bypass	100,000	16,500	11,000	9,300
Angioplasty	160,000	15,000	10,000	9,000

Source: Derived from Kumar (2009, p. 87).

Table 13.1 provides an indication of the comparative costs of various cardiac procedures in developed and developing countries. The differences in costs are significant and substantial.

13.3. Has the Medical Tourism Industry been Growing?

The medical tourism industry is growing, however estimates of the growth rates in numbers participating in medical tourism vary greatly. For example, Deloitte has suggested the global market is growing by 30% each year (Norton, 2009) whilst others estimate an annual growth rate of 20% (Heung *et al.*, 2010). In 2007, the industry was estimated to have a global value of $60 billion US dollars (MacReady, 2007), with an expected value of US $100 billion in 2010 (Norton, 2009).[3] For individual countries, the estimated value of the industry was $0.4 billion in Malaysia for 2005 (Hopkins *et al.*, 2010), $0.85 billion in Thailand for 2008 (Hopkins *et al.*, 2010), between $0.3 billion (Hopkins *et al.*, 2010) and $0.5 billion in India for 2005 (Horowitz and Rosenweig, 2007), and $0.6 billion in Singapore for 2004 (Hopkins *et al.*, 2010).

Much of the emergence of the medical tourism industry is credited to consumer searches on the Internet (Harvard Medical Letter, 2008; Connell, 2011) and most of the big medical tourist hospitals have an Internet presence (see Hancock, 2006). In addition, the presence of brokers in this market is very common. Their role is to organise all details of a medical tourist's trip and again, these facilitators have a web presence (see Hancock, 2006). It is possible to search online for a health service provider, determine their accreditation status, opt for an online concierge service that makes the necessary arrangements and, more recently, check whether a patient's health insurance package includes the option of 'outsourced' healthcare (Reed, 2010).

[3] *Note*: Dollar values in this chapter are all in US dollars unless otherwise stated.

Given the clear role of the Internet in the emergence of the medical tourist industry, it is feasible that data on Internet searches can give some indication as to whether this industry is growing. That is, looking at data on Internet searches gives some idea of the interest in this industry. This is in line with previous research that suggests a significant number of individuals who use search engines to find information regarding a health problem that affects their lives (Baker *et al.*, 2003; Lam-Po-Tang *et al.*, 2010; Weaver *et al.*, 2010). Therefore, Google Insight, which provides data from 2004 on the relative number of searches for particular search terms, is utilised to gauge interest in this industry. Google Insights is a relatively new data source, however it is being utilised in a growing number of papers (Tefft, 2011; Choi and Varian, 2009; Askitas and Zimmermann, 2009; Kahn and Kotchen, 2010; Pelat *et al.*, 2009). Relevant data relates to the search terms, 'medical tourism' or 'medical travel' or 'health tourism', which links to interest in the medical tourism industry. Data emanating from these searches for Australia, Canada, New Zealand, the UK and the US are illustrated in Fig. 13.1. On the

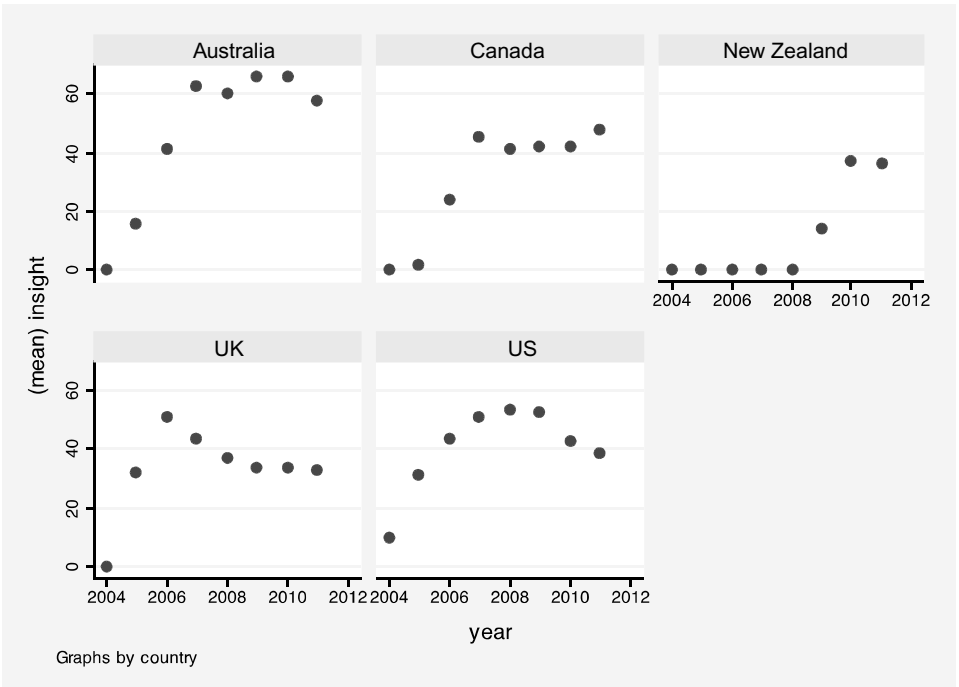

Fig. 13.1. Google Insight Data across selected developed countries between 2004 and 2011 indicating annual percentage changes in the number of searches.
Source: Google Insights.

Y-axis are the Google Insights data and on the X-axis are the relevant years (2004–2011). The data retrieved from Google Insights pertains to relative frequencies, rather than absolute counts, therefore the graph can be interpreted as showing a percentage increase in searches by country from year to year.

Figure 13.1 clearly shows an increase in all countries for Google searches relating to medical tourism from 2004–2011. However, trends in increases vary, with some countries exhibiting decreases in the rate of increase in the past two to three years. Nevertheless, there is a consistent presence of searches relating to the medical tourism industry, which suggests that the industry has a significant presence in each of these five countries. Given the asymmetric information problem that exists between patients and medical practitioners, one has to question whether patients inquiring or indeed organising their care (as many do Connell, 2011 and Harvard Medical Letter, 2008) through the internet can lead to satisfactory health outcomes. A solution for this concern is subsequently discussed.

13.4. Effects on the Medical Tourist Destination

On the surface, the medical tourism industry generates increased revenues for the host country, both in terms of the monies paid for the medical package and the monies spent whilst the medical tourist stays in the country. In addition, it is likely that the person who travels for treatment brings a companion, again adding to tourist revenues. The additional revenues received by the hospital for providing the treatment can be viewed as an opportunity to expand the facilities and to invest in new technology.

While an expanding medical tourist industry will certainly increase GDP at a macro-level, a question remains as to how these additional resources are distributed in the developed country. Ideally, we would see evidence of greater access to medical care for those on low income, however there is no evidence that these gains have transpired. Some governments have offered incentives to the industry, such as subsidised land and reduced import duties for medical supplies, in exchange for facilities treating a certain proportion of domestic patients free of charge. However, there have been claims that hospitals are failing to honour the conditions tied to these subsidies (Kumar, 2009).

While the previous argument suggests that those of low income may not gain from the presence of the medical tourist industry, there are also some scenarios where they may lose. Ideally, the industry should aid in curbing the brain drain of medically qualified individuals from developing

countries. This is a feasible scenario, given that the expansion of the industry implies the availability of funds to pay higher wages to healthcare workers and improve the facilities and technologies of medical centres, thus making them a better place to work. However, there is little evidence that this has occurred. In fact, the industry may be having a detrimental effect by shifting medical specialists from areas that are most in need to affluent urban areas thereby exacerbating inequities and further weakening the health system of the developing country (Gupta, 2004). Clearly, the local disadvantaged citizens are particularly vulnerable to these changes as private clinics are priced out of their reach (George, 2009). Essentially, this implies an internal brain drain from the public to private sector. In effect, the disadvantaged populations in developing countries may be inadvertently subsidising medical tourist destinations.

13.5. Using Economic Incentives to Address Major Concerns in the Medical Tourism Industry

The above discussion highlights major concerns about the medical tourism industry. These include uncertainties regarding the quality of care and after care, horizontal inequities in the medical tourists' country, asymmetric information problems when organising care through the internet and zero gains and actual losses for poorer people in developing countries. Addressing these concerns is important given that the medical industry is likely to have a global presence in the future. This section aims to outline some ways that government regulation and economic incentives can address these concerns.

Firstly, considering the issue of quality of care and after care, there are already some structures in place. The American Medical Association (AMA) has published a guide[4] for employers, insurance companies, and other entities that facilitate care outside the US. Essentially, the guidelines suggest that care must be provided by an accredited institution and not be in response to financial incentives that inappropriately limit or restrict patient options; there should be continuity of care; patients should be aware of their legal recourse; patients should have access to accrediting information when seeking care and medical record transfers should comply with Health Insurance Portability and Accountability Act (HIPAA) guidelines. It has, however, been argued that these guidelines may be unrealistic (Reed, 2010). Similarly, the American Dental Association provides

[4]http://www.ama-assn.org/ama1/pub/upload/mm/31/medicaltourism.pdf.

informational documents that can be useful for travellers seeking dental work abroad (Reed, 2010).

Even though guidelines are useful, they are not sufficient to guarantee a certain level of quality of care. In this regard, a number of accreditation boards have been created in order to provide some way of identifying high quality hospitals abroad. For example, the Trent Accreditation Scheme, which since 2010 has been replaced by a number of independent accreditation schemes, was set up in Britain in order to maintain and evaluate standards of quality, through the surveying and accreditation of healthcare organisations, in the UK and elsewhere in the world. The Joint Commission International (JCI) is another and has accredited over 300 hospitals or clinics in 39 countries around the world. However, this does not guarantee that the hospitals certified will be of the same quality as hospitals at home, rather it suggests a certain level of quality that satisfies these schemes' criteria. Additionally, recognising the growth in brokers, organisations such as the Medical Tourism Association have fledgling a program to certify medical tourism providers (Medical Tourism Association, 2009).

Clearly having organisations that certify the quality of health organisations and brokers is a positive, however it is not sufficient to guarantee a certain level of quality of care nor to address the problem of responsibility for treatment once the medical tourist has returned home. The only means for these concerns to be addressed is to either (1) make clear to medical tourists that they have no recourse in their home country unless they pay private fees if they pursue medical tourism, and explicitly recommend them against pursuing such care or, perhaps more realistically, incorporating the option for medical tourism in some manner into the developed countries own healthcare system. For countries whose system is based on private insurance, like the US, (2) implies that options to travel abroad for medical tourism would be included explicitly in health insurance plans, with certain hospitals and countries certified explicitly by the insurance company, which could draw on recommendations given by the JCI. Clearly, this would allow cost savings as private health insurance companies reap some of the benefits of the lower cost of medical tourism. It would also be possible to pass some of these cost savings back to the consumer in the form of lower premiums. Additionally, if such a scheme were adopted there would be a downward pressure on costs in the developed country's hospitals (in our example the US), allowing for some greater cost efficiency and benefiting patients who choose to pursue care at

home. The gains here is dependent on the magnitude of the fixed costs component of a hospitals cost base, which if large may make it impossible for them to lower costs and make the continuation of their operations uncertain. Therefore, more realistically for countries whose system is based on private insurance, an option is to introduce medical tourism for certain procedures initially and monitor impacts. This option is not far-fetched given that many US firms already have out-of-country travel options in their health insurance plans (Yi, 2006). In several states, Blue Cross Blue Shield also sells insurance policies that enable or encourage patients to have expensive surgical procedures at low-cost offshore medical facilities (Appleby and Schmidt, 2006; Konrad, 2007). Additionally, West Virginia has considered legislation that will provide financial incentives to state employees willing to travel outside the US for health care (Appleby and Schmidt, 2006).

For countries whose health system is paid by the State, embracing medical tourism provides a means to decrease waiting lists. That is, incorporating medical tourism into this system by allowing patients to choose to travel to accredited hospitals in developing countries can remove these patients from the waiting list. In addition, given that the hospital the patient attends will be chosen by the health service itself, these can be reimbursed fully or subsidised by the home government, with the option to address complications in public hospitals once the patient returns home. This allows the State to monitor hospitals with excessive complications and remove their accreditation in the event of excess adverse events. If this is done on a multinational level, say at an EU or OECD member level, losing accreditation would be enough of an incentive to ensure that the relevant hospitals work hard to maintain a good standard of care.

For countries where the cost of treatment is the issue (e.g., the US) or waiting lists are the concern (e.g., the UK), the schemes mentioned above could also be extended to allow for some recuperation of costs in the case of excessive complications. Specifically, a viable scheme would revoke accreditation in the event that the offending hospital did not cover the costs of care of these complications. Additionally, for countries whose health system is based on egalitarian values, such as social insurance and State funding, horizontal inequities are no longer a great concern given that the option of medical tourism is now more open for lower income patients — that is, individuals under this scheme would receive State paid or subsidised care abroad.

Additionally, the schemes described above would address the asymmetric information problems when organising care through the Internet as medical tourism is now a viable part of the health system and the patient can get advice from their primary care provider or (if relevant), their health insurance company. However, in the absence of such schemes there is a need to address the problem of asymmetric information in the short run given that adverse outcomes can have catastrophic costs. While the accreditation schemes described above are a start, there is clearly a more complete role to play either at a governmental level or through a countries national medical association to ensure that the website that comes back first when a person searches for medical tourism is an accredited website. Better still, a role of collating information regarding all of the accredited hospitals and the adverse events reported for particular hospitals could be assumed. This task would not be too difficult and could result in considerable savings in terms of human and monetary costs if the wrong hospital is chosen for a particular procedure.

The final problem arising from the medical tourist industry is perhaps the most important. This issue pertains to the lack of evidence that the industry is easing inequity concerns regarding access to healthcare for the disadvantaged in the destination country. In fact, as previously discussed, there is a growing sentiment that the presence of the medical tourist industry may actually be exacerbating these inequities. Addressing this concern is particularly important, given the burden of disease in these countries that disproportionality affects the poor (National Commission on Macroeconomics and Health, 2005). Clearly there is a need for the government in the tourist destination to create incentives to address these concerns. More importantly, the incentives and their response need to be enforced.

Ideally, incentives would be created for health care-providers to stay in the most needy areas to avoid a brain drain from the public sector. This would then sustain (and perhaps increase) access and the quality of care for the poorer populations of the destination countries. However, it is unlikely that the public sector can match private sector salaries; therefore, other options should be considered.

Within areas that have private hospitals that cater for the medical tourist, options to address inequities include mandating a particular percentage of outpatients and inpatients to be public patients who are below the poverty line, delegating specific public wards within the private hospital, mandating that these hospitals need to run a public clinic or setting laws that the medical staff working in the private hospital need to delegate

some of their time weekly to working in a public hospital setting. In return, the government can consider 'carrots' such as tax breaks or simply consider these as 'sticks' and make them part of the regulation at private hospitals.

Most private hospitals are unlikely to be located in areas where the poorest of the populations are (for example, rural areas or urban slums), making the options outlined above futile in addressing inequities for these populations. In this case, incentives for private hospital staff to work in these areas could be considered. For example, lower taxes for the staff of private hospitals that spend a significant time annually working in truly deprived areas with tax breaks for hospitals that encourage such staff movements. Alternatively regulations could make it necessary for staff intending to work in private hospitals to spend a period of time working in needy areas prior to employment. Getting the balance between these incentives is important given the third option available to private hospital staff — that is, they can simply move abroad!

13.6. Conclusions

Overall, supporters of medical tourism herald patient choice, lower costs, faster access to care and access to treatment alternatives not found in the home country as reasons in favour of expanding this industry. In addition, it has been argued that medical tourism fosters global competition, which can put a downward pressure on health care facilities in developed countries (Turner, 2007). However, several problems associated with this industry have been outlined, most notably quality of care and after care concerns, horizontal inequity problems, asymmetric information problems as consumers rely on internet searches for information, and (most troubling) the possibility of exasperating inequities within the developing country. This contribution outlined some solutions for these problems in terms of 'carrot' and 'stick' economic incentives, as well as possible government regulations. It has been shown that interest in the industry has grown in five countries since 2004. Additionally, there is every chance that the medical tourism industry will continue to grow, given that the ageing population in developed countries is placing a greater burden on local health systems. Also, the current budgetary troubles experienced by many developed countries make it difficult to devote more resources to the health system. It is important to address the concerns outlined in this work so that medical tourists can pack their bags in the expectation of quality treatment that will not adversely affect them, their own country or their destination!

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Chapter 14

EDUCATION TOURISM

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Abstract: Higher education has long been marked by externalities and information asymmetries. In a globalised world economy, universities find themselves in an increasingly competitive market, no longer generally serving essentially local markets. At the institutional level, increased priority is accordingly placed on reputation, ranking, marketing activities, and teaching performance. Institutional ranking still depends essentially on research performance, but conflicting tensions manifest themselves regarding research and teaching activities. In some cases, fees from non-domestic (overseas) students now account for a significant proportion of annual operating costs of universities, and marketing activities are an increasingly important part of university life. At a more general level, the influx of foreign students makes its mark not just on the host institutions, but also on the host economy. Education is now sometimes a major export activity, e.g., in Australia. As such it is a stakeholder (like tourism more generally) in national economic debates about exchange rates and major determinants of fluctuations in them, e.g., as the current Australian mineral boom pushes the terms of trade and the national exchange rate higher, to the detriment of education exports. With large numbers of Chinese, Indian and other students from developing nations providing a large pool of fee payers looking for both a university and a country to study in, academic offerings — combined with ability to acquire English (or other) language proficiency, and even visa and residence rights — have taken on an enhanced economic significance as 'education tourism' asserts itself as a major industry.

Keywords: Education exports; education services; exchange rates; higher education; visas.

14.1. Introduction

UNESCO (2009, p. 3) notes that largely because of rapid changes in Asia there has been unprecedented global growth in the number of tertiary students, especially since 2000. This number approached 153 million in 2007,

and for every 100 tertiary students in 2000, there were 150 students in 2007. New trends in international student mobility reveal that there are now over 3 million internationally mobile tertiary students pursuing their education outside their home countries, and by 2020 UNESCO predicts that the number of internationally mobile students might rise to approximately 7 million. 'This mobility of students alone accounted for more than US$40 billion in export income in 2004' (UNESCO, Bangkok, 2011).

The destinations most preferred by international students are the United States, the United Kingdom, Germany, France and Australia, while on the education demand side, Chinese students now account for more than 18% of total international students (OECD, 2011). The USA is a clear front runner as a host country, but in relative terms the impact of foreign students reaches its peak in Australia's university system, and Australia is, therefore, used in this paper as the principal case study.

Just like the leisure-tourism industry, education tourism — or the export of education services — is now a major foreign exchange earning industry for the Australian economy (Reserve Bank of Australia, RBA, 2008; Duhs and Duhs, 1997). As the Reserve Bank (RBA) notes, in 2007 education exports ranked as Australia's largest services export (RBA, 2008, p. 17), having displaced leisure travel services from that position. Indeed, to underscore the importance of the sector, the RBA (RBA, 2008, p. 12) adds that Australia's education services exports have continued to grow in importance in the 2000–2010 decade, and are now Australia's third largest export earner, behind only coal and iron ore. Since 1982, education services exports have grown at an average annual rate of around 14% in volume terms, with their share in the value of total exports increasing from less than 1% to almost 6% in 2007.

This 14% annual rate of growth in education service exports since 1982 compares with a growth of about 6% in overall exports (and in total services) (RBA, 2008, p. 13). Education exports have accordingly increased as a share of total Australian services exports from under 4% in 1982 to 25% in 2007 (RBA, 2008, p. 13).

Since the 1980s, Australia has in fact become a major player in the international student market (see Fig. 14.1), offering globally recognised courses and qualifications. Indeed in 2004, Australia was the fifth largest destination globally for overseas students, attracting 6% 'of all tertiary students enrolled outside their country of residence. . . . The number of overseas visitors arriving in Australia to study in 2005 was 375,000, more than ten times the number (30,000) that arrived in 1985'. (Australian Bureau of Statistics, ABS, 2007, Abstract and Introduction). In the context of strong growth for transnational education in the last two decades or more, the Australian

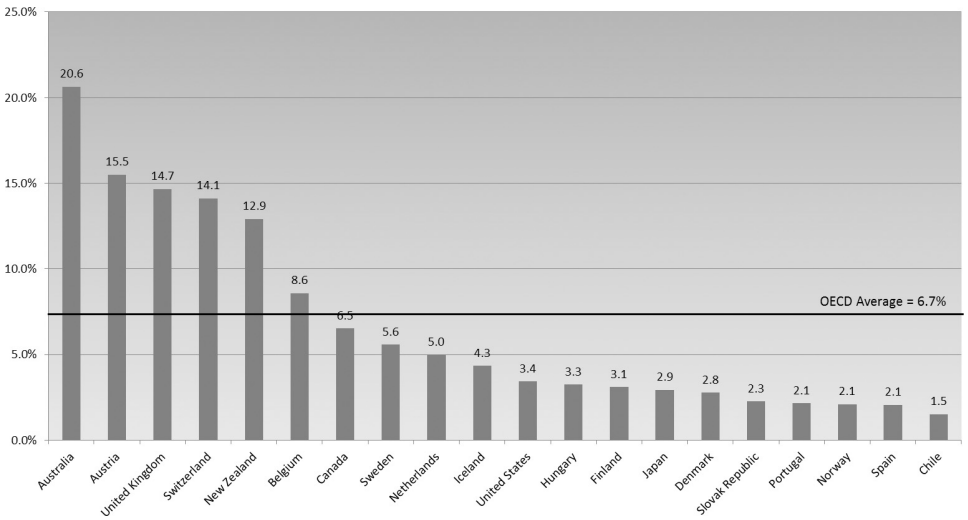

Fig. 14.1. International students as a percentage of total tertiary enrolments.

Source: Based on OECD, *Education at a Glance 2010*: OECD Indicators (Table C2.1).

Bureau of Statistics (ABS) notes that 'According to the OECD there were 2.7 million tertiary students worldwide enrolled outside their country of residence in 2004, an increase of 41% since 2000 (1.9 million students) and over 200% since 1985 (0.9 million students)' (ABS, 2007, Introduction). In 2005, overseas students accounted for about 18% of all higher education students in Australia. (ABS, 2007, Introduction). In the financial year 2004–2005, the international student market was valued at over AUD9 billion in export earnings, and in 2005, revenue from full-fee paying overseas students represented 15% of all revenue within the Australian higher education sector (ABS, 2007). By 2010–2011, the Australian export industry was valued at some AUD18 billion. Indeed, some public concern is now being expressed about the extent to which the financing of the Australian higher education system is rested on fee-paying international students.

Walters (2011, p. 4) notes that 'The latest Organisation for Economic Co-operation and Development (OECD) data available (for 2008) positioned Australia as the fifth-largest destination for international tertiary students. Australia also has the most internationalised tertiary sector worldwide, with international students making up more than 20% of enrolments'. Walters (2011, p. 5) adds that 'The OECD estimates that students educated outside their home country grew from 1.1 million in 1980 to 3.3 million in 2008. This is forecast to rise to eight million by 2025'.

14.2. Size and Significance of Education Tourism

Exports of education services reflect not just tuition fees, but also the living expenses of foreign students living in the host country. In Australia's case, tuition fees accounted for 39% of overseas student expenditure in 2007, with the rest coming from expenditure by foreign students on goods and services, including accommodation, food and transport (RBA, 2008, p. 12). Exports of education services can be delivered onshore or offshore, with the indirect benefits to the exporting country obviously being greater in the former case. In 2007, 'around 97% of the $12.6 billion of education services exported ... was delivered onshore through foreign students studying in Australia' (RBA, 2008, p. 12).

14.2.1. *Significance for host economies*

Over the last two decades, higher education has been the fastest growing component of Australia's education exports, which themselves have been a fast growing component of total exports. In 2007, higher education represented 60% of all education exports and 3.4% of total exports. Coal, the biggest single export, accounted for 9.5% of the Australian total (RBA, 2008, p. 17), meaning that the value of higher education exports was equal to more than one-third of Australia's coal exports. Clearly, this is a significant industry. Whereas Australia once rode on the sheep's back, it now rides mainly on the back of a dump truck carrying coal and iron to overseas markets, while increasingly also clinging to the shirt-tails of academic instructors who provide education exports and thereby help diversify and expand Australia's services sector. In the popular mind, universities do not look like smokestack factories churning out exports, but — minus the smokestack — that is nonetheless what they now are. Moreover, they are clean and green, as well as sources of jobs, productivity growth and export revenue.

Two factors largely explain the rapid expansion of Australia's education exports in the last three decades:

1. Changes in government policies towards the education sector, and
2. Growth in the world economy, and structural changes globally.

Australia's provision of education services to non-residents was once a matter for its Foreign Aid program, with a cap on the annual quota accepted, but a new, commercialised approach emerged in the mid-1980s. Universities, colleges and schools were, thereafter, allowed to offer places to full fee-paying overseas students, and an education exports — or 'education tourism' — industry was born. Visa entry procedures and requirements were also refined

to further help education institutions to market their courses internationally. In consequence, there has been a marked rise in the proportion of Australian university funding sourced from fee-paying overseas students.

At much the same time as these education policy changes were occurring in Australia, various Asian economies sustained a growth boom, resulting in rapid growth in their demand for education services. Accordingly, most economies with an established education sector have seen vigorous growth in incoming Asian student numbers, although Australia in particular has gained from its closeness to Asia, from its prominence in trading relationships within the region, and from its ability to offer the attraction of English-language courses. At least until the rise of the Australian dollar in foreign exchange markets in the last several years, price-competitive tuition fees also worked in Australia's favour. As the Reserve Bank notes (RBA, 2008, p. 15), 'in 2005, Australia ranked as the fifth largest recipient of overseas higher education students among OECD countries and the third largest English-speaking destination for overseas students behind the United States and the United Kingdom'.

14.2.2. *Importance of Asia as a market, and prospects for future growth*

Australia's education exports remain highly dependent on Asia, with nearly 80% of Australia's overseas students coming from Asia (RBA, 2008, p. 15). In recent years China and India have come to dominate this market, in reflection of both their rapid economic growth and their huge populations. As source countries the relative importance of Indonesia, Malaysia and South Korea has therefore receded, although it remains prudent of course to preserve diversity in maintaining such markets, bearing in mind the competitive risks that arise from fluctuations in exchange rates, the marketing efforts of other exporting countries, and such events as the 1997 South East Asian economic crisis. The combined share of China and India in Australia's education exports rose from less than 10% in 1997 to over 33% in 2007 (RBA, 2008, p. 16).

Any drop in China's extraordinary economic growth rate could therefore have significant implications for the Australian education export trade, although indications are that even if China's growth declines to 7% per year as it seeks to rebalance its economy away from investment-led exports — towards consumption, and towards services and away from manufacturing (Asian Development Bank Institute, 20 June 2011) — a services orientation in future Chinese growth would still be education-intensive. Indeed,

if Chinese growth slows as investment demand diminishes and attempts are made to shift income to households, upward pressure on Australia's exchange rate should ease in response to slowing Chinese demand for minerals, to the advantage of Australia's services exports, including education tourism.

Some Australian universities have established offshore campuses in Asia, as Asian governments move to increase their own domestic capacity in higher education. Indeed, in 2006, about one-quarter of overseas students enrolled in Australian higher education institutions were studying at an offshore campus of an Australian university. As the RBA notes (RBA, 2008, p. 17) any such shift by Australian universities to the offshore provision of education services has the potential to erode Australia's education exports since services provided by these offshore campuses are not considered to be Australian exports. This is so because the service is provided by an institution that is not present in Australia, to a student also non-resident in Australia (although any profits will be included in the balance of payments). To the extent that these offshore campuses are commonly used as a pathway for their students to complete their studies in Australia, however, it remains the case that this effect may yet be offset or reversed.

In this context, it is noteworthy that by 2015, China is likely to become the No. 1 international leisure tourism source market in the world. From 1995 to 2010, global tourism figures increased by 73% while the Chinese figure grew by a remarkable 815% (Arlt, 2011), and there are obvious possibilities for developing complementarities between the expanding markets for leisure tourism and education tourism. Davidson *et al.* (2010) note that international students generate a large VFRs (visiting friends and relatives) market.

14.2.3. *Significance for universities*

Figure 14.2 shows the percentage of their revenues obtained by each of the Australian universities from overseas student fees in 2009. It can be seen that the degree of dependence on this source of income varies considerably between universities. It ranged from over 35% for Central Queensland University to just 3% for Charles Darwin University. The average degree of dependence of all Australian Universities on the source of income was 16.68%. Apart from now being a major foreign exchange earning industry for the Australian economy (RBA, 2008; Duhs and Duhs, 1997), education exports clearly also have major significance and implications for Australia's universities.

For universities, the overseas student market does more than generate revenues, since overseas enrolments can help educational institutions reach

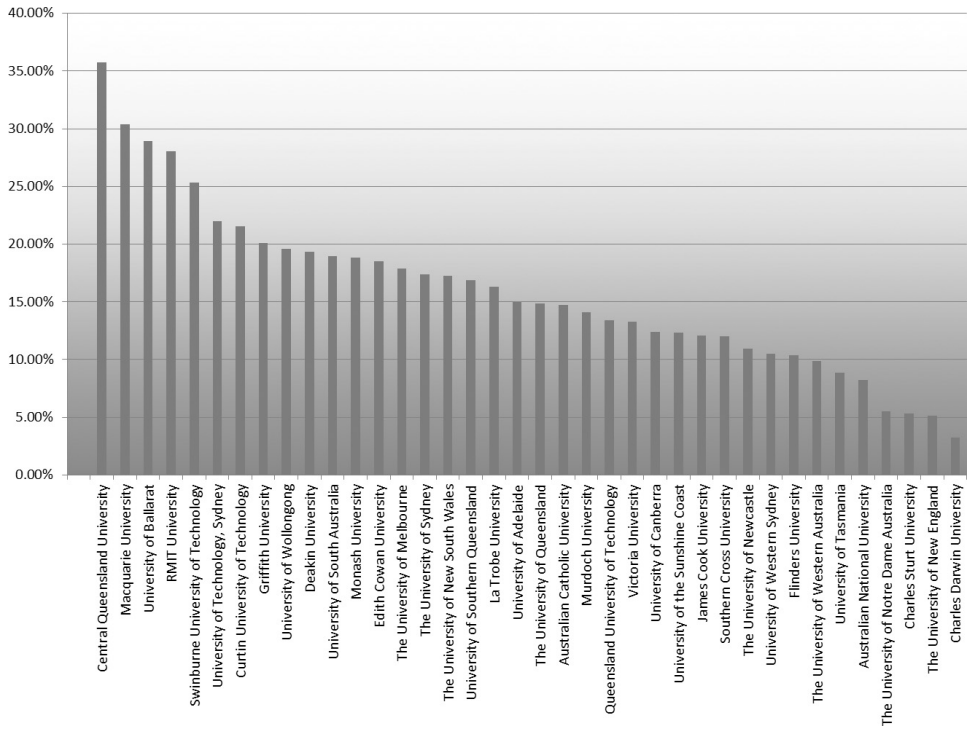

Fig. 14.2. Overseas student fees as revenue sources for Australian universities.

Source: Based on Department of Education, Employment, and Workplace Relations (deewr). Available at http://www.deewr.gov.au/HigherEducation/Publications/FinanceReports/Documents/Finance2009.pdf.

the critical mass needed to diversify the range of educational programmes offered to all students (which is important in countries of relatively small population), and the presence of international students also offers local students the opportunity to broaden their knowledge of other cultures and languages.

The influx of foreign students reflects a heavy leaning towards degrees in business and economics, tending to make commerce faculties the richest within Australian universities. In itself this should have spinoff benefits for the Australian economy insofar as these riches finance expansion of social science research, which on the whole is less directly transferrable to the local economy from global research sources than is research in the physical and life sciences. Round and Shanahan (2010, p. 428) note that 'International students now compose around one-third of all those graduating with an Australian economics degree'.

In Australia, international students are full-fee paying students whereas domestic students remain subsidised subject to government fee regulations, so increased marketing efforts are accordingly put into the task of attracting international students. This sometimes leads to complaints that international students from non-English-speaking backgrounds are allowed to underperform because a blind eye is turned to poor written and verbal English skills, largely for revenue reasons. Foster (2011) analysed detailed data from 12,846 students made available by the business faculties of two universities, and concludes that there is evidence of 'grade inflation' camouflaging the underperformance of international students (putatively partly attributable to concerns to maintain fee revenue). Her interpretations do spark some dissent, but some academics do feel that to fail large numbers of international students is to risk having their teaching skills criticised, or to risk being undermined by negative student feedback.

Quite apart from any desire governments may have to fund their university sectors through innovative funding models featuring fee paying overseas students, universities themselves are responding to their globalising academic world by encouraging greater international mobility of their staff and students. The University of Queensland (UQ), for example, now notes that in 2010, 24% of its enrolments were of international students (UQ, 2011, p. 8), including 28% of research higher degree students (85% of whom were sponsored). This meant that in 2010, UQ hosted 10,500 international students from more than 130 countries (UQ, 2011, pp. 10–13). Moreover, on the other side of the travel coin, it encourages outbound mobility through exchange and work experience programs and has adopted a student mobility target of having 25% of its undergraduate students study overseas during their degrees (UQ, 2011, pp. 12, 18). All in all, universities now operate in an increasingly competitive academic world and seek to make their own graduates distinctive and more globally competitive by providing them with enhanced international experiences in the course of their studies. To some extent this is done by bringing the world to the local campus, and to an increasing extent it is now done by also facilitating overseas experience for local students during their studies. It also entails efforts to ensure that academic curricula are broadened to include relevant global dimensions, as appropriate. University exchange programs, field trip opportunities, international internships, and student conferences all play a role in this context. For its part, The UQ has 147 exchange partners in 20 countries. In short, 'education tourism' is increasingly pursued for its academic merit, as well as for its commercial impact on institutional revenues.

14.2.4. *Various sectors within the education exports trade*

Higher education is the largest contributor to exports of Australia's education services, but schools, vocational training institutions, English language intensive courses for overseas students, and 'other awards' sectors also contribute. In 2007, higher education represented about 60% of the value of overall education exports (RBA, 2008, p. 14). Therefore, the remainder of the educational sector was also an important contributor to education exports.

Oddly enough, the struggling English language college sector appears to be buoyed by the soaring Australian dollar (*The Australian*, Higher Education site, accessed on 22 June 2011) in consequence of the fact that those who come to Australia on working holidays may decide that their enhanced earnings potential in Australia outweighs their increased tuition fees. Nonetheless, overall English language intensive courses for overseas students (ELICOS) numbers dropped by about 15,000 in 2010, with a drop of some 3,000 from the key Chinese market, and a savage drop in numbers from India (*The Australian*, 10 May 2011). Spokespersons for the sector express concern that visa arrangements have undercut this sector — by increasing the level of English at which Chinese students can come into the programme and by limiting the length of courses they can undertake (see visa review section below). *English Australia* stresses that English proficiency provides pathways into degree courses, and that a greater focus on courses aimed at working-holiday makers and general tourists can strengthen the sector's future.

Walters (2011, p. 4) draws attention to the Vocational Education and Training sector and notes that 'Between 2007 and 2009 international student enrolments increased by 40%, with an annual growth rate of 18%. By 2009, there were 630,663 international student enrolments in Australia. This unprecedented growth was primarily driven by the expansion of the private Vocational Education and Training (VET) sector'. He notes that while Australia has a first class VET sector, some providers encouraged students to enrol in vocational courses in order to apply for Australian permanent residency. The Australian Government is now moving to close loopholes and improve the efficacy of its immigration program. Revisions to visa regulations are on-going.

14.2.5. *Exchange rate issues*

In recent years the Australian dollar has spiked, on the back of Australia's commodities' boom. This minerals boom seems set to continue for some time and it is unlikely that the Australian dollar will return to earlier levels

any time soon. Given the importance to Australia of education exports and the importance of Chinese students in making up a quarter of that export income, Australia's Education Minister Chris Evans unsurprisingly visited Beijing in 2010 in efforts to minimise the damage for Australian universities as the Australian dollar continued to climb and threatened the inflow of Chinese students. Minister Evans acknowledged that 'The reality is, with the appreciation of the Australian dollar, an education for a Chinese student in Australia is now 50% more expensive than it was at the start of 2009' (ABC website, 4 November 2010), and Chinese students increasingly look elsewhere for places to study (Sheng, 2011). As the mining boom potentially carries the Australian economy into a period of long-lived structural change, Australia can still position itself as politically stable and economically robust, and can make efforts to make a selling point of the quality of Australian universities.

With Chinese authorities loathe to let the Chinese yuan float freely (upwards), it is likely that Australia will lose much of its gloss for Chinese students as an attractive destination relative to the USA. There has been much less movement in various cross rates, however, for example regarding the Malaysian or some other South East Asian currencies relative to the Australian dollar. Possible revisions to visa requirements provide one possible policy response in the face of these new-found tuition pricing realities.

14.2.6. *Visa issues*

Instead of still riding on the sheep's back, Australia now rides in a miner's dump truck. At present Australia's terms of trade are at a record high because of the commodities' boom sparked by rapid economic growth in China and India and the consequent huge demand for the export of Australian minerals. While Australia did well at escaping the worst of the Global Financial Crisis, there is nonetheless widespread concern about 'a two speed economy', with the boom in the minerals sector unmatched by any signs of boom elsewhere. Partly in consequence this has led to reforms to Australia's immigration program, and a recent research report from Monash University (Birrell *et al.*, 2011) argues that Australia needs a lower, but better targeted immigration program, largely because most current migration has had little to do with providing scarce skills to the resource industries and because sustainability problems need to be addressed, especially insofar as they impinge upon the quality of life in the capital cities.

In this context, Birrell *et al.* (2011) argue that it makes little sense to pursue a high immigration policy which promotes rapid metropolitan

population growth since the significant appreciation of the Australian dollar consequent upon the resources boom means that there will be some contraction in metropolitan-based industries such as manufacturing. Their argument is that the current high-population-growth pathway to promoting economic growth will fail to deliver meaningful benefits if it is continued because the fiscal yield that the Commonwealth might expect to reap from the resources boom will be squandered on expanded urban infrastructure requirements instead of being invested in knowledge-intensive industries. In short, changing economic circumstances have implications for Australia's immigration policy, and in turn for education tourism. Because of such issues, a series of visa reforms, including a new skilled immigration points test from 1 July 2011, have weakened the policy link between education and migration (*The Australian*, 20 July 2011). The new regime favours offshore versus onshore applications and advanced versus basic skills. English language requirements have been toughened, and the benefit of having a family relative in Australia has all but gone. In earlier years, education was sold by some Australian education institutions as a pathway to migration, but that door is now closing at least partially. In 2006–2007, 19,352 skilled migrant visas were issued. This dropped to 17,552 in 2007–2008, and may now drop to 4,000 a year. Moreover, many students already here on bridging visas are applying for skilled migrant visas, leaving prospective new entrants in a tighter position. Education tourism into Australia is clearly facing significant new challenges. As to which is the greater threat to the influx of overseas student numbers — the appreciated Australian dollar or the new visa arrangements — visa changes seem commonly to be perceived to matter more.

So at a time when the new Cameron Government in UK is increasing fee obligations for overseas students seeking to study in the UK, Australia is simultaneously reducing its competitive appeal by both toughening its own visa requirements and by presenting a much appreciated exchange rate to prospective students from the rest of the world. Just as exchange rate volatility affects the relative competitiveness of different destination markets for international students, so too do changing visa requirements affect the relative attractiveness of those markets. In March 2010, 'the British government announced wholesale reform of visa rules for its $7 billion international student market, which has been growing at about 7% annually'. (*The Australian*, 30 March 2011). Britain faces economic woes in the wake of the GFC as well as some popular discomfort with its immigration program, and the visa clampdown imposed by the incoming Cameron Government extended to restrictions on the right to work, time limits on

study and tougher English language requirements for vocational programs (although changes to the right to work following graduation were of opposite effect). International Education Association Australia president, Stephen Connelly, accordingly noted that these tougher British visa rules may provide Australia with an enhanced opportunity in the market for global students. (*The Australian*, 30 March 2011) Nonetheless, the result also depends on the outcome of Australia's own review of student visas under former NSW Labor Minister Michael Knight, and the net effect could be nil, leaving the high value (in recent years) of the Australian dollar against the pound to reflect an overall drop in Australia's competitiveness vis-à-vis the UK. As far as student visas are concerned, there is an extent to which both the UK and Australia have now put an 'unwelcome' mat on their respective doorsteps.

In brief, the Australian international education sector has come under pressure from several sources, including the rising value of the Australian dollar, the impact of the global financial crisis abroad, Asian counter-export policies, slowing growth in China, and growing competition from the United States, New Zealand and Canada for international students. Immigration Minister Bowen and Tertiary Education Minister Evans therefore, seek to adopt a whole-of-government approach in responding to these changes, and hence have set up a review of student visa requirements (under Knight) (*The Australian*, 16 December 2010). Other visa reforms in train include a student visa review in NSW. Prominent student-recruiter, IDP Education, says that a reform involving a group of trusted universities would win faster visa approvals for their students in return for helping immigration authorities run the system and police any visa breaches. This reform should reduce visa processing delays, and should help prevent the loss of genuine students to rival countries while giving education providers a strong incentive to both detect, and act on, visa breaches. Such trusted providers would perform the tasks of assessing the bona fides of the students, their qualifications for the course and their financial capacity. IDP claims that for students assessed positive the visa outcome should be both faster and more certain (*The Australian*, 1 June 2011). All students to a university designated as a trusted provider would be vetted under the Immigration Department's least rigorous assessment level with the aim of visa approval within two weeks, compared with a typical 49 days for students from China, which is classified as high risk. Some immigration agents however suspect that IDP's proposal could lead to abuses whereby agencies start charging students for fast tracking them in the queue.

14.2.7. *Perceptions and information asymmetry*

Information asymmetry is an evident problem within the higher education sector, given that overseas students in particular are going to manifest their demand for their courses before they have close knowledge of relevant academic and social issues within their destination institutions and countries. In this context, some problems did develop within the Australian education sector largely because of extremely rapid growth in overseas student numbers, when sudden closures of some non-university institutions left international students uncertain of where to go or whether their fees were recoverable. Adverse publicity about this one part of the overall market threatened the viability of the whole market, and the Australian Government quickly responded by amending the Education Services for Overseas Students (ESOS) Act, operational from 8 April 2011 (COAG, 2010). The amended Act toughened registration requirements for provider institutions, strengthened consumer protection, and established a complaints handling mechanism to ensure quality. As Walters (2011, p. 10) notes 'The reputation of international education worldwide is often judged by claims made on behalf of universities and colleges by education agents and consultants. We have everything to gain by making sure we expect the highest standards from our agents'. The Australian Government has also acted to try to allay fears about personal safety in Australian cities after a number of bashings of Indian students in recent years.

Another factor affecting perceptions related to education tourism derives from rapid changes in technology. It is already possible to have a piano master-class with a student in one country and an instructor in another country. To that extent technology diminishes the need for travel or for education tourism, albeit people will still want to see the world, hone their English, find a safe environment, get visas and plan futures in new places. Bill Gates comments that by 2015 many will be able to see the best lectures in the world on the web for free. This too may threaten extant models in traditional universities and education tourism. At the least, it means that universities will have to adapt to a new age in which for many the web becomes their classroom and Facebook serves as their community.

14.2.8. *Prospects for future growth*

There are reasons to doubt that the strong growth in education export can be maintained unabated in the future. In Australia's case, greatest among these is the exceptional rise in the Australian dollar in recent years, from

what was widely perceived to be a long-term average of about US$0.72 to a value of about US$1.10 in late July 2011. The leisure tourism industry is also being hard hit by this change in the relative export competitiveness of the Australian economy, in consequence of the exceptional mining boom which has seen Australia's terms of trade spike in the wake of Chinese (and other) demand for Australia's mineral exports. Political debate forced significant changes to the Australian Government's proposed Mining Resource Rent Tax, but one reason it was in fact supported by some was to apply the brakes to the mining boom to some extent, the better to allow services exports to benefit from a lesser revaluation of the Australian dollar. The Australian economy may be experiencing a boom, but there are those who perceive that boom to be none too visible outside the mining sector, leading *The Economist* (2 April 2011) to refer to 'an antipodean version of the Dutch Disease'.

Other factors which suggest that prospects for future growth are weakening include greater competition, including from within the Asian region, and limits in the capacity of Australia's education sector to go on accommodating further growth in overseas student numbers. The RBA notes (RBA, 2008, p. 16) that some Asian countries — including Singapore, Malaysia and China — have begun introducing protectionist import-substitution policies, with the explicit goal of becoming net exporters of education services themselves. Policies being used to keep domestic students at home in Asia and to attract overseas students include increased public investment in universities, the relaxation of work restrictions on overseas students and the provision of encouragement to foreign universities to establish branch campuses within Asian countries. Combined with the spike in the Australian dollar exchange rate, these policies are capable of biting, and restraining growth in overseas student enrolments, not only in Australia but also in the USA and UK markets. In 2011, Australian universities are starting to feel that bite, and the golden age of growth in international student numbers seems to be over for Australia.

Nonetheless, Hilmer (*The Australian*, 1 November 2010) contends that Australia still retains various advantages which it can build on. It has a AUD18b education export sector, and apart from the sunshine what Australia has to offer includes better part-time work prospects than competing countries, and better integration into the Asian region, including through commercial companies engaged in trading networks. Davidson *et al.* (2010) report that over 80% of international students in Australia consider applying for permanent residency, suggesting that as a destination Australia remains highly desirable. To avoid a slump in the industry, Hilmer calls for a new

marketing strategy and more flexible visa arrangements, including the right for students to stay on temporarily after graduation, e.g., he suggests that Australia could offer a complete 'university to work' qualifications package, inclusive of post-graduation employment of 1–3 years and professional accreditation (e.g., as chartered engineers).

14.3. Conclusions

Education exports have maintained very strong growth for more than two decades. In Australia's case they ranked as Australia's largest services export in 2007. This growth has been underpinned by demand for higher education services from rapidly growing Asian countries, more especially China and India, and by the greater export orientation of Australian universities. Rapid growth in China and India has been manifested not only in demand for Australian mineral resources, but also in increased demand for Australia's education exports.

Growth in Australia's education exports is likely to slowdown in future, given both the sharp rise in the Australian dollar and the efforts of Asian countries to expand their domestic education capacity. There are signs too that Australian universities may not be able to accommodate further significant increases in overseas student numbers. Nonetheless, the Reserve Bank's conclusion (RBA, 2008, p. 17) is that while growth in education exports is likely to slow in the medium term, 'education exports are expected to outpace aggregate export growth such that their share in Australia's exports is likely to continue to increase over coming years'.

The 2008 RBA conclusion may still prove true in the medium term but significant changes since then, including the extraordinary rise in the Australian dollar, now paint a less rosy picture. A number of factors, including the marked depreciation of many currencies against the Australian dollar, caused the rapid growth in education tourism numbers to flatten out in 2010 (Walters, 2011) and to threaten a coming sharp turn-around in numbers. Factors hitting the international student business in Australia include the global financial crisis (GFC) and the consequent downturn in consumer confidence in many countries; the possibility of still further rises in the Australian dollar and a protracted period above parity with the US$; increased overseas competition as the US and other countries seek to extricate themselves from the GFC and as China and other Asian countries build their own import-substituting higher education industries; the much publicised bashings of Indian students in Melbourne and Sydney harming Australia's reputation as a safe destination; the collapse of some vocational colleges and

consequent consumer protection issues, also to the detriment of Australia's reputation; tougher new immigration visa rules as the Australian government responds to population, immigration and sustainability issues; slow visa processing; and changes in university ranking methodology resulting in downgraded ranking of some Australian universities, the importance of which is heightened by virtue of the fact that the US is home to most of the world's top ranked universities.

So just when the GFC has been forcing universities in other countries to market themselves more aggressively, Australia has made things harder for itself. Whereas 2009 survey evidence showed that Australia was well placed in terms of affordability, safety, and access to permanent residency opportunities (*The Australian*, 20 October 2010), Australia has since suffered negative changes in all three respects. Chinese student enrolments in the USA have surged, and the post-1982 golden age of 14% average annual rate of growth that distinguished Australia's success in this market for more than 25 years has now ended.

Much is changing rapidly in the world of education tourism. Immigration debates are intensifying in UK and in Australia. Exchange rates are volatile. Universities in many places are raising fees. High tax European countries are reforming higher education and moving towards a system of user charges, causing foreign student applications to Swedish universities to plummet in 2011 (*The Local*, 18 January 2011). New marketing strategies must be expected as host nations, including Australia, compete to retain market share.

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Chapter 15

THE BUSINESS OF AMUSEMENT PARKS: THEIR DEVELOPMENT AND OPERATION

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Abstract: The revolutionary innovations in amusement parks, starting with the 'Bakken', north of Copenhagen, in 1583 and given modern form as themed entertainment attractions by Disney at Anaheim, California in 1955 have spread outwards through successive imitation and adaptation by the amusement industry. The chapter reviews some of the historical aspects of amusement parks, presents some key data and then goes on to discuss economic and development issues, including park planning and design. Concepts of creativity and issues of failure are examined in order to define the boundaries of what may be currently considered good practice to minimise the downside risks that can result in financial, if not project, collapse. Numerous examples are given so as to establish trends.

Keywords: Amusement parks; design; development; history; planning; trends.

15.1. Introduction

The largest international trade association for permanently situated amusement facilities is the International Association of Amusement Parks and Attractions (IAAPA). Founded in 1918, IAAPA covers a broad 'church' in which members include traditional amusement parks and their evolution into theme parks, water parks, family entertainment centres (indoor activities such as carousels, child swings, restaurants, musical shows and video arcades), zoos, aquariums, museums, science centres, resorts, and casinos (IAAPA, 2009). The organisation has expanded to keep pace with an ever changing industry and today represents over 4,000 businesses from more than 93 countries. With such a wide spectrum of amusement facilities it is difficult to draw the boundaries on any discussion, but the focus here will be on amusement parks in general so as to encompass both 'dry' and 'wet' parks, the latter being the growth phenomenon of the 1980s, after Wet'n'Wild was opened in Florida in 1977.

By way of contrast, dry parks have a long history of development (Adams, 1991; Clavé, 2007; Wanhill, 2008; Zukin, 1991). The parks of today are the modern form of the travelling fairs of yesteryear, which are now limited in number as they have been made somewhat obsolete by technology, laws on safety and duties of care to the public, and the increase in leisure expenditure that has reduced the need to travel from one market to another to capture limited spending power. Of the traditional amusement parks the earliest, which still exists today, is the 'Bakken', Copenhagen, which dates from 1583. It is still a traditional funfair drawing mainly on the 1.5 million population of Greater Copenhagen. It has some 60 concessionaires and entry is free, so visitor numbers of 2.6 million are only broad estimates (Wanhill, 2003). The first Tivoli amusement park was originally a rich man's 'folly' and appeared in Paris in 1771. It was swept aside in the Revolution, as were the frivolous activities of other pleasure gardens, but the idea and name were copied elsewhere in Europe, the most notable being Copenhagen's Tivoli Gardens (1843), which draws in around 4 million visitors per year. Their growth in popularity made Tivolis become somewhat commonplace and the public's appetite moved on, many disappearing in the 1850s.

The next major impetus to amusement park development came from the industrial revolution and the growth of urbanisation. The impact in Europe took the form of building attractions at the growing coastal resorts (Blackpool Pleasure Beach was established in 1896), and at the ends of piers, particularly in Britain, where 78 were developed between 1860 and 1910. Very few piers were built on mainland Europe. At the same time, in USA, the expansion of towns following the Civil War gave rise to 'Trolley Parks'. They came about because the utility companies charged the new electric traction (trolley) companies a monthly flat fee for the use of their electricity. As a result, to stimulate weekend use trolley companies created amusement parks, typically at the end of the line. The success of these parks caused them to spread across the US, though relatively few survive to this day. Of the 12 still operating, the most significant is Dorney Park (opened in Allentown in 1884), which still averages around 1.5 million visitors.

It was at Chicago's Columbian Exposition in 1893 that a key 'architectural' innovation (Abernathy and Clark, 1985) took place, with the introduction of George Ferris's Giant Wheel and the Midway Plaisance, a mile long walk with a wide array of rides and concessions. The success here was of Schumpeteran quality (see Chapter 12) and dictated amusement park design for the next 62 years. After strong growth over the next three decades, the demand for traditional parks stagnated in the face of competition from the

new media of cinema and the Depression following the Wall Street Crash of 1929. Thereafter, particularly in USA, the industry struggled to survive and apart from a short-lived post WWII boom, parks became out of vogue, as people in the TV age were looking for more sophisticated leisure than could be found in these old-fashioned and, in many instances, dilapidated amusements.

To restore the fortunes of the US industry, a new architectural innovation was needed and this was created by Walt Disney in Anaheim, California in 1955. Built at a cost of some US$17 million, Disneyland was the largest park investment that had ever been made. Instead of the fairground style of a Midway Plaisance, with numerous concessionaires, Disneyland offered five distinct themed areas (Main Street USA, Adventureland, Frontierland, Fantasyland and Tomorrowland) that provided 'guests' with the fantasy of travel to different lands and times, all designed and managed by one organisation. As often happens with new ideas, there were many sceptics who were unable to see how an amusement park without any of the traditional attractions, such as a Ferris Wheel or Tunnel of Love, could be successful. They listed a catalogue of perceived mistakes that would end in failure, for instance, having only one entrance, which could cause excessive congestion for visitors, the lack of traditional revenue earners, and the amount of space devoted to non-revenue earning Main Street USA (Adams, 1991). In Europe, De Efteling in the Netherlands was created in 1951, with fairy tales as the central theme, and drew in 300,000 visitors in 1952, but it was Disneyland that set the agenda for the theme park developments that are so familiar around the world today. Confounding its critics, the park brought in 3.8 million guests in its first year, a figure that reached 13.9 million in 2000 and 16.0 million in 2010.

15.2. Classifying Amusement Parks

Table 15.1 draws out a broad classification of parks, with dry parks being split between traditional and theme, the latter being separated into regional and destination parks. Disney's achievement was one of redirecting past ideas into a fantasy-provoking atmosphere. Nevertheless, the underlying principle remains: to provide a pleasurable day out for the family that is founded on resolving a long established market research outcome that families cannot stay together for more than two to three hours without bickering, unless a variety of distractions are provided (McClung, 1991). From this, a suitable definition of a theme park is 'a family amusement complex oriented towards a range of subjects or historical periods, combining the continuity

Table 15.1. Categories of amusement parks 2010 US$ prices.

Product features	Destination park	Regional park	Traditional park	Water park
Concept	High theming/ multiple imagescapes	Rides and shows	Rides and fairground arcades	Indoor/ outdoor
	Resort amenities and hotels	Theming	Individual theming	Local and tourist appeal
	Major branded attraction	Some branding	Concessionaires	Short stay
Nos. Europe	4+ million	1.0–2.0 million	0.5–1.0 million	0.4–0.8 million
Nos. US	6+ million	1.5–3.0 million	0.75–1.5 million	0.6–1.2 million
Season Europe	Year-round	180–220 days	120–190 days	Year-round /seasonal
Season US	Year-round	Year-round/ 180–220 days	180–220 days	Year-round /seasonal
Cost Europe	$510 million	$185–$310 million	$115–$185 million	$30–$75 million
Cost US	$680 million	$250–$400 million	$125–$205 million	$40–$85 million
Market	Tourist	Tourist/ resident	Resident/ tourist	Resident/ tourist
Source markets	Regional/ national/ international	Regional tourist/ resident	2 hr Resident/ limited tourist	1 hr Resident/ tourist
Admission	High POP	Medium POP	Small/free GA/ Low POP	Medium–Low POP
Competition	Low	Medium–Low	High–Medium/	Medium
Site (1 hectare = 2.471 acres)	100–200 hectares	25–50 hectares	10–30 hectares	<10 hectares

Source: Adapted from Wanhill (2008).
Notes: 1. POP stands for Pay-One-Price.
2. GA stands for General Admission.

of costuming and architecture with entertainment through rides and other attractions, catering and merchandising, to provoke an experience for the imagination' (Wanhill, 2008, p. 59). Which is why the Walt Disney Corporation (WDC) calls its designers 'imagineers', for what they create are 'imagescapes' (see Chapter 12) through sophisticated 'audio-animatronics' tableaux that blend fantasy into reality around an activity in a spatial setting. Thus the intangible output of a constructed imagescape is central to the visitor experience and success comes from having a clear idea of what this should be, proven management skills and knowledge of the market. Wong and Cheung (1999) undertook a brochure analysis to produce a classification of park imagescapes into seven storylines, namely, adventure, futurism (science, technology and science fiction), international, nature, fantasy (fairy tales, cartoons and comics), history and culture, and the 'movies'.

As a rule, parks tend to have multiple imagescapes designated to zones or 'lands' (Richards, 2001), but some parks have one main image running through all attractions, as in Warner Bros Movie World, Legoland or BonBon-Land (Wanhill, 2003), which began life as a sweet factory in Næstved, Denmark in 1930. Imagescapes compress history and culture, and thus time and space into marketable entertainment experiences that have been criticised as 'no place places' (Zukin, 1991). On the other hand, complex or scholarly themes have difficulty producing the emotional experiences necessary to attract family groups and have limited repeat visit potential. This market wants easy access, fun rides and attractions, little waiting in queues, good weather and scenery, and a 'clean' family atmosphere.

Destination parks normally belong to chain operators and are rare in Europe compared to the USA, but have been initiated by WDC through creating Disneyland Paris (1992), and Universal Studios after acquiring Port Aventura, Spain (1997) and re-launching it in 2002 as the family vacation resort Universal Mediterranea, with the addition of Spain's first themed water park, Costa Caribe. It has since been resold to Spanish banking group La Caixa. This is because European catchment areas are closer together and it is difficult to generate the required staying visitors to make them viable. The demand is principally for regional parks, though some of the leading parks have built hotels lately to provide for onsite stays, so as to add 50,000–100,000 to attendance numbers. On the other hand, the major US brands (excluding Six Flags and Cedar Fair, which are regional park operators) have created super-destinations through park clustering in Southern California and Florida. This may be seen in Table 15.2, which shows attendances at the Florida destination cluster. Over the period of

Table 15.2. US chains Florida parks visitors (Millions).

Corporation	2000	2005	2006	2007	2008	2009	2010
Walt Disney Attractions							
Magic Kingdom	15.4	16.2	16.6	17.1	17.1	17.2	17.0
EPCOT	10.6	9.9	10.5	10.9	10.9	11.0	10.8
D's Hollywood Studios	8.9	8.7	9.1	9.5	9.6	9.7	9.6
D's Animal Kingdom	8.3	8.2	8.9	9.5	9.5	9.6	9.7
Typhoon Lagoon	1.8	1.9	2.1	2.1	2.1	2.1	2.0
Blizzard Beach	2.0	1.8	1.9	1.9	1.9	1.9	1.9
Universal Parks and Resorts							
Universal Studios Florida	8.1	6.1	6.0	6.2	6.2	5.5	5.9
Islands of Adventure	6.0	5.8	5.3	5.4	5.3	4.6	6.0
Wet'n'Wild	1.3	1.3	1.3	1.4	1.3	1.2	1.2
SeaWorld Parks & Entertainment							
Sea World Florida	5.2	5.6	5.7	5.8	5.9	5.8	5.1
Busch Gardens Tampa Bay	5.0	4.3	4.4	4.4	4.4	4.1	4.2
Aquatica (Opened 2008)					1.0	1.6	1.5
Adventure Island Water Park	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Discovery Cove	0.2	0.3	0.3	0.3	0.3	0.3	0.3

Sources: Author and Themed Entertainment Association.

the global financial crisis (GFC) Disney managed to keep up attendances through aggressive marketing and discounting. Universal Studios Florida and Universal's Islands of Adventure make up the Universal Orlando Resort, which has lost market share to Disney's dominant position, but the company fought back in 2010 with the opening of the Wizarding World of Harry Potter (more than five years in the making) at an estimated cost of US$265 million.

Since Wet'n'Wild (acquired by Universal in 1998) opened in Orlando with fibreglass slide towers, the technical development of water parks and their expansion worldwide has progressed rapidly. The early 1990s saw the first family raft ride, first flow rider, sidewinder and 'bowl' attractions, to be followed by water coasters and interactive play structures for children, such as Legoland California's 'Build-A-Raft River' launched in 2010. Due to climatic conditions, free-standing indoor water parks originated in Europe years before they became popular in North America and well-established brands have integrated indoor water parks into family vacation villages throughout Europe for many years. There has been significant growth in the Middle East, Asia and also Eastern and Southern Europe to include

water parks into their resort development plans. The United Arab Emirates has made a commitment to become one of the top vacation and leisure destinations in the world and water parks are a key element in that mix.

As indicated in Table 15.1, water parks are relatively inexpensive so that it is possible for dry park operators to add a full complex for little more than the cost of adding one major anchor ride. In addition, they offer significant opportunities to increase length of stay and in-park spending, while offering a completely new experience to guests. In this way they can add considerably to profitability, hence their presence in Table 15.2. Their popularity has also promoted their expansion on modern cruise ships — Royal Caribbean added the first water park rides in 2005.

What is evident is that over the years the boundaries drawn in Table 15.1 have become increasingly blurred. Modern parks have become hybrids as dry parks have added water parks adjacent to them or combined them, while during the 1990s in USA water parks all began to introduce thrill rides to compete with dry parks. Likewise, in the hot climates of the Middle East and Asia many 'leisure parks' have been designed as indoor attractions, sometimes combined with shopping: A long standing example of this is Lotte World (1989) in Seoul. Conversely, in Europe and the US large shopping complexes and malls have been introducing leisure into their portfolio of activities. Thus Nickelodeon Universe (2008), re-themed Knott's Camp Snoopy (1992), is an indoor park with free General Admission (GA) and depends on the 'footfall' within the Mall of America.

Where the population catchment is small, and/or there are climatic limitations, development tended to fall on the refurbishment of existing parks, some of which have become 'classics' in their own right and are difficult to compare with any other, such as Copenhagen's Tivoli Gardens, Grona Lund Tivoli, Stockholm, (1883), Liseberg, Gothenburg (1923) or Sydney's Luna park (1935), which, similar to Copenhagen's Tivoli, is protected by legislation, with several listed buildings on the site. Many such parks have the added advantage of being able to capitalise on their prime sites that are now within city limits, but equally need protection to preserve their community worth, because the commercial price of these sites today are many times the value of the parks, as in the case of Six Flags Astroworld in Houston that was sold for real estate development in 2006. In operational terms, most have also become hybrids with a mixture of attractions, themed areas and traditional fairground amusements. The growing interest in their historic value is such that Coney Island's famous Luna Park (1903–1948) was revived in its traditional form in 2010. The total cost exceeded US$15 million, with the City of New York investing more than US$6.5 million.

Table 15.3. Distribution of roller coasters.

Region	2000	2005	2010
Africa	11	21	33
Asia	198	484	838
Australia & NZ	20	20	21
Europe	365	571	685
North America	624	686	689
Central America	27	35	43
South America	11	67	97
World Total	1245	1884	2406

Source: Roller Coaster Database.

15.3. Globalisation

Since the 1970s the popularity of theme parks has grown significantly. An indication of their global spread may be obtained from the Roller Coaster Database listing shown in Table 15.3. In 2000, 1,245 roller coasters were sourced as the world's total, reaching 2,406 in 2010. Of the latter total, the USA is the single most important country with 638 coasters, but it is also a mature market, as denoted by the trend in North American data, which has been through difficult times since 2001 with Six Flags (filed for US Chapter 11 bankruptcy in 2009) and Cedar Fair (unwisely taking on the debt ridden Paramount Parks in 2006) requiring extensive financial restructuring. Nevertheless, the international nature of the US cinematographic industry has given American chains, Disney, Cedar Fair (via Paramount), Universal and Warner, the ability to export their influence overseas. It has enabled these corporations to theme their most successful films and cartoons into parks bearing their brand, in the knowledge that their products and characters will be recognised almost anywhere in the world, thus making it easier to attract local partners and government support. Equally they benefit other operators through licensing agreements. By establishing a park at Carlsbad, California in 1999, the LEGO Corporation was the European exception to this one-way flow from the USA.

With the exception of Legoland that was opened next to the factory in Billund, Denmark (1968) to support the toy, Europe too can trace modern theme park development back to the 1970s, but at lower intensity than in the USA, given the much richer tradition of alternative visitor attractions. European parks have tended to be singularly owned and were initially concentrated in the north where the highest levels of disposable income and car ownership were to be found. Thus the major players in 2010 were

the UK with 170 coasters, Germany 124, and France 79. Market size has restricted Belgium to 24, Denmark 39, and The Netherlands 40. Since the 1990s, increasing affluence has seen the theme park concept spread to Italy (38 coasters) and Spain (40 coasters), where there are also large influxes of tourists.

Traditionally European chain operators have all been rather small in comparison with their US counterparts, but through a series of acquisitions and developments Luxembourg-based Merlin Entertainments (backed initially by Blackstone private equity), whose original strength was in Sea-Life Centres, is now only second to WDC in visitor numbers. Likewise, the Spanish group Parques Reunidos now holds a wide range of properties in Europe (including BonBon-Land noted earlier) and has greatly added to its US portfolio by acquiring Palace Entertainment in 2007; the latter had invested heavily in water parks and family centres. France was particularly noticeable for a building boom in the second half of the 1980s, although there were several financial failures as a result of too optimistic assessments. Thus Big Bang Smurf in Metz (1989) had to be bailed out with government subsidies before being acquired by the Walibi Group in 1991, Six Flags 1997 and Star Parks 2005, but since 2007 is the independent Walygator Parc.

In Central and South America, the volatile nature of their economies, internal strife and low incomes of the mass market have hindered park development amongst traditionally fun-loving people. The low income groups are commonly attracted to slot machines and gambling, but attractions designed for this market have often been called leisure or theme parks. Concentration of development has been around the major conurbations, such as Mexico City and Sao Paulo, with water parks at resorts, notably from the American group Alfa Smartparks with their Wet'n'Wild brand. However, from the mid 1990s, costs have been overcome slowly, helped by a steady influx of second-hand US and European rides that has enabled individual operators and chains, such as Grupo Magico Internacional, to grow the market, though excessive duties on imported rides continue to hinder expansion. Returns from Brazil show 46 coasters and Mexico 32 for 2010.

In much of Asia it has been low incomes that have delayed development, while in Australia and New Zealand it has been population size that has limited expansion and tended to keep parks small (<500,000 visitors) and somewhat in traditional in style. Conversely, the Village Roadshow chain situated on Australia's Gold Coast has been very successful with its Warner Bros Movie World and Wet'n'Wild Water World park. As is common in this business, a strong home base has permitted Village to purchase other attractions in Australia and expand overseas.

Listing 227 coasters in 2010, Japan has been by far the most 'theme park' oriented of the Asian countries, conceptually even before Tokyo Disneyland (1983). This phenomenon dates from their Government's drive to familiarise the Japanese population with 'foreignness', resulting in a spate of parks representing countries that the Japanese most admire or might visit as tourists — the most famous being Huis ten Bosch (1992). But the growth shown in Table 15.3 is not attributable to Japan, but rather the rising economic force that is China with 299 coasters in 2010, and to a lesser extent India 41 and Russia 29. China's largest park operator, the OCT Group, whose first park was Splendid China (1989), recognises the huge potential the country offers to enable it to be the premier brand in Asia.

15.4. Development Issues

The amusement park product (Clavé, *op cit.*, Scheurer, 2002) is similar to attractions in general, where the core is the experience offered by the imagineering of the creative team. For traditional funfairs and water parks the offer is straightforward, but it is with theme parks that a range of imagescapes can be developed and will be the focus of discussion hereon.

15.4.1. *Location*

Theme parks are the most obvious examples of attractions that can follow the development sequence Market > Imagescape > Location (see Chapter 12), because they are seeking to maximise their attendance levels, which, for regional parks, are functionally related to the population catchment area within a specified drive time of up to two hours for cars and three to four hours for coach, bus or train. Parallel issues in terms of access apply to destination parks, but as Clavé (2007, p. 73) notes for WDC 'Orlando, Paris and the Greater Pearl River Delta are three places whose geographical scale of reference is not the local one'. The growth of the accommodation sector around Disneyland, Anaheim led Disney to think in terms of a resort park and Orlando provided the opportunity to create Walt Disney World, which is on a totally different scale to what is shown in Table 15.1. It spans some 10,360 hectares and at the time of opening in 1971 was the largest investment yet (US$250 million) in an amusement resort.

Opinions vary as to what is the appropriate catchment size, thus Oliver (1989) argues, within a European context, for a location to be found within a population catchment of 15 million within one and a half hour's drive by motorway or other rapid transit system. In the early 1990s, the English Tourist Board proposed a standard of 12 million residents within two hour's

drive or approximately half that number when the location is close to a major resort (McEniff, 1993). To give a specific example, Legolands were planned around the following guidelines:

- Prospective locations are in regions where sales are substantial and there is strong brand awareness;
- They are family parks for children aged 2–13 years and the investment of some US$200–250 million requires a resident catchment area of around 20 million, with about 50% or more being target families;
- An established tourist area yielding a steady flow of visitors;
- A site that is associated with a destination that has a positive image and planning permission for leisure development;
- Minimum site requirement of 40 hectares;
- Locally available support services in terms of suppliers and general tourist infrastructure.

However, irrespective of any particular norms, it is generally agreed that a two-hour's driving edge or less is critical for regional parks or for attracting day visitors to destination parks. Hence, North American parks attracting up to 3 million visitors are located within the two-hours plus drive time band from large cities. At its peak, Six Flags was able to claim that its parks served nine of the 10 largest metropolitan areas in the USA and that about two-thirds of the US population was within a 150 mile radius of one of their parks (Six Flags, 2004). Similarly, Canada's Wonderland (1981) is located at Maple, 20 miles north-west of Toronto's downtown core and is able to draw on the city's tourist trade as well as the 7 million plus residents of Ontario. Drive time is used to segment markets to assess penetration (Wanhill, 2003), but distance is also used (Clavé, 2007).

In practice, the availability of sites for land extensive entertainment complexes is often inadequate. For America and Europe sites near cities are unusual and subject to strict planning controls; thus it took Thorpe Park in Britain six years and 150 planning applications before it could open in 1979, and permission is still needed for every new attraction. Having existing planning consents is a bonus to chains when consolidating growth through the acquisition of underperforming parks. However, where theme parks are currently spreading in Central and Southern America, Asia and the Pacific Rim, site provision is much easier. The historical exceptions to the development sequence have been some of the branded parks, such as Legoland at Billund and Universal Studios Hollywood at Universal City (1964). Their pathway was the same as for most industrial visitor attractions, namely: Location >

Table 15.4. The theme park market–imagescape mix.

Market \ Imagescape	Current	New or Future
Current	'Me too' park	'Great idea' park
New or Future	'New version' park	'Mega' park

Market > Imagescape. The imagescape of the attraction is built on consumer interest in the product, so that in the first instance, natural association with the place of production dictates the location, with replication elsewhere being a subsequent development.

15.4.2. *Market — imagescape mix*

What is important is to recognise that location, market assessment, and imagescape are linked to each other, so that the further the park is away from the optimal location, the more appealing must be the imagescape. The linking of market assessment and imagescape may influence the nature of the park that is created, as exemplified in Table 15.4.

The common experience, to be found in a variety of parks, is 'me too'. The imagescapes are 'reproductive' (see Chapter 12) and are supported by licensing cartoon characters (recently Peppa Pig and Nickelodeon) to provide theming for rides, attractions, merchandise, walk-around puppets and advertising. Buying 'off the shelf' involves least risk, but can saturate the market and result in non-viable attractions that end up wasting resources. The 'new version' may be the opening up of new market opportunities while preserving the existing imagescape in content and format, rejuvenating the existing park because the public has become too familiar with the product, or a combination of the two. Tried concepts can work in new locations while new concepts are needed to move forward with established parks. Corporate examples of the former can be found in the overseas expansion of American chains, tailoring them to local needs so as not to be too formulaic in design. For the latter, parks reinforce repetitive demand for thrill rides with a rolling programme of replacement and re-theming.

The principal difficulty of the 'great idea' is assessing whether it will work in relation to the imagescape or whether it is simply the 'single genius' approach to project development, which could be an indulgence that is unnecessarily or unrealistically costly in terms of what the market can afford. A common strategy in this area is to reverse the evaluation sequence by estimating the volume of visitors needed to make the project both feasible and viable at a price the market is prepared to pay. An important aspect of

delivering investments in this quadrant is the track record of proposers in being able to raise finance and obtain planning consent. The latter is a 'minefield' of issues, as local government culture is not noted for being receptive to new ideas or being able to think in 10–15 year trends.

The term 'mega' park is used here to describe those very large developments that have major economic impact on their location and are eagerly sought after as 'flagship' enterprises. Successful projects of this kind lay down the architecture of the industry and the new framework in which competition will occur, setting future standards for some time to come. Maximum uncertainty holds here because of the number of unknowns and often the scale of the project, which on the one hand deters competition, but on the other increases financial exposure. Market assessment is both difficult and often too optimistic, which leads to financing difficulties later on. Developing project scenarios so as to give a thorough understanding of what is being proposed and the risks involved are more important than the actual projections, though the latter are required to give dimensions to the proposal and to assess its impact on the economy. This quadrant usually only applies to relatively few parks, the leading exponents being WDC and Universal. Such organisations are careful to limit their financial exposure by restricting themselves to a part share in a separate development company to avoid recourse to main balance sheets, or to just licensing agreements.

The cost structure of parks makes them inherently risky projects, the financial term for this being 'a high operating leverage', implying a high level of fixed costs in relation to variable costs, which makes them financially vulnerable to downturns in the market. Examples such as Zygofolis, Nice (1987), design 900,000 and Mirapolis, Paris (1987), design 2 million, quickly closed in 1991 when attendances settled at 350,000 and 650,000 respectively. As a consequence, providing the capital funding package for theme parks is often difficult: banks will not usually lend more than 40% of the required sum and so the rest has to be found from equity investors who carry the risks. Sponsorship of attractions also helps, but another important component has been public money. Because parks can generate significant 'spillover' benefits at the destination, many have been given government assistance. Thus 'mega' parks usually proceed with public sector support, both in terms of kind (land) and finance, which acts as substitute equity by reducing investment costs, so as to spread the risks and help draw in external funds. Accordingly, it was a joint venture company between WDC and the Hong Kong Government (Hong Kong International Theme Parks Ltd.) that was responsible for the new park in 2005. The Hong Kong Government's input was substantial, in terms of equity, loans and infrastructure costs,

amounting to just over 80% of the total investment of some US$3.6 billion.

15.5. Park Planning

15.5.1. *Markets*

Planning a theme park is normally centred on the first and fifth years of operation, the latter being the design standard when park operations should have settled and the future of the park is recognised, giving the opportunity for any venture capital funds to sell on their interests. The market potential is made up of the resident population in the specified catchment area, visitors to the area and parties; the latter include schools, company outings, clubs and associations. Dybedal (1998) notes the particular need of Norwegian parks to cater for domestic holiday visitors due to small resident populations.

When calculating the market penetration rates for the park, in order to ascertain likely visitor numbers, account has to be taken of disposable income, accessibility, competing attractions, the appeal of the imagescape and the level of capitalisation required to ensure that visitors have a variety of activities to enjoy during their stay and want to return. The latter is termed the 'warranted' level of investment. Generally, US parks have a greater level of warranted investment and thus higher penetration rates than European parks. In part, this can also be explained by closer proximity of European parks to each other, which means greater competition through overlapping catchment areas. In addition, US parks have a larger percentage of admissions as groups than Europe: established parks should generate 35%–50% of their market as groups.

The major parks do not set out to attract narrow segments of the market, but rather make the widest appeal possible to families and groups. As theme parks are for the family, then the importance of the children's influence on the decision to visit, particularly with both partners working, must not be overlooked in the images that are portrayed (McClung, 1991). To balance this, an evening theme with shows and good restaurants will attract adults to the park, something that is a strong feature of destination parks and the city-located parks in the Nordic countries.

15.5.2. *Admissions*

The economics of 'buffet' pricing and the two-part tariff (Nahata *et al.*, 1999; Phillips and Battalio, 1983) apply to park admissions. Classic parks,

made up of numerous concessionaires, usually offer free or low cost GA and a 'pay-as-you-go' system, or the opportunity to buy a book of tickets. A modern approach is to use electronic wristband passes, which may be unlimited or point passes where the point value of each ride is deducted at the entrance. Economic theory suggests that, under single ownership, as the number of attractions increase so the transactions cost of individual ticketing exceeds the marginal operating costs, so it pays to switch to a Pay-One-Price (POP) admission. The latter is generally regarded as advantageous for marketing, family budgeting and enjoyment (boosting in-park spend), is cost-efficient and also serves to deter those who may want to come to the park and create a disturbance through rowdy behaviour. Ideally, parks try to achieve a secondary spend inside equivalent to the revenue gained from admissions, but this usually settles at around 80%. An uplift in restaurant spending is guaranteed if guests stay for four hours or longer, even when parks allow guests to take picnics.

As with most attractions, the high operating leverage allows considerable scope for price discrimination according to a park's different market segments. Consequently, price panels exhibit a wide range of revenue management strategies; packages for destination parks, seasonal/weekly passes, membership schemes, online discounts, and events such as Halloween and Christmas. Universal and Disney have their own vacation services and can offer a variety of plans with features such as airfares, ground transport, hotel accommodation (even at hotels away from their properties), theme park admissions, and meals. In recent years, an added extra has been priority ride access. Pre-bookings via the internet can assist with admission planning, data capture and smoothing entry at the gate. In Europe this should currently account for 10%–15% of admissions, but one may double this for the USA.

15.5.3. *Design*

Design may best be understood by taking a simple numerical example, say, a theme park designed for 1.5 million visitors, with a catchment area of about 13.5 million people as presented in Table 15.5. The overall penetration rate is estimated at 6% in the first year reaching about design level in the fifth year of operation. Clavé's work (2007) shows that established brands in the US, with a high volume of repeated guests, may easily double the penetration rates presented in Table 15.5. Yet Big Bang Smurf (as Walibi Lorraine) while under the ownership of Six Flags only managed to achieve 480,000 visitors on a two-hour catchment of 18 million.

Table 15.5. Design for a 1.5 Million visitor theme park.

Item	Year 1	Design Year 5
Population catchment	13,500,000	13,500,000
Penetration rate	6%	11%
Visitor numbers	810,000	1,485,000
Peak month	162,000	297,000
Design day	9,419	17,267
Peak in-ground	7,064	12,951
Average entertainment units/hr	1.5	1.5
Total entertainment units/hr	10,596	19,426
Average ride throughput/hr	600	600
Mean number of attractions	17	32

The park in Table 15.5 is assumed to be year-round, but has some seasonality; the peak month being August, with an anticipated 297,000 guests in the design year. There are eight weekend/holiday days in August and twenty-three weekdays, with attendance at weekend days being 2.5 times those of weekdays. From this it follows that the design day is $297{,}000 \times 2.5/(2.5 \times 8 + 23) = 17{,}267$ guests, which is typically 10%–20% below peak numbers. As a rule, seasonal parks in the US may expect to have a design day of 1%–2% of annual attendances.

The design day is used to determine the time period in which the 'peak in-ground' number would occur. The latter is arrived at by first recording likely hourly arrival numbers during opening hours and then deducting departure patterns, recorded on the same basis, from arrivals. Let this value be 75% of the design day occurring late in the morning (though it can be as high as 85%), giving a peak in-ground figure of 12,951 upon which the infrastructure, facilities and attractions in the park will be based. The industry standard is that, given queuing time, 'walk-around' time and miscellaneous activities, the average guest should participate in 1.5 to 2.5 entertainment units per hour, the lower figure being typical in dry parks (with a spread of 1.2–1.8), with a higher figure being more appropriate for water parks.

Taking 1.5 as the standard, this park should have an hourly operating capacity of $1.5 \times 12{,}951 = 19{,}426$ entertainment units. Major roller coasters have ride throughputs that range from 1,000 to 2, 000 entertainment units per hour (the Disney model is based on approximately 1,600 per hour), but the simple provision of 19 coasters is not the planning answer. While

some operators, such as Six Flags and Wet'n'Wild, specialise in 'white knuckle' rides, most provide a mix to entertain the whole family. This will reduce average hourly throughput, for while an average coaster ride may only last around two minutes (the larger ones lasting up to four minutes), a show can be a half-hour or more in length. Adjusting for average ride throughput in Table 15.5, yields a 'nominal' provision of 32 attractions made up of, say, six key or 'anchor' rides that can be the focus for promotion, 18 medium-sized round rides (capacity-filling flat rides that appeal to young children), and eight live shows, play areas and film-based activities to round out the mix. The latter are significant when seasonal conditions imposed by the weather and marked peaks in attendance affect capacity usage and question the viability of developments. Parks will therefore limit the number of anchor rides; replacing them with less expensive attractions and increase the amount 'soft' capacity in terms of seating for shows and films. In the former case, Legoland parks have structured workshops where model-makers are on display and give advice to visitors, and their Miniland exhibition is a passive visual activity that can absorb considerable numbers.

Seated entertainment is continually improving; hence Futurescope, Poitiers (1987), is made up entirely of 3D films, 360° cinema, simulators, other audio/visual attractions, and more recently 4D. The latter combines 3D visuals and the other sensory elements, such as water misters and scent/smoke cannons, with theatre style seats that are synchronised with the screened action. Conversely, 4D rides, such as Universal's Spider-Man that cost US$200 million in 2002, can only be endured by destination parks, especially when it is down for refurbishment in 2012.

As well as increasing utilisation, a programme of events is also a way of adding to capacity without incurring long-term overheads. For example, Nordic city parks have a strong emphasis on shows, and the popularity of Christmas Markets in Europe has enabled them to open from mid-November through to Christmas week, while many American parks celebrate both Halloween and Christmas.

15.5.4. *Queues*

The figure of 32 attractions is stated only as 'nominal' because several judgmental factors need to be considered before placing the mix on an overall plan for the park, namely:

- Does this level of investment warrant the market penetration rates used at the proposed admission charges?

- Are there enough attractions to encourage sufficient repeat visits? In the best parks, repeat visit rates can run at 80% and certainly should not be below 40% for established parks.
- What will the queues be like for the principal rides?

Not achieving the right level of investment can lead to rapid closure as in the case of Britannia Park in England opening and closing in 1985, or when Zygofolis had serious cost over-runs, resulting in the 'skimping' of the theming and Mirapolis had too few attractions.

It is evident in the major parks that in spite of improvements in the design of queues as part of the fabric of the attraction, visitors are becoming ever more irritated with paying higher entrance fees, only to wait for hours for a two-minute key ride. Traditional solutions have been to try to manage visitor flows around the park to smooth arrival patterns at the various attractions and increasing capacity. The most recent direction has been the introduction of timed/priority ticketing, for the anchor rides, such as Disney's Fast Pass, Universal's Express and Six Flags' Flash Pass. By renting a hand held wireless device (Q-bot), guests can reserve their place in line for a number of rides and attractions. Adding to capacity means taking account of the variability in the standard 1.5 entertainment units. On average, visitors should expect to spend about 25% of their stay queuing, the exception being at peak times, but if 1.5 is the mean of a symmetric probability distribution, then only 50% of peak in-ground activities would be covered. From statistical quality control theory, the Camp–Meidell inequality shows that for symmetrical distributions the probability of an outcome that is greater than, say, x standard deviations from the mean is $1/(4.5x^2)$ even if the exact probability distribution is unknown. The spread 1.2–1.8 indicates a standard deviation of 0.3 units, so a value of 1.8 (plus one standard deviation) would account for 78% of the distribution, and by interpolation 1.77 would encompass 75% of peak in-ground requirements. This will raise the number of attractions at design level in Table 15.5 from 32 to 38.

It is a matter of economic judgement as to whether the number of rides will be raised to 38, or if higher capacity rides should be added so as to maintain the design level at 32, or whether some rides may be phased in as visitor numbers adjust to the park's design year, which tends to happen, or is it sufficient to deal solely with queuing at the anchor rides? It is to be noted that the benefits of reducing waiting times go beyond customer satisfaction, as more time is now available to spend in the restaurants and shops.

Once the number of rides has been agreed, they are evaluated for their place on the master layout, their suitability for the range of imagescapes proposed and their contribution to the balance of the experience provided by each zone. This will go through several iterations in refining details to optimise the park's creative appeal, effectiveness and affordability, and ensure that no particular cultural habits are overlooked, for example, the tendency of the family to always lunch together in a fixed one hour period, as in France (Altman, 2007). Of course, it is possible to over-design a park, so a normal tenet is that the costs for professional services, pre-opening expenses, and other incidentals, should not exceed 30% of the total investment. The process does not stop at the design year: parks encourage repeat visits through festivals and events, re-theming old attractions and spending some 5%–10% of their initial investment on launching new rides, preferably to offer something new every year. A working rule used by the LEGO Corporation was to put aside for reinvestment the equivalent of depreciation each year. Annual developments are usually fairly modest, but the larger parks do compete in trying to have several 'firsts' in their portfolios and therefore introduce major attractions every two or three years which can boost attendance by 6%–10%. The branded parks have the advantage of recognition: for example, in 2004, both the Universal Studios Hollywood and Orlando gained from the introduction of their US$45 million Revenge of the Mummy Ride.

15.6. Conclusions

The architectural innovations created by Disney in 1955 spread outwards as they were adopted by the amusement park industry. By 1975, the top 30 parks drew in some 65 million visitors. Ten years later this number had risen to 95 million, reaching 160 in 1995, 200 in 2005, and 206 million in 2010. As the market matured, so the major US operators used their economic 'muscle' and expertise to expand overseas, normally through acquisition of independents (which simplifies planning issues) and joint ventures. However, other than Disney, this last decade has not been kind to US parks. The economic downturn following 9/11 put a brake on activities, forcing Six Flags to put itself up for sale in 2005, but there were no bidders. Better times in 2005–2007 were met by the banking crisis of 2008, leaving Cedar Fair (acquired by Apollo Global Management in 2010) to restructure its debt. Market growth has shifted to Asia and around the Pacific Rim, particularly China, but with some of the more spectacular developments in the oil-rich Middle East countries, notably the indoors Dubailand (2007) and Ferrari World (2010).

For the future, imagineers are looking at 5D: Creating attractions that interact with people's emotions, perceptions, mental image processes, logical thinking and social interaction through human communication, with improved queue management, building on mobile phone technology, to reduce complaints. AV has become fundamental to design for today's 'tech-savvy' audiences, facilitating promotion by allowing guests to see what awaits them by viewing websites. Despite modern imagery, the essential feature of the roller coaster, which is travelling along a track at 'breakneck' speed, still continues to delight. Steel structure have allowed designers to add new twists and turns, and push the envelope of G-force to around 6.5 for a fraction of time, reach heights of over 400 ft, and speeds of well over 100 mph. Imagineers have now made coasters that are classified as 'bobsled', 'inverted', 'flying', 'pipeline', and 'suspended', but for purists there are still 167 wooden coasters that emulate the ever-popular 'Wild Mouse' variety. These retro coasters send individual cars hurtling around hairpin turns and look like they are about to jump the track with every abrupt change in direction.

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About the Author

Refer to *About the Author* in Chapter 12.

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Chapter 16

CRUISE TOURISM

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Abstract: Cruising for leisure purposes, whether on the ocean, along coasts or rivers, has demonstrated consistent growth as a tourism activity. Cruising can be divided into a number of sub-markets, within which most supply is oligopolistic in nature, and concentration is increasing. Cruise lines pursue various strategies, but it is shown that pricing is not the most significant, as demand, cruise products and prices are amorphous. Unlike fixed-location tourism, cruising is a footloose product, where factor inputs may be sourced globally and cruise lines may have little connection with port destinations served on itineraries. Operationally, economies of scale, capacity and revenue management are important tools for operators, as vessel sizes increase and operational management and marketing become more sophisticated. The impacts on local and national economies are in many ways analogous to those of tourism in general.

Keywords: Capacity; differentiation; footloose; oligopoly; ports; revenue management; ships.

16.1. Introduction

Within the realm of tourism, cruising is almost unique in that it does not necessarily require any fixed destinations for tourists. For cruise tourists, no country has the automatic monopoly ownership of destination attributes, but it must compete with others in the destination market place. Although the development of 'modern' cruising markets has been dated to the 1970s (Marti, 2004; Klein, 2005), the notion of cruising by ship without the need for a specific point-to-point transit journey (line voyage) has been popular since the 1930s, and indeed is attributed to Cunard's first transatlantic 'cruise' trip on the Britannia in 1840 (Gulliksen, 2008), and to *voyages d'agrément* in the French Mediterranean from 1853 (Berneron-Couvenhes, 2007).

Between the 1930s and the 1980s, cruising developed largely as a supply-substitute activity to employ vessels that were required less and less for line

voyages, owing to the growth of more efficient and lower-cost air passenger transport. Hence, the majority of cruises operated during that period were provided by long distance passenger shipping lines, using liners whose physical usefulness outlasted their commercial value in voyages. Shipping lines such as Canadian Pacific, Hamburg-America, Italia and Cunard were the dominant owners. As liners came to the end of their useful working lives, they were replaced by specialised cruise ships, whose design and operating economics more accurately catered for market and owners' needs.

The cruising 'product' has been variously described. In some cases, it may be a floating version of a bus tour, offering the opportunity to visit a range of destinations. This seems to have been the case with the development of Mediterranean cruises (Berneron-Couvenhes, 2007), with river cruises and with increasingly popular coastal cruising (Nilsson, 2007). In other circumstances, the cruise ship itself may act as a floating resort destination, where *pleasure is interiorised, with the surrounding sea an essential but featureless backdrop* (Steel, 2009, p. 65). The difference in emphasis between ports as destinations and the vessel itself as the destination provides the first level of sectoral product and market definition within cruising.

Since the 1980s, the cruise industry has become increasingly commercially sophisticated. Cruise companies have 'mainstreamed' their products (Gulliksen, 2008) to attract families, younger groups and even business passengers to complement their traditional clientele. They have also segmented their markets, co-branded and packaged products, found ways to operate at lower cost, introduced refined revenue management methods, and developed business strategies as leading-edge as any in tourism. As a result, cruise tourism has grown globally at a rate comparable with that of the most consistent fixed tourism destinations.

Table 16.1 shows growth in global cruise passenger numbers on ships operated by Cruise Lines International Association (CLIA) members (over 90% of all cruise lines). Although passenger days are normally cited as the main measure of industry output (Bull, 1996), passenger numbers are a good substitute statistic, since the average length of an individual cruise has remained remarkably consistent at around 6.9 days since the 1980s (CLIA Passenger Carryings Reports). Apart from 1995 and 2009, there has been a consistent record of market growth, averaging 6.9% annually over 20 years. This growth subsumes both a global increase in demand generally and a very large growth in supply. As with most other types of tourism, supply is determined by fixed capacity; in cruising, that capacity is 'berth nights' (cf. bed nights in hotel accommodation). Between 2000 and 2010, annual berth night

Table 16.1. Global cruise passengers in CLIA associated ships.

Year	Passengers (m)	% growth
1990	3.77	
1991	4.17	10.6
1992	4.39	5.3
1993	4.73	7.7
1994	4.8	1.5
1995	4.72	−1.7
1996	4.97	5.3
1997	5.38	8.2
1998	5.87	9.1
1999	6.34	8.0
2000	7.21	13.7
2001	7.5	4.0
2002	8.65	15.3
2003	9.53	10.2
2004	10.46	9.8
2005	11.18	6.9
2006	12.01	7.4
2007	12.56	4.6
2008	13.56	8.0
2009	13.43	−1.0
2010	14.3	6.5
2011est	15	4.9
Average		6.9

Source: CLIA.

capacity globally almost doubled, from 53 m in 2000 to 103 m in 2010 (CLIA Cruise Market Overview 2010). The current value of global cruising is estimated at US$29.34 billion for 2011 (*Source:* www.cruisemarketwatch.com/).

Against this background of growth in the cruising sector of tourism, there has been criticism by Papathanassis and Beckmann (2011) of a lack of scholarly research relating to the sector. Yet the same article finds over 140 published articles over the past 20 or so years that analyse aspects of cruising, even if they do not develop a single 'cruising theory'. Indeed it is possible to suggest that there is no more likely to be a single theory of cruising than there is a single theory of tourism, something that has evaded academics for over 40 years. However, the published literature, including

books and reports, covers sociological, geographical and legal issues extensively, as well as economic issues to which this chapter relates. The key economic issues involve markets and company strategy, demand, factor inputs and cruise ship design, operating economics, and economic impacts of cruising, which roughly outline the nature of the rest of this chapter.

16.2. Cruising Markets and Geography

To investigate the economics of cruising tourism, it is necessary to define markets and market places. It may be possible to define all cruising as a single market/industry which is essentially unified, though with market segments. There is an assumption of overall competition and substitutability, although cruise lines may differentiate their products strongly according to needs elicited through market research. Hobson (1993) suggested that this was the case in the 1990s, positing four market segments: mass, middle, luxury and speciality. This approach is also implied by Weaver (2005) in suggesting that the central and main part of the cruising industry has been subject to 'McDonaldization', or a high degree of product standardisation in terms of many, though not, of the product elements.

With differentiated products, the notion of what constitutes a single and specific market is problematic. Any two or more products are normally considered to be of the same generic product class if there is a high degree of substitutability between them, which is measured by a high cross-price elasticity of demand. However, there is no clear agreement over what may constitute a sufficiently high measure of cross-price elasticity in order to determine the point at which products can definitely be considered to be in the same market. This is a general problem in tourism where the level of substitutability is by no means only limited to trip types, but is also influenced by geography, politics and, increasingly, technology. The boundaries of a cruising market can be defined qualitatively by recognition amongst producers and consumers that the cruise products traded are performing essentially the same function, or possess some basic homogeneous characteristics. So the 'sun and fun' cruises of 3 to 10 nights by large ships in the Caribbean, based around casino operations, entertainment and good weather, represent a coherent market. Similarly, cruises offering 'exploration' (throughout many parts of the world) or 'classical antiquities' in the central and eastern Mediterranean, may constitute markets within which cruise line products are considered relatively substitutable and there will be some element of price similarity and competition (Bull, 1996).

In geographical terms, river cruising and coastal cruising offer some of the determined characteristics of fixed destinations, and may be expected to relate to global-regional or national markets in the same way as fixed destinations do; that is, they are likely to be subject to distance-decay in terms of the origin of demand, and to consist often of regional or national firms (cruise lines) rather than global ones. However, ocean cruising has become progressively globalised (Gui, 2010), and markets that were once almost wholly dominated by US lines and consumers now have a global supply and demand.

Soriani *et al.* (2009) note that there have been, and are continuing to be, substantial changes in the global deployment of cruising capacity, which is normally measured by bed days or passenger days available. In the 1980s, 60% or more of deployed capacity could have been found in the Caribbean, whilst 30 years later it is 40% or less. Gui (2010) refers to the Caribbean and the Mediterranean as cruising's 'marquee regions', but today they collectively play host to no more than 50% of global capacity. Other traditional cruising regions — the coasts of North America, Alaska, the South West Pacific, Northern Europe and the Eastern Atlantic — hold a relatively constant share of capacity. However, the greatest growth lies in newer areas such as South American coasts, the South China Sea and North West Pacific, and river cruises on such rivers as the Rhine, Danube, Yangtze, Mekong, Nile and Amazon. The geographical considerations of cruising, together with the issues of seasonal differences, when vessels may be re-positioned into different parts of the world to take advantage of suitable climates, are considered fully by Charlier and McCalla (2006).

Thus there may be a schema of cruising markets in economic terms that would look something like that in Table 16.2.

16.3. Industry Structure and Strategy

In all of the cruising markets suggested above, there are a number of cruise lines in operation, offering cruise products between which there is a positive, but not infinite, cross-price elasticity of demand. Thus, cruising generally exists within a structure of either monopolistic competition or oligopoly (as is the case with very many tourism products globally). But there are differences between the various markets. A monopolistically competitive market has many firms, each offering a version of the product that is differentiated from others, but with no restriction on entry and reasonable contestability, where it is possible for many firms to enter the market and compete sustainably.

Table 16.2. A schema of cruising markets.

Location/type	Comment	Supply/markets
River, canal and lake cruises	Several markets according to location	Small, shallow-draft vessels, often domestic markets, cabotage-limited
Coastal cruises	Several markets according to location; some special interest	Specialist coastal vessels/lines, may be linked with coastal freight or mail
Extended ferry 'mini-cruises'	Usually domestic or between country pairs	Joint product with car ferry services
Special interest (such as sail, exploration or education)	Global markets, highly differentiated	Often purpose-built vessels, specialist crews, a degree of monopoly through differentiation
Short ocean cruises	World market, dominated by US demand into the Caribbean, but increasingly global	Mostly very large vessels, purpose built for mass cruising
Long distance ocean cruises, including Round The World	Single world market	Large vessels, internationally resourced, often providing 'tradition' and 'luxury'

Source: Adapted from Hobson (1993), Bull (1996) and Nilsson (2007).

However, there are clear barriers to entry in most of the cruising markets identified. Barriers to entry include:

- Large capital requirements to invest in purchase or long-term leasing of vessels. A modern cruise ship can cost US$150,000 to US$300,000 per passenger berth (2011 prices), and whilst second-hand vessels are much cheaper, they often require expensive investment in refitting.
- Restrictive practices by existing operators in access to ports and terminals. For example, for many years NCL (Norwegian Cruise Lines) had exclusive calling rights at Tabuaeran Island, Kiribati, an important point between the Central Pacific and Hawaii.
- Distributor agreements and other restrictive vertical practices. Many cruises are sold through specialist cruising travel agents, and exclusive agreements are common.
- Legal and licensing controls such as cabotage. Because cruising involves a form of passenger transportation, many countries still apply restrictions

Table 16.3. Major suppliers of ocean cruises 2011/12 (number of passenger berths available).

Operator	Berths	% of market
Carnival Corporation	204,300	53
Royal Caribbean	86,900	23
NCL/Genting (Star)	32,200	8
MSC	24,700	6
Disney	10,400	3
Others	26,800	7
Total	**385,300**	**100**

Sources: Various, including Cruise Industry News Annual Report 2011, Cruise International, CLIA Source Book 2011.

on foreign operators. For example, Mak *et al.* (2010) review the impacts of the US *Passenger Vessel Services Act* of 1886 on cruising more than a century later.

Thus, across the board there are oligopolistic structures within cruise markets, in which a small number of lines dominate supply in each one. In the main global ocean cruising market, capacity is in the hands of no more than four or five main suppliers (see Table 16.3). The 2011/12 four-firm concentration ratio $CR_4 = 0.90$ (in 1995 for this market, CR_4 was 0.53), and there has been continuous concentration of the industry over many years. A similar pattern is to be found in both special interest/luxury cruising. River cruising is less concentrated, and its ownership pattern is complicated by considerable amounts of cross-chartering and separation of vessel ownership from cruise operation. However, some estimate of the current main supply of river cruising is shown in Table 16.4.

The oligopolistic practices employed by cruise lines have been discussed by many researchers (for example, Wie (2005), Papatheodorou (2006), Chin (2008), Veronneau and Roy (2009), Di Vaio *et al.* (2011)). On the whole, strategy development within cruising is not based around pricing. There are some examples of firms developing low-cost, low-price cruise lines. Gross (2010) outlines the strategy and operations of EasyCruise in attempting to emulate low-cost air transportation business models, but there has never been the level of sustained growth that the business might have expected. It is evident that the plethora of stateroom types, ship facilities and cruise opportunities on board even one vessel may be so complex that no consumer

Table 16.4. Major suppliers of internationally-available river cruises 2011/12 (number of passenger berths available).

Operator	Berths	% of market
Nicko (chartered ships)	4,000	16
Russian Cruise Co.	3,400	14
Viking	3,000	12
Phoenix (inc. chartered)	2,800	11
Avalon/Globus	2,400	10
AMA Waterways	1,700	7
Uniworld	1,400	5
Others	6,300	25
Estimated Total	**25,000**	**100**

Sources: Various, including www.rivercruise.com and author's own data collection.

can easily make price comparisons and thereby select their purchase in the same way that they could in evaluating standard point-to-point air travel. Indeed, Marti (2004) finds that 'fares announced.... for any cruise are by their very nature ambiguous'. Stateroom differences, revenue management systems and currency used can all play a role in altering actual prices.

Product differentiation, however, is a key strategy for most operators. In the mid-20th century this was likely to have been achieved through different itineraries, and this is still the case with special interest or 'exploration' cruising. But in mass market cruises, differentiation is more likely to be delivered through on-board facilities, style or atmosphere. Disney Cruises have specialised since their inception on developing an on-board family entertainment product related to their movies and theme parks. Smaller cruise lines attempt to carve niche markets, and Weaver (2005) notes that the largest operators such as Carnival Corporation divide their offerings into differently-themed brands such as Carnival (party cruises), Holland America (more sedentary), Costa (Italian themed) and P&O (British themed). Most of the larger lines provide different 'classes' of ship to support product differentiation; for example, Royal Caribbean International offers six classes or styles of vessel.

Multiple branding has itself often come as a consequence of another strategic imperative within the cruise industry: mergers and takeovers. The large operators have grown their businesses largely through horizontal (and vertical) integration. Kwortnik (2006) and Klein (2005) both review the acquisitions activity of Carnival Corporation from its inception in 1972 to the

present day. Some of the acquired businesses had themselves developed by acquisition along the way. A large cruise line clearly benefits from economies of scale in sourcing inputs, specialised management and marketing, political power, and the ability to sell in global markets (especially for ocean cruising). Wie (2005) also demonstrates the theoretical benefits for a cruise line in being in a leadership position within the industry, in terms of flexibility in long-term capacity decisions and competitive position. Therefore, integration has been a hallmark of the cruising industry for many years, whether by acquisition (the Carnival Corporation model) or alliance (for example Genting and NCL).

16.4. Demand and the Cruising Product

Traditionally, cruise consumers were of older age groups, affluent, expected high quality facilities and service, and demand was relatively price inelastic (although strongly income elastic) (Berneron-Couvenhes, 2007; Nilsson, 2007). Even today, although cruise lines have made great marketing attempts to broaden the age appeal of the product, the average age of a cruise consumer is 50 years (*FCCA Cruise Industry Overview 2010*). But the nature of the product demanded, and the way in which it is consumed, have changed dramatically since the mid-20th century. There have developed clear market segments, such as drinkers and gamblers, culture seekers, hedonists, and those seeking an alternative to a land resort. Hung and Petrick (2011) study the motivations of ocean cruise passengers and reported four main motivational dimensions: self-esteem and social recognition, escape/relaxation, learning/discovery, and bonding. It is notable that these do not vary greatly from motivations reported in general for tourism, with the exception of the first one, which is distinctly more important in cruising. Cruising is still often viewed as of high social recognition value.

Whether some type of cruising are still perceived as ostentatious products is however a difficult thing to determine. Price elasticity of demand for cruising is very poorly researched, partly owing to the problem already noted that prices are complex and often ambiguous. In a questionnaire-based study, Petrick (2005) isolates three groups of passengers according to their price sensitivity (low, medium and high), but it is unclear what levels of price elasticity would actually be associated with each of these groups. There is anecdotal evidence that in the luxury cruise markets such as that for Round The World cruising, the product may be an ostentatious one with positive price elasticity, in that the higher-priced staterooms and suites are nearly always the first to sell out.

Table 16.5. A comparison of cruise passengers' and general tourists' motivations.

Motivation to purchase	% extent to which cruise passengers nominate the factor more than general tourists do
Initial exploration of a destination that one can return to later	32
Range of offerings	28
Safe	27
Reliable	27
Get away from it all	26
Hassle free	26
Fun vacation	25
Chance to visit several locations	23
Variety of activities	23
Easy to plan and arrange	22

Source: Adapted from CLIA (2009).

CLIA (2009) review cruise passengers' purchase motivations against those of non-cruise tourists. In comparing these groups, an examination of the differences in percentages nominating specific product aspects as important is illuminating, and is shown in Table 16.5.

This study suggests that the all-inclusiveness, safety and reliability of cruises are key determinants of demand, together with the very important factor of consumers' ability to check out particular destinations on an itinerary before deciding whether to take a longer trip to them. The CLIA study indicates that 80% of cruise passengers consider this to be very important, and that up to 50% may return on land-based tourist trips as a result. This evidence together with the renowned consumer loyalty in repeat purchasing from particular cruise lines suggests that cruise consumers are generally more psychocentric than allocentric in their tourism behaviour. The same study reported that in 2008, average weekly cruise passenger spending on their trip was US$1770 per person, compared with US$1200 by non-cruise tourists. So there may be some clear differences between a typical cruise passenger and other tourists, but as Dev (2006) and others point out, the more that cruise lines emulate land-based resorts in terms of product offering, the greater is the likelihood of increased substitution between floating and land-based reports by less cruise-committed consumers.

Whilst passenger demand has increased annually for many years at around 6%–7%, the length of cruises, and hence the total price, declined

from an average of 12 nights in 1980 to seven nights by the late 1990s (*CLIA statistics*). Since then, the average length has stabilised at around seven nights, with the popularity of a one-week cruise amongst passengers meaning that this is a modal as well as a mean length. Consumers are likely to fly to and/or from the cruise port terminal as part of an inclusive package, which means that vessels can be allocated to 'home' ports for a season and do not need to be constantly repositioned. Geographical demand patterns now closely mirror demand for international tourism generally, rather than being based — as 50 years ago — on markets in close proximity to departure ports.

The cruising product itself has changed dramatically over 40–50 years. When vessels were deployed from 'tourism origin' ports (for example, New York or Southampton), they needed to sail for a number of sea-days before reaching tourism destination cruising areas. Consequently, time at sea with Steel's (2009) 'featureless backdrop' might constitute more than 50% of the cruise (Dowling, 2006), Modern cruise vessels operating from close-to-destination ports (such as Miami, Venice, or Hong Kong) are likely to spend most days in a port, sailing between ports overnight if possible. A large number of new home embarkation ports have been developed since 1990 to aid this development, including at least 30 in North America (CLIA 2009).

Meanwhile the on-board cruise product is developing as a sophisticated product concept that reflects the needs of consumers, product differentiation, and opportunities for additional revenue-generating activities. Some key developments are:

- Developing an on-board theme, such as 'carnival', Russian culture, or the make-believe of film-based entertainment (Antonucci, 2009);
- Increased attention to the on-board 'shipscape' (Kwortnik, 2008), such as balconies to staterooms, or separation of fun areas from relaxation areas;
- Increased cruise line supply and management of optional on-shore excursions and activities (Douglas and Douglas, 2004) rather than leaving passengers to their own exploration;
- Unbundling the traditional all-inclusive cruise product (Klein, 2005) so that some elements such as premium-quality meals, personal services or capacity-constrained activities may be sold separately as profit centres;
- Standardisation of service methods, sometimes called McDonaldization (Weaver, 2005) to reflect best practice in efficiency; for example, the mass customisation of food services on large cruise ships, or on-board charge card systems;

- More joint products offered, involving a combination of a cruise and a shore stay.

Cruise lines have thus used the most advanced marketing and service/retail management concepts in order to compete effectively both with other cruise lines and with other forms of tourism.

16.5. Sourcing Factor Inputs, and the Economics of Operating a Cruise

Ocean cruising provides an excellent example of the possibility of 'footloose' tourism operations. A cruise line can in theory be operated from any country, with acquisition of the factors of production and their deployment wherever there is the highest marginal productivity. Most tourism is location-dependent, and the destination country or area must provide at least some of the resources used such as land, buildings, and usually labour. But no such limitations apply to ocean cruising (although they may partly apply to river, coastal and other domestic cruising). Cruise lines may be corporations set up in countries not renowned for tourism activity, and they may obtain factors of production largely from other 'non-tourism' sources, depending on their productivity.

Cruise ships may be purchased new, second hand, or they may be chartered. European cruise lines are more likely to charter vessels, where American and Asian lines are more likely to purchase them. The majority of new large cruise ships coming into service over the past decade were ordered by the largest four cruise lines (Soriani *et al.*, 2009), and in a similar way to the aircraft industry where construction is dominated by Boeing and Airbus, large cruise ships are almost all built by four suppliers: Fincantieri (Italy), Meyer Werft (Germany), Mitsubishi (Japan) or STX (Korea/Finland). The dominance of these four companies reflects increasing specialisation skills, as well as the result of merger activity, in passenger shipbuilding. Most new cruise ships are very large, and exhibit major economies of scale in operation. For example, a comparison between Carnival Corporation's first ever vessel and their 100th vessel is shown in Table 16.6. Newer vessels are not only larger, but they have more space and tonnage per passenger. The example also shows an increase in the passenger/crew ratio from 2.5:1 to about 3.5:1.

Although there is also construction of smaller ships, the majority of these are for specialised markets such as luxury, mini- and river cruises. Other than the biggest cruise lines, other companies operating mass-market ocean cruises tend to purchase second-hand vessels, rename and refit them. Ships are often registered in the most commercially efficient maritime registration

Table 16.6. Attributes of the Carnival Corporation's first vessel (Mardi Gras) and that of their 100th (Carnival Magic).

Ship	Acquired	Tonnes	Length	Speed	Propulsion	Pax	Crew
Mardi Gras	1972*	27,250	199 m	21 knots	Steam turbines	1,240	500
Carnival Magic	2011	130,000	306 m	22.5 knots	Diesel electric	4,724	1367

*Mardi Gras was originally built in 1961 as the Empress of Canada, for the CP Steamship Co.

countries, such as Panama, Liberia, Bermuda or Cyprus. Chin (2008) reviews the commercial value to cruise lines of flags of convenience.

Other resources are likely to be found internationally as well. Finance is sourced globally: Carnival Corporation is dual listed on the New York and London Stock Exchanges, Royal Caribbean in New York, and other major lines are additionally financed from Switzerland, Russia, Malaysia, Japan and Greece. Crews are multinational (Chin, 2008); there is still some likelihood that ships' officers may come from the traditional providers such as Norway, Greece or Italy, but the mass of deck crew, housekeeping, engineering, entertainment, kitchen and stewarding personnel are likely to come from as many countries as would the staff of a London or Dubai hotel. Again, cruise lines search for maximum marginal productivity. It is difficult to compare wage rates with shore-based employment, since there is a *de facto* requirement for all board and accommodation to be provided during cruises, and on most lines a complex gratuities system that can render official pay rates meaningless for passenger service-based crew members. The wages bill however is likely to be high where the cruise line sets itself up as a 'luxury' product, since a high ratio of crew to passengers is a common measure of quality.

Again, the complexity and multinational nature of large cruise lines means that other factor inputs such as fuel, food and 'hotel supplies', replacement parts for ships, and corporate supplies are likely to be sourced globally. Véronneau and Roy (2009) draw attention to the importance of global supply chains that maximise efficiency and cost effectiveness.

In terms of operating economics, in shipping, costs are traditionally divided into capital costs, fixed running costs and voyage costs (Bull, 1996).

- Capital costs include those of purchasing and depreciating vessels, together with interest payments on investment capital and central corporate costs;

- Fixed running costs consist of all those incurred when a vessel is put into service (not laid up), and include all areas of insurance and indemnity, operational crewing wages, stores, surveys and repairs;
- Voyage costs are those that are variable with respect to a voyage or cruise, including port charges, fuel costs, food, landside handling and passenger-related crewing wages.

Fixed costs, including the vessel and its depreciation, represent a high proportion of total costs. A vessel cannot be subdivided, so there is no real supply flexibility. In addition, once a specific cruise or voyage is committed to, almost all voyage costs are incurred regardless of the number of passengers, so that the operational necessity is similar to that of an airline or hotel chain; that is, to maximise load factor or occupancy rate, subject to revenue value.

The Cruise Market Watch website provides data for the average weekly revenue and expenses per passenger for a cruise line. These are shown in Table 16.7.

Table 16.7. All cruise lines: Average weekly revenue and expenses per passenger, 2011(US$).

	Revenue	Expenses	%
Ticket	1,155		75.5
Casino and bar	207		13.5
Shore excursions	75		4.9
Spa	37		2.4
Other on-board spending	56		3.7
Total Revenue	**1,530**		**100.0**
Corporate operating costs		474	31.0
Shipboard payroll		169	11.0
Agent commission		162	10.6
Depreciation		153	10.0
Fuel costs		107	7.0
Victualling		96	6.3
Interest expense		76	5.0
Other ship costs e.g. port fees		69	4.5
Other on-board costs		67	4.4
Total Costs		**1,373**	
Profit before tax		157	10.3

Source: www.cruisemarketwatch.com/blog1/.

The very high proportion of fixed capital and fixed running costs, together with the *de facto* capacity constraint of passenger numbers leads cruise lines to make every attempt to operate their ships at or close to full capacity, as marginal cost per passenger is low, and in the short run even if the marginal fare charged only covers this marginal cost, there are good opportunities to use on-board spending, which can be seen from Table 16.7 to account for nearly 25% of revenue, as a source of monopoly profit.

Cruise lines therefore pay a great deal of attention to revenue and cost management. Since the 1980s, yield management systems that were developed for airlines and then for hotels have been improved and elaborated into revenue management systems, and have been widely adopted by the cruising industry (Biehn, 2006; Maddah *et al.*, 2010; Xiaodong *et al.*, 2011). The complexity of stateroom types, different cruise itineraries, and adjustment for anticipated but not-contracted on-board spending makes revenue management systems for cruising very complex and, as Biehn (2006) points out, unlike systems for hotels. In addition, there are multiple constraints on supply, principally those of stateroom accommodation and lifeboat space. Nevertheless, good revenue management systems have led to a reduction in the automatic discounting of fares that was the most common method of maintaining passenger numbers up to the mid-1990s (Bull, 1996). Demand and revenue maintenance are linked also to other aspects of competitive marketing such as promotion, distribution and product planning. In most cases the objective is to create product differentiation which may be vertical differentiation (by quality, as in the case of 'premium' cruise brands such as Seabourn, Crystal or Silversea) or by horizontal differentiation (by cruise product characteristics, such as Disney's themed cruises or Hurtigruten Norwegian coastal cruises). A competitive cruise product involves not only the introduction of novel on-board attributes such as climbing walls, wave machines and sophisticated shipscapes, but also the design and maintenance of itineraries that reflect changing consumer needs through good marketing research.

Itinerary choice is also influenced by cost management. A cruise will *cet.par.* be scheduled to operate into ports with low port charges (Klein, 2005, pp. 109–115), have inter-port distances that can be easily covered at most economical sailing speed, and operate to or from ports where the most inexpensive bunkering is available. Marine engine technology demonstrates continuous fuel-efficiency improvements, so that the trend towards slower speeds at sea that was a feature of cruising using former line-voyage ships — built for speed, not economy — is no longer valid. Other cost reductions have been achieved through economies of scale in increased ship size, not only in

ocean cruising ships as previously shown, but also in mini-cruise ferries, river and coastal cruise vessels. Ocean cruise ships with more than 4,000 passenger berths are now normal, as are river cruise vessels with 200–300 berths.

16.6. The Economic Impact of Cruises on Destinations and Economies

There is now a strong and increasing literature on the economic (and other) impacts that cruises have on destinations. Dwyer and Forsyth (1998) present a robust model for analysis of these impacts that examines cruise line expenditure, passenger expenditure at the port and its area, and the multiplier impacts and leakages that result from these two. The majority of empirical studies that have been documented on this topic cover expenditure/local income, rather than employment impacts.

Direct expenditure is the first stage of measurement. For example, Douglas and Douglas (2004) produce estimates, based on an adapted version of Dwyer and Forsyth's (1998) model, of expenditure in Pacific island ports when cruise ships call. Table 16.8 shows a breakdown of the types of expenditure:

Table 16.8. Expenditure in ports visited by cruise ships.

Passenger expenditure	Food and beverage
	Local tours
	Activities purchased in the port
	Transport
	Souvenirs
	Duty-free items such as cosmetics, alcohol and electrical goods
Ship/line expenditure	Port agency fees
	Water
	Berthing
	Waste disposal
	Security
	Agency expenses
	Port charges including towing and terminal
	Pilotage
	Fuel bunkering
	Providore
	Customs

Source: Douglas and Douglas (2004).

Douglas and Douglas (2004) provide estimates for a call by a cruise ship at Port Vila, Vanuatu, that measured total passenger expenditure at nearly A$195,000 and ship expenditure at A$27,500. The largest expenditure item was duty free goods, which almost certainly would have mostly been imported, hence providing little indirect and induced benefit to the local economy. BREA (2010) cite findings from their own surveys in 2009 in 29 Caribbean destination ports, which estimate that a typical cruise port-of-call generates about US$285,000 of expenditure. Again, the actual final value of such expenditure would depend on local multiplier effects, and in particular on the amount of leakages from the local economy. Dragin *et al.* (2010) examine cruising along the lower Danube river, and whilst they do not provide estimates of expenditure values, they find a similar pattern of impact, together with the creation of employment for local people as crew, particularly from Romania and the Ukraine.

Longer-term, the economic impacts of cruising in a local port or area are tied up also with the environmental and social costs and benefits that result. McCarthy (2003) examines the impact of cruise tourism in the regeneration of Valletta, Malta, and concludes that there are tensions between the requirements of cruise lines in having efficient modern terminals that may be self-contained (and perhaps owned or controlled by the cruise line itself) compared with the value of 'traditional' port areas that are in themselves a tourist attraction and which offer traditional employment opportunities. This finding contrasts with the efficiency approach in Italian ports studied by Di Vaio *et al.* (2011). Likewise, the argument that cruise ships impose a significant cost on port destinations through pollution and other environmental damage is considered by a number of researchers such as Lester and Weeden (2004), Lück (2007), Brida and Zapata (2010), Caric (2010), and Diedrich (2010).

The macroeconomic contribution of cruising posits further complexities in that it can include corporate central activity by cruise lines, capital expenditure, and commissioning of resources from multiple countries. BREA (2010) report on the value of cruising to the US economy under the following sections:

- Spending by cruise passengers and crew for goods and services associated with their cruise, including travel between their places of residence and the ports of embarkation and pre- and post-cruise vacation spending;
- The shoreside staffing by the cruise lines for their headquarters, marketing and tour operations;

- Expenditures by the cruise lines for goods and services necessary for cruise operations, including food and beverages, fuel, hotel supplies and equipment, navigation and communication equipment and so forth;
- Spending by the cruise lines for port services at US ports-of-embarkation and ports-of-call; and
- Expenditures by cruise lines for the maintenance and repair of vessels at US shipyards, as well as capital expenditures for port terminals, office facilities and other capital equipment.

BREA (2010) reports that the direct expenditure value of cruising to the US economy in 2009 was US$17.15 bn, and through input-output analysis they calculate a total of direct and indirect value of US$35.11 bn. A key finding is that despite a downturn between 2008 and 2009 related to general economic conditions, the value of cruising to the US economy more than doubled between 2000 and 2009 whilst national GDP only increased by 45%. Some 314,000 people continue to be employed in the US directly and indirectly through the cruising industry. Likewise, countries such as Finland and Korea, where cruise ships are built, or the Philippines or Goa, from which many crew members are recruited, receive both direct and indirect economic benefits.

Whilst the cruise industry has by no means been immune to global economic downturns such as that from 2008, it has demonstrated economic resilience, partly because so many of its operators are multinational or global, and can adjust their operations relatively easily to reflect changes in global demand rather than being tied by geography to specific destinations and their attraction to specific origin markets. Cruise lines also have developed a high level of commercial competence in product development, marketing, and above all in competitive strategy. As a result, most cruise lines and markets demonstrate relative stability and reasonable long-term growth, where new ships continue to be ordered, second-hand ships are traded 'down the chain' to other operators for renaming and refitting, and cruise lines are continuing to develop new itineraries and expand into new markets.

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Adrian Bull (abull@isqual.com) has been involved in research and teaching in tourism since 1974, principally in the UK at the Universities of Bournemouth and Lincoln, and in Australia at Southern Cross University. He has also worked in tour operations. He has written a number of articles, book chapters and two textbooks, and has increasingly been researching in the area of coastal and marine tourism. In addition he has acted or is acting as consultant to the governments of New Zealand, UK and Taiwan.

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Chapter 17

BEACH, SUN AND SURF TOURISM

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Abstract: Beaches are arguably the most valuable of coastal tourism assets. Around beaches, communities develop and tourism markets expand, often resulting in intimate human interaction with diverse environments. This chapter provides an overview of economic research on beach and surf recreation and tourism in existing and expanding markets, including a description of the techniques most commonly used to estimate the economic impact and value of beach recreation and some of the challenges around developing accurate estimates of use and value. Better understanding of the drivers and values for beach and surf tourism is an important consideration for optimal management of coastal tourism and recreation assets. This is brought into sharper focus as a result of the frontline exposure of many of these assets to the impacts of climate change. The importance, utility and benefit of beach valuation studies are highlighted through two detailed cases that demonstrate the use of a range of techniques and applications. The authors conclude the chapter with a discussion on the rationale for the development of a framework to more accurately identify and value beach and surf tourism and recreation assets and how it might best be applied to improve management outcomes.

Keywords: Assets; beach; climate change; coast; management; market and non-market valuation; recreation and tourism.

17.1. Introduction to Coastal Tourism and Recreation Assets

Coastal areas contain highly diverse and productive resources. People all over the world have concentrated on the coastal margins of continents for a variety of reasons; including reliability of food and water, ease of transport and trade, and milder climatic conditions. In more recent years, the demand for coastal real estate and increased leisure time has contributed to the desirability of the coast in many locations. Close to half of our global

population lives on or near the coast (Small and Nicholls, 2003), and this is increasing as the relative abundance of coastal resources and opportunities continues to attract large numbers of people to resettle along the coast.

In this chapter, we contend that beaches are the most valuable of all coastal tourism assets, exhibiting public and private good characteristics, providing natural habitats and supporting communities. Around beaches, communities develop and tourism markets expand, often resulting in intimate human interaction with dynamic environments. Coastlines also provide the gateway to a range of other marine recreation and touristic activities such as boat-based fishing and diving.

Rapid development of the coastal fringe has delivered significant benefits such as greater access to a range of resources. Increasingly, however, development combined with population growth and an expanding dependency on the coastal resource base is placing significant pressure on coastal systems, often resulting in degradation and loss of coastal habitat; and combined with the uncertainties related to climate change, place further pressure on the natural resource base. While well-managed and/or natural systems provide a vast range of ecosystem goods and services, many of them renewable, poorly or mis-managed systems can become toxic or hazardous, non-productive zones. How then do we value these highly prized and contested spaces; and how might an improved understanding of beach and surf assets contribute to better decision-making in the coastal zone?

17.2. The Coast Tourism and Recreation Economy

Much of human economic activity is intrinsically linked to the coastal margins. Martinez *et al.* (2007) estimate the total ecosystem services value of the coast (defined to include the continental shelf to a depth of 200 m and the terrestrial landscape to a distance of 100 km from the coast), represents 77% of the total value of global ecosystem goods and services (EGS) estimated in the landmark paper by Costanza *et al.* (1997). This represents a value of US$25.8 trillion (2007 dollars).

Tourism and recreation are significant drivers of this coastal economic activity. The majority of coastal tourism is centred around sandy beaches, as part of the Sun, Sea and Sand mass tourism market, making them an indispensable component of the economy for many coastal localities. The importance of beach tourism to the economy generally and to coastal localities in particular, is demonstrated through a number of studies. For example, Houston (2002) estimates that as many as half of the foreign tourists to the US are primarily drawn by the presence of beaches; and Klein *et al.* (2004)

provide a regional analysis of tourism earnings in the coastal zone of the US, concluding that these earnings are concentrated within 40 km of the coast. In many places this has created economic opportunities, but there is also a growing legacy of environmental costs, displaced communities and the perpetuation of inequality between the haves and the have-nots.

Beach environments have varying features and attributes, which determines their appeal to tourists (Williams, 2010). Miller and Ditton (1986) write that coastal tourism activities can occur as recreation, sport and play, leisure and recreation; with destinations falling along the full urban-rural continuum (Miller and Hadley, 2005). Typically, white sand and benign atmospheric and wave conditions are the most appealing. This is reflected in major beach tourism destinations such as California, Florida, the Mediterranean, Hawaii, Australia and Indonesia Table 17.1 provides an overview of the type of activities that typically take place at many of these beaches.

Traditionally, the coastal economy has been viewed mainly in terms of market values (e.g., commercial fishing, shipping, development and tourism). Commonly, the focus of market based studies is on gross expenditures, otherwise known as gross value added. However, the manner in which beach and surf assets are used, enjoyed and valued may not be measurable through an examination of economic impacts related to access and expenditure on goods and services.

Beaches are capable of supplying a number of different services, some more tangible than others (Bingham *et al.*, 1995; de Groot, 1994). The concept of Total Economic Value (TEV) (see Fig. 17.1), first described by Pearce and Turner (1990) and further developed by de Groot (1994), provides a framework for understanding the market and non-market value of ecosystem

Table 17.1. Typical sandy beach activities.

Active: beach/foreshore	Passive: beach/foreshore	Active: water/surf
Fitness training	Picnics/eating/BBQs	Swimming
Walking/jogging/running	Sunbathing	Board/craft riding
Beach games	Relax/read/unwind	Snorkeling/free diving
Competitions	People/nature watching	Fitness training
Rambling/exploring	Resting	Fishing
Surf Life Saving	Canoodling	Surf Life Saving
Cycling (foreshore)	Sand sculpting	Use of motorised craft
4-wheel driving		Scuba diving

Source: Adapted from (Raybould and Lazarow, 2009).

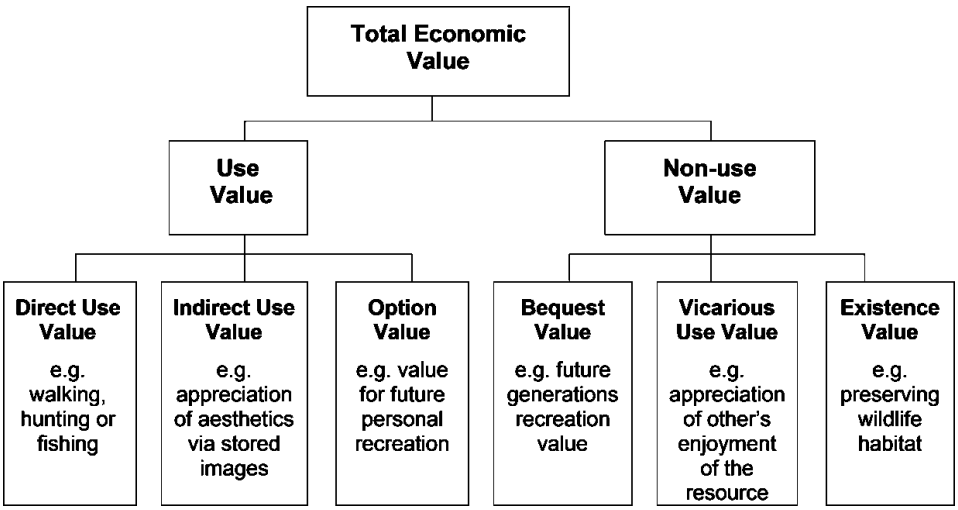


Fig. 17.1. Total economic value.

Source: Raybould (2006) adapted from Bateman and Langford (1997) and Turner (1999).

goods and services. Both use and non-use values can be attributed. Examples of non-use values include deriving utility from knowing that a resource exists even without the intention to visit, knowing that the resource will be available for future generations, and knowing that the resource is available for potential use in the future. These are existence, bequest and option values, respectively (Goodman *et al.*, 1998).

In recent years, there has been increasing recognition that non-market values (i.e., goods and services traditionally not traded through the market such as the value of habitats) play a significant role in determining the health of the coast and affect the people who use the coast for work and play (Pendleton *et al.*, 2007). The non-market beach valuation literature has expanded considerably in recent years in both the academic and grey literature. Non-market values derived from beaches and coastal habitats can include: Utility derived from recreational activities such as enjoying a walk on the beach, swimming in clean water, and being able to catch a fish or watching a beautiful sunset over the ocean; as well as the value of conservation initiatives to current and future generations. The available information shows that the economic importance of these non-market values is substantial. For example, Pendleton and Kildow (2006) estimated that market expenditures by beach goers in California alone are likely to exceed US$3 billion each year, however, they suggest that

non-market economic benefits could substantially exceed US$2 billion each year.

Failure to consider non-market values of natural resources can lead to these systems being undervalued in the decision-making process, which in turn can lead to undesirable outcomes such as reduced public access to the beach through private development or continued development of at-risk coastal locations (New South Wales Government, 1997). This suggests a strong unmet need for the economic information provided by non-market beach valuations. The next section will explore the reasons why non-market beach valuations are typically undertaken, and the methods that are most commonly employed. Some of the challenges in application will then be explored through two case studies.

17.3. Beach Valuation Studies

Beach valuation studies are typically undertaken to assess the costs and benefits associated with a coastal management policy decision. Traditionally, these valuations have tended to focus more on: (1) The management of or investment in coastal protection structures, and other forms of critical infrastructure in the coastal zone; and (2) The value of privately owned coastal lands. These may include construction of protection structures, such as groynes or breakwalls, or the relocation of sand through dredging and nourishment activities undertaken for alternative reasons such as the improvement of coastal navigation. They are also undertaken where there is a clearly identified threat to the resource through a proposed development. Limited information has to date been available on the value of adjacent beach and surf assets. Despite the best intentions of many managers and decision-makers, this information asymmetry may result in coastal assets not being managed to their potential for the community and economy benefit, and worse still, irreversibly bad decisions may result in the permanent degradation of these highly valued assets.

Recognition of the impacts, both direct and cumulative, of development in the coastal zone has resulted in greater consideration given to natural coastal resources in planning decisions. Of particular relevance in recent years is consideration of the magnitude of value streams that are threatened by climate change impacts on coastal resources. The impact of projected climate changes on the coastal zone will vary greatly across regions, depending on a range of natural and anthropogenic influences, and will make the job of management (and valuation) more difficult. Table 17.2 provides an overview of the major direct and indirect effects of climate change on beach

Table 17.2. Key direct and indirect climate change impacts on beaches.

Climate change (driver)	Principal direct physical and ecosystem effects	Potential secondary and indirect impacts	Examples of climate change impacts on the coastal economy
Sea-level rise	Increased inundation of coastal zone Increased coastal erosion Increased risk of flooding and storm damage Saline intrusion into surface and ground water	Disruption of coastal economy, tourism impacts Displacement of residents in impacted areas Damage to coastal infrastructure Health impacts associated with water quality changes	• Altered recreational opportunities along coastal zone; • Loss of recreational foreshore areas comprising walking tracks, picnic sites and related public facilities; • Loss of crown land frontage along private coastal land; • Health impacts associated with water quality changes; • Displacement of residents in impacted areas; and • Disruption of coastal economy, tourism impacts.
Altered wave climate	Increased wave runup Altered erosion and accretion balance	Enhanced erosion, recession	
Storm frequency and intensity changes	Increased wave heights, runup and storm surge Southward shift in cyclone zones	Increased storm damage	
Ocean acidification	Impacts on reef-building corals	Reduced storm protection function, less resilient and functional reefs	

Source: Adapted from Aboudha and Woodroffe (2006).

systems and the coastal economy. Detailed discussion of this issue is beyond the scope of this chapter, except to acknowledge that these are likely to have a range of effects on coastal tourism and recreation, including those described in Table 17.2.

17.3.1. *Types of beach valuation studies*

The types of beach valuation studies undertaken can be linked directly to the ecosystem services that they provide. Wilson *et al.* (2005, p. 7, Table 1) assert that beaches provide the following ecosystem services: disturbance prevention; soil retention; biological control; habitat functions; aesthetic information; recreation; cultural and artistic information; and spiritual and historic information. Of these services, only disturbance prevention (property protection from storm surges and other natural hazards), aesthetic information and recreation have been valued in detail (e.g., Wilson *et al.*, 2005).

Beach valuation studies fall broadly into four categories: tourism; recreation; conservation; and coastal protection. These are described in more detail in Table 17.3. Studies can be undertaken to advance knowledge and understanding against one or more of these issues concurrently, consistent with many of the challenges for coastal planning and management.

Understanding of the total economic value of beaches requires the use of both market and non-market valuation techniques. Non-market valuation techniques can be categorised as either revealed preference measures or stated preference measures (Adamowicz *et al.*, 1999). Revealed preference measures use observations of actual choices made by consumers to develop economic models of choice that can be applied to both market and

Table 17.3. Types of beach valuation studies.

Study motivation	General focus	Most commonly applied method
Tourism	• Understand the importance of beach tourism to a locality or government	Travel Cost Method
Recreation	• Identify the patterns of usage and key beach attributes which are important to beach users	Travel Cost method
	• Identify in the importance of beach attributes, e.g., water quality	Random Utility Method
Conservation	• Determine the value of preserving a natural resource, which would otherwise be developed or modified.	Contingent Valuation Method
Coastal protection	• Identify the value of natural assets at risk, and the value of protective services provided by wide beaches	Hedonic Pricing Method

Table 17.4. Valuation methods commonly applied to non-marketed natural resources.

Method	Based on real behaviour	Surveys required	Able to value non-use benefits	Able to value future changes	Applicable in urban settings
Contingent valuation (CVM)	No	Yes	Yes	Yes	Yes
Choice modelling	No	Yes	Yes	Yes	Yes
Travel cost method — zonal or individual	Yes	Yes	No	No	Challenging
Random Utility travel cost model	Yes	Possibly	No	Yes	Challenging
Hedonic travel cost	Yes	Possibly	No	Yes	Challenging
Hedonic pricing method	Yes	No	No	No	Yes

non-market goods. Stated preference (or contingent valuation/CV) methods essentially ask consumers what they would be willing to pay for a change in supply of an environmental resource. Respondents state that, given a set of circumstances described in a hypothetical market scenario, they would behave in a particular way but the individuals are not actually required to make any behavioural changes. Methods commonly applied in the valuation of non-market resources are outlined in Table 17.4.

Tourism values, which is the recreation values of non-residents, are most frequently assessed via either the travel cost and contingent valuation method, or the use of attribute-based valuation models. These are now described.[1]

17.3.2. *Techniques*

17.3.2.1. *Travel cost method*

Recreational use is one of the most conspicuous and easily valued uses of a resource, as it requires direct contact and also some form of expenditure, either in time or money. It is therefore the most commonly valued component of the value of natural resources. This is undertaken by application of the

[1]For more method-specific details on the contingent valuation method, the travel cost method or choice modelling approaches, refer to Mitchell and Carson (1989), Hanley and Spash (1993), and Greene (1993), respectively.

Travel Cost Method (TCM) in which surveys are used to collect trip expenditure and frequency data and place of origin from site visitors. The method relies on the observation that site visitation decreases as distance and associated travel costs increase, revealing a downward sloping demand curve for the site (Kula, 1994) and is the most widely used method for estimating recreation use values of sites (Smith *et al.*, 1986). The ability to report observed behaviour is a significant strength of the TCM making it preferable to CV methods in many instances (Smith *et al.*, 1986). TCM, however, is not capable of capturing the value of future change in resource provision or non-use values, the latter which may represent the largest component of TEV for resources that have significant cultural and social importance, which is typically true of recreation resources (Lockwood *et al.*, 1992).

17.3.2.2. *Contingent valuation method*

The CV method is a stated preference method in which respondents are asked directly to value a non-market good contingent on the creation of a market or other means of payment for it (Bishop *et al.*, 1995). Since it is a stated preference method, it is capable of measuring both use and non-use values and, as such, it is able to overcome some of the limitations of the revealed preference approaches. This method has been used widely in environmental valuation exercises since the 1970's (Hanemann, 1995), however, it has also attracted criticism from economists such as Diamond and Hausman (1994) who argued that hypothetical questions yield hypothetical answers that bear little resemblance to true construct value. In studies that are particularly relevant to valuation of beach and surf economics, contingent valuation has been used to investigate values of beach nourishment (Judge *et al.*, 1995) and beach maintenance (Smith *et al.*, 1997).[2]

17.3.2.3. *Random utility method*

Increasingly, there has been a focus on the intrinsic attributes of beaches, and the extent to which changes in these attributes influence the recreation or tourism experience, thereby affecting the economic value streams. This has resulted in development of attribute-based valuation methods centred in composite good theory (Lancaster, 1966). For example, an urban forest could be described by the age of the trees, the most common species, the presence of picnic facilities, and the presence of walking tracks (Englin *et al.*,

[2]The reader is referred to the CVM case study for more information on the application of this method.

2005). Choice Modelling (CM), one such method, relies upon the description of a resource by a number of key attributes.

In CM, respondents are presented with a series of choices between bundles of environmental goods at different prices. The selections allow for an inferred calculation of the value of the different attributes (Hajkowicz and Okotai, 2006; Van Bueren and Bennett, 2004). Each choice set will include the status quo, and price can be incorporated as a further attribute of each option. From the choices it is possible to calculate the relative importance of attributes, and the monetary values attributed to each one. This can then be used to inform management options, by estimating the impact of each option on key attributes. The generation of attribute-specific preference information heightens the usefulness of CM for policy support, on the condition that the attributes and the degree of variation in the choice sets accurately describes the environmental change to be valued (Boxall *et al.*, 1996). It also increases the applicability in benefit transfer, where empirical studies are not feasible due to resource constraints. Where many attributes are used, it can require a large number of choice sets, which places a greater conceptual burden on the respondent. The results of the analysis are also sensitive to the attributes and attribute levels employed in the survey, however, there is increasing recognition of the fact that it is very difficult to describe an environmental resource by a small number of easily-understood attributes.

17.3.3. *Some common challenges*

One of the most significant challenges in estimating the value of beach and surf assets lies not in estimating the preferences of the relevant population, but in determining the extent of that population. In the case of revealed preference methods, determining the extent of a population who use beach and surf assets means determining the number of beach visitors. Unless access to a beach is restricted, such as by a single access point, it is difficult to objectively estimate visitor numbers, and hence proxy sources must be used. There are a number of potential sources, including estimates from manual counts taken by lifesavers and lifeguards, aerial or fixed cameras, or counts based on parking records and the average number of people per vehicle.

In the case of non-use values, defining a relevant population can be even more difficult, and remains an issue of some contention. King (1995) argues that for resources of international significance the relevant population for estimating of existence value is the entire global population. Johnson *et al.* (2001) suggest that it is not possible to reasonably expect that existence

values extend to those with no prior knowledge of the resource being valued, and that the underlying preferences will weaken with increasing distance from the resource.

17.4. Case Studies

This section presents two case studies to illustrate some of the conceptual and practical challenges in application of these methods. The complexities of estimating the value of a specific beach recreation activity characterised by a mobile population which is difficult to sample, and the intrinsic challenges in determining the visitation estimate for aggregation purposes, are explored in the first case study. The second case study focuses on the influence of information provision on attitudes and willingness to pay for coastal erosion prevention measures. These provide insight into some important considerations in the quest for improved coastal management outcomes that recognises the non-market value of beach recreation and tourism.

17.4.1. *Case study I — the economic value of recreational surfing*

Surfing and surf tourism are a specialised subset of the recreation and coastal tourism market. Surfing is a major recreational and economic activity involving intimate human interaction with diverse coastal environments and peoples, and is expanding both in intensity in traditional locations, as well as in reach into new environments, often in developing countries. Participation in surfing falls along a spectrum ranging from the 'learn-to-surf' mass tourism market at places such as Bondi Beach and Waikiki, to the highly specialised internationally-mobile big-wave surfing community.

Current global estimates for participation in surfing range from 18–30 million (Lazarow, 2010), however, there is little documented evidence of the value of recreational surfing in locations such as Australia and the United States, where over 2.5 million (Surfing Australia, 2006) and 3.5 million (Leeworthy *et al.*, 2005) participants respectively are reported to surf on a regular basis. Where surfing is an important contributor to the social fabric of an area and to local and regional economies, then the management of surfing capital, (that is, surf breaks, wave quality and frequency, environmental issues and socio-cultural parameters), must be understood and managed. This is particularly true where wave quality may be interrupted by coastal infrastructure (Lazarow, 2010). Not doing so, could result in the degradation of these important socio-economic assets and the communities and economies that are built around them.

Fig. 17.2. Gold Coast surf breaks (Adapted from Google Earth, 2008).

This case reports on selected findings of a study into the value of recreational surfing from the Gold Coast in Australia (see Fig. 17.2). Two aspects of the study are discussed, highlighting a number of the major challenges of delivering accurate estimates of the cumulative recreational use value using

revealed preference methods at the regional level. These are: per-capita estimation of expenditures on recreational surfing for the region, and estimations of the total number of surfers on the Gold Coast for aggregation purposes.

17.4.1.1. *Estimations of expenditure on recreational surfing*

In the first instance, this required the definition of the target population. For the purposes of this study, a surfer was defined as an individual who rides the power of a wave using the forces of nature either without a craft or in or on a non-motorised craft. This broad definition included: bodysurfers; all types of windsurfing such as kiteboarders and windsurfers; tow-in surfers (once up to speed the surfer is propelled by the force of the wave); seated craft riders such as surfskis and waveskis; prone boardriders such as boogey-boarders; and stand-up boardriders such as longboarders, shortboarders and stand-up paddle boarders. The first stage of the study was to estimate the per-capita expenditure on recreational surfing. As this activity is not captured in existing tourism figures, an empirical survey was required. A survey instrument was designed and piloted. Data collection was then undertaken using a mixed-mode survey strategy between February 2006 and May 2008, utilising face-to-face surveys and an internet-based survey instrument. Mixed mode survey strategies, where combinations of techniques are used to collect information, has proven an effective strategy for collecting data from a diverse user group over time and across different locations (Dillman, 2007). Face-to-face surveys were undertaken at approximately 20 locations within the study area. A total of 471 surveys were collected, of which 225 were completed face-to-face and 246 were internet based-surveys. Ethics conditions for this study required that anyone under 18 years of age needed to be interviewed with the consent of or in the presence of a legal guardian, and researchers of similar phenomena need to be aware of the challenges of legally incorporating under age participants into a sample where the activity incorporates a large section of this demographic.

The survey instrument used for this study asked respondents to estimate their total expenditure over a 12-month period on a range of items, including: surfboard; wetsuit; leash and accessories; accommodation; camping; travel; clothing; fuel; and food. The results provide a representative sample of gross per-capita expenditures related to surfing, which provides a measure of the utility respondents derive from the activity. Average annual per capita expenditure on surfing equipment (board; wetsuit; leash and accessories) was AUD$983. For non-capital (termed 'sundry') items, which includes accommodation, travel, camping, fuel and food, an attempt was

made to reflect only expenses that are likely to have been incurred in relation to surfing on the Gold Coast. Categories of expenditure that are most likely to be related to a trip of over 500 km were excluded from the sundries total. In this case expenses related to accommodation, travel and camping were excluded, leaving only fuel and food expenses as sundry items. Clear distinctions between day visitors, short-stay visitors and long-term visitors (e.g., students, those on working holidays) was not possible from the data therefore expenditure for all respondents was treated in the same manner.

The total annual expenditure estimates were scaled by a factor relating to the 'fidelity' of the sample to the Gold Coast beaches. When asked how much of their surfing activity takes place on the Gold Coast, the median response by survey respondents was 80%. While this figure does not necessarily represent a direct relationship between expenditure and the location of the recreational activity, for the purposes of the study it was used as a proxy measure to distinguish surfing activity and expenditure within the study area from activity that took place outside of the study area. Based on these assumptions the average per capita annual expenditure for a surfer on the Gold Coast was estimated to be approximately AUD$1,950.

17.4.1.2. *Estimations of the number of surfers for the region*

The second stage in attempting to determine the economic value of surfing on the Gold Coast is to determine the number of participants. Due to a lack of primary data, three alternate strategies were employed in order to best estimate the number of surfers and the number of surf sessions on the Gold Coast. (These are then used in aggregation estimates presented in Table 17.5.) In the first strategy, data from the survey instruments was used to distinguish between resident and visitor surfers to the Gold Coast

Table 17.5. Participation and expenditure on recreational surfing on the Gold Coast, 2008.

Source	Number of surfers	Total estimated expenditure ($)
Estimation Strategy 1	65,000	126,000,000+
Estimation Strategy 2	75,000	146,000,000+
Estimation Strategy 3	120,000	233,000,000+

+ Annual per capita estimate = $AUD1,942 (from survey described in 17.4.1).

Source: Lazarow (2010).

(63% and 37% of the total sample, respectively). This was then combined with estimates of national level participation in outdoor recreation (12%) (Surfing Australia, 2006) and then extended to the possible resident surfing population (people between the ages of 11–70) for the region based on Australian Bureau of Statistics data. Based on these inputs, it was estimated that there may be a resident surfing population of around 41,000 and approximately 24,000 individual surf visitors on the Gold Coast per annum, making a total surfing population of approximately 65,000.

In the second strategy, Council lifeguard records from municipal beaches was used as the basis for estimating the number of surfers in the study region, a strategy also utilised by Nelsen *et al.* (2007). In 2002, Gold Coast City Council (GCCC) lifeguards estimated that the average number of boardriders per day at beaches where lifeguards operated was 1,535 (Gold Coast City Council, 2002). The lifeguard counts are generally made in the late morning. A lifeguard's experience and understanding of weather conditions and beach use patterns is an important factor in their estimation of use prior to the daily lifeguard services commencing (in summer this can be a few hours) and also what the likely usage will be later in the day. A number of points need to be made about the quality of the lifeguard data. Firstly, surfing conditions are often best early in the day — prior to the lifeguard service commencing. Although many of the lifeguards are likely to be early morning surfers and therefore have a good understanding of beach use, it is possible that early morning surfing activity is under-reported. Chapman and Hanemann (2001), however, found that lifeguard data differed by less than 10% from survey data in a study of beach use in southern California. Secondly, a number of high-use surfing beaches are not patrolled or fall immediately outside of the municipal boundaries and no record of visitation exists. Triangulation of participant preferences for surfing locations suggests that an estimation using lifeguard data alone could underestimate participation by up to 25% once non-patrolled locations are included. Therefore, it is not possible to estimate surfing activity based solely on GCCC lifeguard data.

If a number of assumptions are made, however, it is possible to use GCCC lifeguard data as the basis for estimating the number of surfers on the Gold Coast. The survey instrument employed in this study also asked about the duration of surfing sessions. It was reported that an average surf session lasts for approximately two hours and respondents to the survey surfed two to three times per week on average. Nelsen *et al.* (2007) report a similar annual average surfing activity in their survey of surfers at Trestles Beach in southern California. On any given day, the number of possible surf sessions could vary based on prevailing weather conditions. On some days, there

could be no surf, whereas on other days there could be as many as five or six sessions. Working on the assumption that the 2002 lifeguard data for daily usage is spread across three sessions per day, then the average number of surfers per session would be 512 (1,535/3 and given no increase in absolute numbers since 2002). To estimate individual surfing activity, this value was then divided by 2.5, which was the reported average number of surfing sessions per surfer per week (512/2.5), in order to estimate a unique daily estimate. This was then multiplied by 365 to arrive at an annual estimate of approximately 75,000 surfers on the Gold Coast. Using the proportions identified in the survey described above, approximately 47,000 surfers are estimated to be residents.

Estimations of the total numbers of surfer per year is represented by the following formula:

$$\begin{aligned} &\textit{total number of surfers per year} \\ &\quad = ((\textit{daily estimate}/3\ \textit{sessions})/2.5\ \textit{activity} * 365\ \textit{days}). \end{aligned}$$

The third strategy reports on data collected directly from participants through both the web-based and face-to-face surveys. Survey respondents were asked to estimate how many other surfers they saw each time they went surfing at their most popular surf break.

Respondents' answers varied considerably and it was not possible to verify this data. Estimates that were significantly higher or lower than the average were discounted. The survey reported average daily participation in surfing of 2,466. Based on the same logic that was applied to the second strategy above, this equates to a surfing population of approximately 120,000. This suggests a resident surfing population of approximately 75,000, which appears to be high given the total population for the region is only 600,000.

To determine the total estimated annual expenditure by recreational surfers on the Gold Coast, the number of surfers was multiplied by the expenditure per surfer each year. This is presented in Table 17.5, and reports an annual expenditure range from AUD$126–$233 million.

17.4.1.3. *Discussion*

Surfing has been practised on the Gold Coast for over 50 years and the area is home to a number of world renowned surf breaks (Fig. 17.2). Almost all Gold Coast beaches have been altered through engineering and coastal protection works — and this has in turn impacted surf quality in a number of different ways. However, the large number of local and visitor surfers reported in the

study suggests that the Gold Coast surf breaks are of high quality. With increasing participation and a higher value placed in surf breaks, surfers are likely to be more involved in conflicts with other users and coastal activities. Indeed, this has already been well-documented. This study sought to understand the economic importance of surfing to a particular region, and to provide a sound basis for the incorporation of surf quality issues into coastal planning and management decisions.

The quantification of the economic impacts associated with recreational surfing, however, is complicated by the fact that it generates both market and non-market impacts; and there are inherent difficulties in distinguishing specific activity cost estimates and surveying a diffuse and mobile population. Nelsen *et al.* (2007) reported similar challenges at Trestles Beach; and these are issues that all researchers should take into account as they have the potential to lead to significant variability across samples even where sample populations appear to be relatively homogenous. This case study illustrates a number of the challenges and solutions to the effective deployment of revealed preference tools for regional allocation of value, and is one of a small number of examples that demonstrates:

1. That the economic value of surfing may be sufficient to justify large coastal management expenditures to improve or maintain surfing amenity;
2. That the contribution of surfing to some local economies is sufficiently large that a serious impact on the quality/provision of the surfing resource will have significant consequences for the economy; and that
3. Proposals for the construction of coastal infrastructure should take into account their real and potential impact on surfing recreation resources (Lazarow, 2009; Lazarow *et al.*, 2008; Nelsen *et al.*, 2007; Scarfe, 2008).

17.4.2. *Case study II — Information effects on stated WTP for beach protection*

One of the most challenging aspects of the contingent valuation study design is to communicate the precise benefits, and limitations of the benefits, that are being offered through the hypothetical market scenario. Marketers and psychologists have long recognised the power of communication tools to influence both affective and behavioural responses and concern has been expressed by economists regarding the implications of this for contingent valuation studies (Arrow *et al.*, 1993; Loomis and duVair, 1993). This case describes a study by one of the authors to investigate the effect that different types of text and photographic information, provided to respondents

in a contingent valuation scenario, have on attitudes toward relevant target objects and behaviours and on stated WTP for a non-market good. This experimental approach used stated WTP for avoided loss of beach use and non-use values caused by coastal erosion as the test environment.

It was argued that stated WTP is analogous to the concept of 'behavioural intention' in the type of attitude-behaviour models pioneered by Ajzen and Fishbein (1980) in their theory of reasoned action. Consistent with this approach multi-item attitude measures, corresponding to an adapted version of Eagly and Chaiken's (Eagly and Chaiken, 1998) 'Composite' attitude-behaviour model, were designed based on available literature and focus groups of beach users in the area. These measures related primarily to three related but separate attitude target objects; beach erosion (the problem), beach protection (the proposed solution), and attitude toward paying for beach protection (the target behaviour).

17.4.2.1. *Information treatment design*

Two versions of a text information treatment were developed; a brief form and an extended form with a description of the technical details and explicit benefits of an existing, but limited scope, beach protection scheme in the region (Table 17.6). A control treatment of no text information was also tested.

Photographic treatments were developed through several rounds of expert panel assessments and non-expert ratings. A library of digital images was assembled from collections held by the researcher and several key people involved in coastal research and management in the area. The expert panel categorised each image as depicting either high, medium or low levels of erosion. A selection of these images was then pre-tested with groups of non-expert subjects who were asked to rate the severity of erosion depicted in each photograph on a ten-point scale. Based on this process, two images were selected to represent each of the two test treatments of mild and severe erosion and two images to represent a well-nourished beach after successful beach protection measures. In each photographic information treatment respondents were shown the two photographs of the before condition (either mild or severe erosion) and the two photographs of the after successful beach protection condition. A control treatment of no photographic information was also tested. Examples of the photographs depicting mild, severe and after beach protection conditions are shown in Fig. 17.3. The information treatments and attitude measures were tested through a substantial pilot study and adapted where necessary.

Table 17.6. Text information treatments used in the study.

Information stem common to both treatments:
Gold Coast beaches suffer from erosion resulting from storms, high tides and other natural processes. At times these erosion events have caused extensive damage.

It is not possible to prevent these natural processes but we can minimise the short-term and long-term damage using a variety of beach protection strategies.

Text Information Treatment 1 — Brief:

The Northern Gold Coast Beach Protection Strategy is one example of a program undertaken in recent years.

This program involved beach nourishment through sand pumping, dune re-vegetation and protection, and construction of erosion control points to reduce loss of sand from the beach system. This resulted in wider beaches in the treated areas.

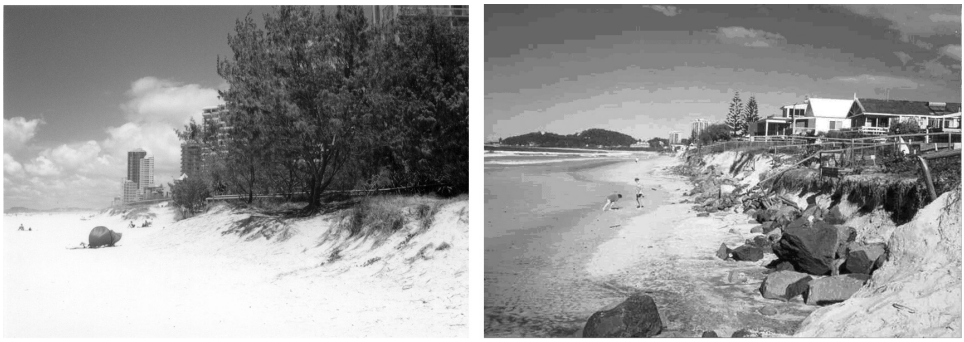
Text Information Treatment 2 — Technical description + Benefits

As for treatment 1, plus:

More than 1.1 million cubic metres of sand was dredged from the Broadwater and deposited on the beaches to widen the beaches in this area by between 30 and 50 metres and increase the volume of sand within the storm buffer.

At Narrow Neck an artificial reef has been constructed using approximately 500 sand-filled synthetic bags, each weighing 300 tonnes.

This program has produced a number of benefits. The wider beaches increase recreation space for beach users and are expected to reduce damage to beaches, dunes, parks, foreshores and private property when storms hit the Gold Coast. Re-vegetated dunes also contribute to storm protection and provide improved habitat for flora and fauna. The artificial reef acts as a barrier to sand migrating north out of the beach system and, in addition, it provides a recreational surfing site and has become a habitat for marine animals and plants.



(a) (b)

Fig. 17.3. Examples of photographs used in the information treatments. (a) Photograph showing mild beach erosion (b) Photograph showing severe beach erosion.

Table 17.7. Experimental design for the study.

		Photographs		
		None	Mild	Severe
Text	None	Treatment 1 ($N = 250$)		
	Brief	Treatment 2 ($N = 250$)	Treatment 4 ($N = 250$)	Treatment 5 ($N = 250$)
	Detailed	Treatment 3 ($N = 250$)	Treatment 6 ($N = 250$)	Treatment 7 ($N = 250$)

17.4.2.2. *Survey design and administration*

The final survey instrument was mailed to a simple random sample of 1,750 owner-occupier residents of the Gold Coast City local government area. This sample frame was deemed most appropriate since the proposed payment vehicle was an annual levy on household rates. A 3×3 experimental design was adopted, as illustrated in Table 17.7, with three levels of photographic information and three levels of text information. Information treatments were randomly assigned to owner-occupiers. For logistical reasons it was not possible to test all nine possible treatments, instead seven treatments were used that enabled the researcher to identify a 'text information effect' through the column in Table 17.7 and a 'visual information effect' through the two rows in Table 17.7.

A modified Total Survey Design method (Dillman, 1999) was employed and resulted in 1,051 usable responses, an overall response rate of 64.8% after accounting for surveys returned as undeliverable. This is a high response rate for a household mail survey and probably reflects the relevance of the issues to the local community at the time.

17.4.2.3. *Results*

The results described in this section focus on the interactions between information provision and issue relevance, attitudes, and reported WTP values. The frequency with which an individual uses a resource was expected, *a priori*, to influence both attitudes toward the resource and WTP for it (Ajzen *et al.*, 1996; Hoehn and Randall, 2002). The relationship between beach use (i.e., the measure of issue relevance) and relevant attitudes and WTP in this study were as predicted. Higher levels of beach use were associated with higher levels of concern about beach erosion (the problem); more positive attitudes towards beach protection measures (the proposed solution); more positive attitudes to paying for beach protection measures (the target behaviour); and, higher WTP values (Table 17.8). All relationships were significant ($p < 0.05$). These results provided support for the construct validity of the instrument used in this study.

Analysis of variance and post-hoc tests showed that there were no significant differences in mean age ($F_{(6,1040)} = 0.686$, $p > 0.05$); household income ($F_{(6,964)} = 0.340$, $p > 0.05$); beach visitation ($F_{(6,1027)} = 0.427$, $p > 0.05$); or self reported previous knowledge of beach erosion issues ($F_{(6,1017)} = 0.670$, $p > 0.05$) among the seven information treatments. This provides reassurance that any differences in attitudes between the information treatments was not caused by sample bias in respect to these variables.

Table 17.8. The relationship between beach use and WTP.

User category	Visits per month avg.	N	Mean WTP ($ per month)	Std. Dev
Non-Users	0	127	1.00	3.35
Low	1–3	276	2.07	3.20
Medium	4–8	251	2.67	3.68
High	9+	263	3.58	4.93
Total		917	2.52	4.00

F value = 14.19; $p < 0.01$.

Table 17.9. Effect of information treatment (see Table 17.7) on attitudes and WTP.

	Treatment (means)							
Attitude target:	1	2	3	4	5	6	7	F value
Beach erosion	1.07	1.11	1.12	1.13	1.11	1.11	1.12	0.24
Beach protection	$0.95_{5,7}$	$0.96_{5,7}$	1.04	1.03	$1.11_{1,2}$	1.07	$1.11_{1,2}$	3.52*
Paying for beach protection	3.64	3.54	3.51	3.54	3.84	3.66	3.69	0.73
WTP $ per month	2.57	2.62	2.22	2.22	2.90	2.31	2.66	0.61
Min N	141	148	148	139	134	149	145	

*$p < 0.05$; Subscript denotes significant differences ($p < 0.05$) between individual treatments.

Results of the analysis of variance, presented in Table 17.9, show that information treatments used in this study had a significant effect [$F_{(6,1043)} = 3.521, p < 0.05$] only on attitudes to beach protection in this experiment. Post hoc tests using Tukey's HSD found significant effects only between the extremes of information provision, i.e., between treatments 1 and 2 compared with treatments 5, 6 and 7.

17.4.2.4. *Discussion*

The analysis of information effects showed that alternative text and visual information treatments had few effects on attitudes toward relevant targets and no effect on WTP for the proposed good in this experiment. The only significant information effects were seen in attitudes toward beach protection and these were only significant when comparing extremes of information provision, i.e., when comparing scenarios containing no photographs and no or brief text descriptions with scenarios that contained images of severe beach erosion events. The analysis provides some evidence to support the hypothesis of a photographic information effect that was independent of text descriptions, but none to support a text effect independent of the photographic treatments, implying that respondents had been more influenced by photographs than text descriptions.

Overall, previous knowledge of beach erosion and protection issues among participants was high and, in this respect, these results are consistent with Eagly and Kulesa's (1987) observations that previous knowledge has a moderating effect on attitude change when people are presented with additional information.

Even when photographic images elicited attitude change in respondents this was not carried through to stated WTP. Again, this is reassuring because

it appears to indicate that respondents were taking the payment question seriously.

This research confirmed findings by other researchers (Boyle, 1989; Brown *et al.*, 1995) that WTP is insensitive to text information in the contingent valuation scenario when previous knowledge of the good is high. Furthermore, it shows that WTP is also largely insensitive to photographic images when previous knowledge of the good is high. Thus, some of the concerns expressed by Loomis and du Vair (1993), Schuman (1996) and the NOAA panel (Arrow *et al.*, 1993) about the potential of photographs to introduce undesirable information effects may be unfounded. This implies that researchers investigating WTP for well-defined non-market recreation goods such as access to local beaches or national parks, where previous knowledge is expected to be high, do not need to conduct exhaustive pretesting of communication devices as recommended by the NOAA (Arrow *et al.*, 1993). However, research to investigate the effect of visual images on attitudes and WTP for goods for which respondents have low levels of prior knowledge is needed to complement the research described here.

17.5. Conclusions

For many, our cultural identity is strongly influenced by our attachment to the coast, the diverse range of people that we interact with, and how we relate to particular places and the people who use them. These are important coastal values. At the local level in particular, managers are required to regularly make decisions that require a good understanding of the condition of coastal resources and how they are used. A logic that justifies a modification of coastal assets based on an incomplete understanding of the value of coastal resources runs a high risk of failure over the longer-term.

Inappropriate investment in beach and surf tourism and recreation asset management can lead to loss of quality in resources, which may result in altered user preferences and substitution of one site over another, or a different type of user. The case studies presented in the chapter demonstrate the significant challenges in survey-based approaches, however, the non-market values for the coastal zone suggest further work in this area is justified and timely.

This chapter has drawn together a number of processes to form the basis of a framework for the classification and valuation of beach and surf tourism and recreation assets under different climate change scenarios. The importance of improving our understanding of both asset value and the degree to which quality or accessibility is likely to be impacted in this dynamic

zone should not be understated. This knowledge will assist managers and decision-makers improve their understanding of coastal resources and how to value them.

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PART V

COST-BENEFIT ANALYSIS, PUBLIC ECONOMICS AND TOURISM

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Chapter 18

TOURISM PROJECTS AND COST-BENEFIT ANALYSIS

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Abstract: In tourism, more than in any other sector, the investor in a big project is neither a company nor a tourism entrepreneur but the public sector. Indeed, many projects belong to the general tourism infrastructure, and the benefits do not only accrue to the paymaster, who may also consider their negative effects. In other words, externalities must be taken into account. This chapter focuses on five topics. First, it focuses on the nature of investment appraisal and explores the difference between micro and macro approaches. Secondly, attention is paid to externalities in tourism. The third section deals with the identification of cost and benefit items or the cost-benefit scheme, where Environmental costs are an important part of the scheme. In the same section, we proceed with the quantification and valuation of cost and benefit items and the calculation of the NPV and IRR. A fourth part of this chapter is focused on CBA versus economic impact analysis. In a last section, we illustrate the application of CBA in the tourism sector with a practical example.

Keywords: Computable general equilibrium approach (CGE); consumer surplus and producer surplus; cost-benefit analysis; cost-benefit scheme; economic impact analysis; environmental costs; external economies; I–O analysis; opportunity costs; willingness to pay.

18.1. Introduction

There cannot be a tourism industry without projects. These projects can take different forms, such as development of attractions, accommodation, entertainment, transport, new resort, congress centre, events, ski infrastructure, etc. They all involve considerable investment. The investor — public or private sector — always has a great financial responsibility, and therefore, a preliminary investment appraisal is a must.

Long experience in the tourism sector has taught us that many investment decisions are very emotional; wrong investment appraisal methods are

applied and/or the right method is used incorrectly. Therefore, special attention to investment appraisal is very important.

Most projects in the tourism sector are the initiative of individuals or companies — tourism or financial — and here the classic investment appraisal methods apply (Vanhove, 2011). However, in tourism, more than in any other sector, the investor (or what we call the 'paymaster') is not a company or a tourism entrepreneur but the public sector. Indeed many projects belong to the general tourism infrastructure, and the benefits do not only accrue to the paymaster, who may not consider the negative effects (This can also be the case for a project in the private sector). In other words, externalities must be taken into account. In such a case, the classic methods of investment appraisal are insufficient. Tourism is clearly an economic sector in which social cost-benefit analysis (CBA) is applicable (Burgan and Mules, 2001).

A project can be appraised from the micro point of view or from the macro point of view. In the first case, only benefits (receipts) and costs for the investor (private or public) come into the picture. In the second case, the benefit and cost items are large in number and of different natures. The total impact of the project for the destination should be taken into account. Application of CBA is the correct method (see also Vanhove, 2011).

For many tourism projects, the discounted cash flow approach is insufficient. Social cost-benefit analysis is more useful. Referring to Prest and Turvey (1967), CBA can be defined as 'a practical way of assessing the desirability of projects, where it is important to take a long view (in the sense of looking at repercussions in the further as well as in the nearer future) and a wide view (in the sense of allowing for side effects of many kinds on many persons, industries, regions etc.) i.e., it implies the enumeration and evaluation of all the relevant costs and benefits'.

In addition to the cash flows, the calculations take account of all the changes in social benefits and social costs that result from the project, reducing them to monetary terms and discounting them to a present value from which the capital cost may be subtracted in order to obtain the net present value. Social CBA is by definition a macro-approach. We set the macroeconomic costs and benefits against each other. Costs are defined in a special way — what level of output would have been reached if the factors of production were utilised in the rest of the economy? — i.e., costs of the project are measured in terms of its opportunity costs. Benefits are the additional benefits to the community that result from the realisation of the project. The fundamental objective of a CBA is to complete the private economic calculations with figures for the economic benefits and costs of a project to

its consumers and the society as a whole. Some authors use the term 'social cost benefit analysis' (SCBA).

CBA is directly related to the externalities. 'External benefits' is a frequently used term in tourism. What do we understand by external benefits, and are there also external costs? (see Vanhove, 2011).

18.2. Externalities and Tourism

'Externalities' is one of the vaguest and most ambiguous terms in economic science. We find a useful description in Boardman *et al.* (2001), who describe an *externality* as an effect that production or consumption has on third parties — people not involved in the production or consumption of a good. It is a by-product of production or consumption for which there is no market. 'No market' is not an essential part of the definition, and is not always correct (see also Bull, 1995).

Other authors use the expression 'external effects' instead of 'externalities' (Sugden and Williams, 1988; Mishan, 1994). They consider the social costs and benefits of a (private or public) project rather than the financial outlays and receipts that would be considered by decision-makers in private (or public) firms. There are several reasons for expecting social costs and benefits to be different from private (public) outlays and receipts. Indeed, externalities or external effects may occur for a wide variety of reasons. Some result because a particular type of technology is used (e.g., deterioration of the landscape caused by transport of electricity). Others result because of interdependencies or synergies between producers and consumers of different groups of producers (e.g., my neighbour is a beekeeper who provides pollination services for the fruit in my orchard). A third group of externalities occurs because of networking (e.g., a convention centre stimulates the turnover of hotels and restaurants). Others arise because of negative effects on competitive projects, companies or events.

It is clear from the above that there are positive and negative externalities. The first group produces benefits, while the latter imposes social costs. Stabler *et al.* (2010) categorise externalities as follows:

- Consumer on consumer;
- Producer on consumer;
- Producer on producer;
- Consumer on producer.

'Externalities' is a generic term that is used, rightly or wrongly, to justify many projects. Furthermore, in many studies several terms are used to cover

externalities — indirect effects, spillover effects, induced effects, stemming effects, pecuniary effects, side effects, etc. Many consultants in the tourism sector abuse externalities to inflate the so-called benefits of a project. Therefore, to avoid such abuses it seems appropriate to start with identification of the types of externalities.

One can make a distinction between three types of negative and three types of positive externalities: 'unpaid' costs and benefits; 'underpaid' costs and benefits; and positive and negative side effects.

18.2.1. *Negative externalities*

The first category of negative externalities is *unpaid costs*. Any project or event is the initiative of a person, firm or public body. Who pays for or finances the project is not important; we call the investor the paymaster. At this level the paymaster is responsible for the investment costs and the running costs of the project, but he also cashes in the direct payments of the consumer (e.g., entrance fees to participate in an event, the use of a ski-lift etc.). We call this the 'project' or 'micro-' level.

However, in most cases the paymaster does not pay for all the costs of the project or event. Many projects provoke a lot of economic, social and/or environmental costs for which the investor does not pay. There is no free lunch. A third party will pay the bill or suffer inconvenience (Vanhove, 2003; Stabler *et al.*, 2010).

Typical examples of unpaid costs in the tourism sector include water pollution, noise, traffic congestion, destruction of landscape, etc.

In the case of *underpaid costs*, some costs are taken into account, but not at the full price. A typical example is the expropriation of land for a big event at a price below the market value. This brings us to the notion of opportunity costs. Cost should be measured at opportunity costs.

'Opportunity costs' is another economic term that leads to a lot of interpretation problems and misunderstanding. Any tourism project requires resources that could be used to produce other goods or services instead. Tourism projects such as festivals, sporting events, theme parks, winter sports infrastructure, for example, require labour, land, capital and/or equipment. The resources used for these purposes cannot be used to produce other goods or services. Almost all public or private projects incur opportunity costs. Conceptually, these costs equal the value of the goods and services that would have been produced had the resources used in carrying them out been used instead in the best alternative way (Boardman *et al.*, 2001). In other words, production elsewhere is foregone.

As stated above, cost items should be measured at the opportunity costs. In efficient markets, opportunity costs are equal to market prices. However, markets are not always efficient. Let us suppose that the Olympic Games is to take place in a region or country with very high unemployment. In the construction phase of the necessary infrastructure (e.g., new stadia, new sport infrastructure) and in the running of the games, hundreds or thousands of unemployed find jobs. All of them are paid a normal salary. These salaries are included in the investment and running costs at the micro-level. However, costs should be measured at opportunity costs. What are the opportunity costs of an unemployed person? His or her best alternative is probably unemployment. The corresponding contribution of unemployed people to the national product is zero (unemployment benefit is a pure transfer). There is no production (goods or services) foregone. This type of underpayment of costs is quite often a very important item in project appraisal from a macro point of view. This might be even more the case in tourism than in an industrial region. Many tourism regions have high unemployment.

A third group of negative externalities relates to *side effects* on competitive projects or events. We all know of situations where a new tourism project is competing with an existing production unit in the same region — for example a new congress centre is built in a place close to a city which already has good congress facilities. In such circumstances, a reduction in the turnover of the existing product can be expected. The corresponding reduction of value added should be considered as a cost item for the new event or congress centre.

18.2.2. *Positive externalities*

Again, *unpaid benefits* are the first category of positive externalities. Not all benefits of a project or an event accrue to the investor. In tourism there are many possible unpaid benefits, such as promotion effect, international exposure, increase of property value, etc.

However, in other cases the consumer does not always pay the full price of a product or service, or we are confronted with *underpaid benefits*. If the consumer pays less than the market price for a service (e.g., a performance) — benefits are measured in terms of market prices — it seems obvious that there is an underpayment of benefits.

The situation becomes more complicated when we consider the consumers' willingness to pay. This brings us to the notion of consumer surplus. The latter is one of the foundations of cost-benefit analysis (Pearce, 1983; Boardman *et al.*, 2001).

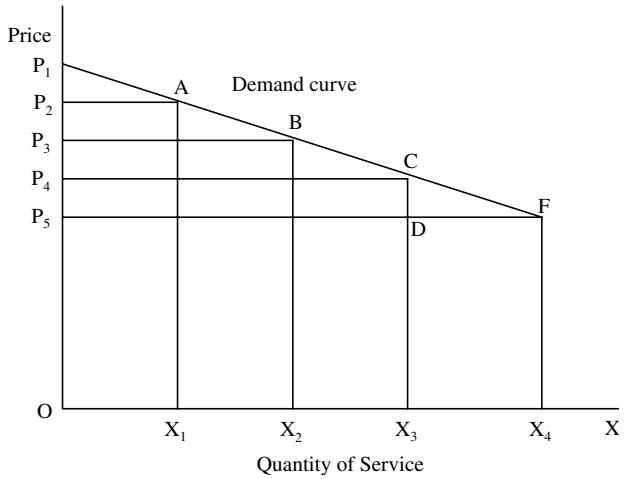

Fig. 18.1. Consumer surplus.

A demand curve indicates the quantities of a good or service that individuals purchase at various prices. In Fig. 18.1, a downward-sloped demand curve is illustrated as line P_1F. The key is the link between demand schedules and the willingness to pay (WTP). Figure 18.1 illustrates that there is at least one consumer who is willing to pay a price of P_1 for one unit of service X. Similarly, there is at least one person who would pay a price of P_2 for the second unit of X, and there is someone who would pay P_3 for the third unit of X, and so forth. The message from this exercise is that the area under the demand curve, or the sum of all the unit-wide rectangles, closely approximates the WTP for X by all members of society. In other words, the triangle P_1P_4C and the rectangle P_4CX_3O in Fig. 18.1 approximate society's WTP for a given amount of X, in this case the amount X_3. Thus the sum of the triangle and the rectangular approximates the total gross benefits society would receive from consuming X_3 units of service X. The consumers pay P_4 to the producers of the tourism service. In this case, the net benefits from consuming X_3 units equal the area below the demand curve but above the price line P_4C. This triangle P_1P_4C is called the consumer surplus. When demand curves are known, consumer surplus is one of the basic concepts in CBA to value impacts. The reason why consumer surplus is so important to CBA is that changes in consumer surplus can be used as reasonable approximations of society's WTP policy changes (Boardman *et al.*, 2001).

To show how the concept of consumer surplus can be used in CBA, consider a project that results in a price change. We take a price reduction in Fig. 18.1 from P_4 to P_5. This would result in a benefit to consumers equal

to the area of the trapezoid P_4CFP_5. It follows both because consumers gain from paying a lower price for the X_3 units they previously purchased, and because they gain from the consumption of $X_3 - X_4$ additional units.

If there is an increase in the price, there is a loss of consumer surplus. However, if the price increases results from an imposed tax, there is no loss but a simple transfer — money is transferred from consumers to the government. From the perspective of society as a whole, its net impact is zero.

Changes in consumers' surplus are measures of the effects on the welfare of individuals of changes in the prices of goods that they consume. Individuals may be affected in a very similar way if there are changes in the costs of 'factor prices' (such as labour, the use of capital and land) that they supply.

Such changes are said to lead to changes in producers' surplus (Sugden and Williams, 1988). Producer surplus is the supply-side equivalent to consumer surplus. To define producer surplus, we refer to Fig. 18.2. At a price of P_1, the producers receive revenues equal to the area represented by the rectangular area OP_1BX_1. The difference between this rectangular area and the area of the rectangle under the supply curve S, that is the area AP_1B, is called producer surplus. Indeed, some producers are willing to produce at a price lower than P_1.

Thus, producer surplus equals the revenues from selling X_1 less than the variable costs required to produce X_1 — or the sum of total producer surplus and opportunity costs (that is areas $AP_1B + OABX_1$) corresponds to total revenues. According to Burgan and Mules (2001), producer surplus

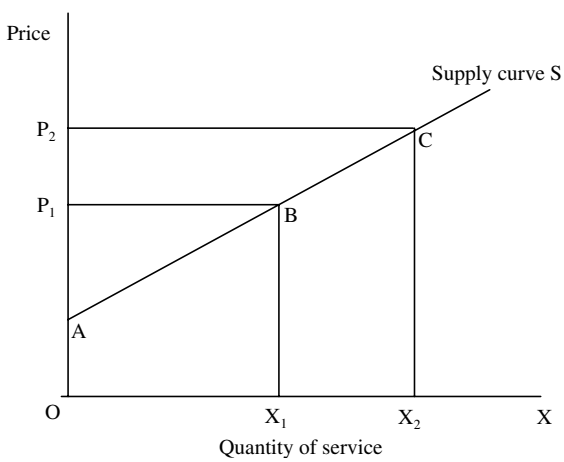

Fig. 18.2. Producer surplus.

represents the return to producers for units of production up and including the last unit above and beyond the cost of resources involved in the production. The assumption is that resources are used at their opportunity costs.

Price changes that are due to a project result in impacts on producers that can be valued in terms of changes in producer surplus. An increase in price to P_2 increases producer surplus (or economic profits) by P_1P_2CB (Boardman *et al.*, 2001).

Most tourism projects or events have a positive impact on the turnover of many other production units such as hotels, restaurants, pubs, taxis, souvenir shops, etc., known as the *side effects* on complementary activities. It is not the turnover that counts but the additional value added created. Quite often the additional value added in complementary activities is many times greater than the value added at the micro-level.

Those complementary activities have in their turn an impact on intermediate deliveries. We call them indirect effects (indirect income).

Care must be taken with secondary effects due to spending of earned direct and indirect income, or induced effects (induced income). Should we take into account the portion of incomes resulting from an event spent by the recipients? This brings us to the famous multiplier effects, more particular the induced effects. We have to be careful with induced effects.

18.3. Foundations of CBA and the Four Steps

CBA is as a practical way of assessing the desirability of projects, where it is important to take a long view and a wide view — i.e., it implies the enumeration and evaluation of all relevant costs and benefits. In social CBA, we try to consider all of the costs and benefits to society as a whole. That is the reason why some people refer to CBA as social cost-benefit analysis. For Boardman *et al.* (2001), cost-benefit analysis 'is a policy assessment method that quantifies in monetary terms the value of all policy consequences to all members of society. The net social benefits measure the value of the policy. Social benefits minus social costs equal net social benefits'. The broad purpose of CBA is to help in social decision-making.

The foundations of social CBA are the Pareto efficiency, opportunity costs, willingness to pay (see consumer surplus) and producer surplus. An allocation is Pareto-efficient if no alternative allocation can make at least one person better off without making anyone else worse off. An allocation is inefficient, therefore, if an alternative allocation can be found that would make at least one person better off without making anyone else worse off.

Boardman *et al.* state that 'one would have to be malevolent not to want to achieve Pareto efficiency — why forgo gains to persons that would not inflict losses on others?'. These writers make the link between positive net benefits and Pareto efficiency. If a policy has positive net benefits, then it is possible to find a set of transfers, or side payments that makes at least one person better off without making anyone else worse off. A full understanding of this link requires some knowledge of how to measure costs and benefits in CBA. It is necessary to consider willingness to pay as the method for valuing the outputs of the policy, and opportunity costs as the method for valuing the resources required to implement the policy. However? The application of SCBA does not necessarily result in a Paretian improvement. According to Tisdell and Hartley (2008), gainers do not necessarily compensate the losers, so some may be worse off than before the change. We refer to the items of the scheme in Table 18.1. In this case the income distribution issue arises. That is an aspect we disregard in practical CBA applications. Income distribution is a political matter.

The costs are measured in terms of its opportunity costs. Benefits are the additional benefits to the community that would result from the realisation of the project. Costs and benefits of a project are the time streams of consumption foregone and provided.

In a CBA, there are four important steps:

1. Identification of the cost and benefit items;
2. Quantification of the cost and benefit items;
3. Valuation of the cost and benefit items;
4. Calculation of net present value (NPV) and/or internal rate of return (IRR).

Table 18.1. Cost-benefit scheme.

Level	Costs	Benefits
Project or paymaster's	Investment costs Running costs	Direct receipts
'Unpaid' level	Unpaid use of factors of production	Unpaid satisfaction of needs
'Underpayment' level	Underpayment of factors of production	Underpayment of products and services
Side effects	Side effects on competitors	Side effects on complementary sectors, firms or projects

18.3.1. *Identification of cost and benefit items*

The identification of cost and benefit items is directly related to the externalities dealt with earlier in this chapter. Table 18.1 might be helpful in identifying the cost and benefit items from the viewpoint of society as a whole. This approach was applied for the first time in 1971 for the study 'The micro and macro profitability of a congress centre in Bruges' (WES, 1971). Four levels of costs and benefits can be distinguished. The first level is the micro-level, also called the project or paymaster's level — in other words, who pays for the project. The other three levels are related to the externalities dealt with earlier in this chapter.

This is not the only possible cost-benefit scheme. Another possible scheme is described by Scherly and Breiter (2002) and Stabler *et al.* (2010).

18.3.2. *Quantification of cost and benefit items*

The next step is to express the items of Table 18.1 in quantitative terms — arrivals, nights, metres, cubic metres, volumes, etc. We can be confronted with two possibilities; either the cost and benefit items are measurable, which is the normal situation, or the items cannot be expressed in a quantitative unit; in that case they are called intangible items. A typical intangible cost item is a destruction of natural beauty of a landscape.

With respect to the quantification of cost and benefit items, a number of principles should be respected. The first is quite evident — it is important to avoid double counting. The cost-benefit scheme can be very helpful in avoiding one or more cost or benefit items being counted twice, but even so double counting is not impossible. The development of a camping area cannot lead to higher land value of the area and to additional value added created in the accommodation firms on the site; it should be either higher land value or additional value added.

More important is the application of the 'with and without' principle rather than the 'before and after' principle. The first principle compares the tourism development of the project with the situation that would occur without the project — in other words, it is an evaluation in terms of the difference it makes. The 'before and after' principle attributes to a project effects that are not caused by it, but which occur because of the passage of time or for other irrelevant reasons (e.g., what were the costs before the new facility was implemented, and what will they be afterwards?).

An example makes it clear. The construction of a congress centre in a city will boost the number of nights stayed. It would be incorrect to attribute all additional nights to the congress centre; the number of nights would still

probably have increased without the congress centre. The 'with and without' leads in this case to a lower benefit than the 'before and after'. However, there are cases where we have the opposite situation (e.g., a declining trend of nights in the city where the congress centre is built).

It is furthermore important to emphasise that, in Table 18.1, technological spillovers should be taken into account insofar as they alter the physical production possibilities of other producers or the satisfaction that consumers can get from given resources. On the other hand, pecuniary spillovers should not be taken into account if the sole effect is via prices of products or factors. There are cases involving transfers of resources from one group in the economy to another.

With respect to events crowding-out effects, expenditure switching and retained expenditure should be considered in the quantification of the different items (Ryan, 1998; Ryan and Locker, 2001).

18.3.3. *Valuation of cost and benefit items*

A third step in CBA is the valuation of the quantified items; the latter must be expressed in monetary units for each period of time over the economic life of the project.

In general, market prices are considered to be a proxy of the social valuations; market prices of final outputs indicate the 'proper' valuation of benefits, and market prices of resources the 'proper' valuation of costs. 'The prices placed on goods and services through the exchange process afford a means of measuring the value attached to those goods and services by those who participate in the exchange, and provide a basis for evaluating project effects in monetary terms' (US Government, Federal Inter-Agency River Basin Committee, Subcommittee on Benefits and Costs, 1950 — *The Green Book*).

In evaluating costs, attention should always be fixed on estimating the social opportunity cost of the resources used in the project; in other words, the social value of goods and services that would have been produced if the resources had been employed in the next best alternative public or private use. For most goods and services bought by public authorities from commercial firms, as well as for labour hired in competition with private sector, the market price is an adequate measure of social opportunity cost.

In practice, there is not always a market price. In these cases, a shadow price or accounting price can be used (Sassone and Schaffer, 1978; Mishan, 1994; Bull, 1995; Boardman *et al.*, 2001). This is the price an economist attributes to a good or a factor on the argument that it is more appropriate than the existing price, if any. So the price of a water purification plant down

the river can be the shadow price for the waste water from a big tourism project discharged into the river, and for which the tourism project is not charged.

Many writers reserve the term 'shadow price' for outputs that are not sold in a direct market. However, shadow prices may also be used to correct the underestimation or overestimation of the value of a particular resource.

Other price standards in the absence of market prices include:

- The alternative production cost;
- Individuals' willingness to pay;
- Surrogate prices based on the behaviour of economic agents;
- The prices of similar products elsewhere.

There are still items that defy measurement such as the improvement of a landscape by a park (in the opposite case, the value of destruction of a landscape) or increase or decrease in the rate of juvenile delinquency due to tourism development.

Sometimes there is opposition to the application of CBA because of the existence of intangible and/or incommensurable cost or benefit items. This is not a sufficient argument. We should recognise that some items cannot be expressed in monetary terms, without saying that those items should be neglected. Therefore, we recommend adding (beside the table of quantifiable items) a qualitative table with costs and benefits that are intangible and/or incommensurable. We call this an itemisation of the incommensurable physical benefits and costs associated with the project; it is suggested that a short description of the expected intangible effects should be added. This itemisation can be helpful for the decision-makers of the project.

Very often the question is raised as to what should be done in case of price inflation and relative price changes. As a rule, we recommend the application of constant prices. For convenience, this will usually be the price level in the first year. Adjustments need not be made for inflation or general price increases. Uniform change in all prices can be ignored, and have no influence on the value of NPV or IRR. Adjustments need to be made for relative price changes. If some prices are likely to change relative to others, this should be reflected in CBA. The rule of constant price also applies to the discount rate. The market interest rate is very often a combination of real interest and inflation rate.

Stabler *et al.* (2010) refer to a number of methods which have been developed to value environmental attributes and which could be applied to

the valuation of non-priced tourism resources:

- Contingent valuation;
- Choice modelling;
- Hedonic pricing;
- Travel costs;
- Combination of these.

Most of these methods relate to willingness to pay. The 'travel cost' method is quite often used. The latter is based on the assumption that the costs of visiting a tourist area can be used as a proxy of visitors' willingness to pay.

A special case is when there are adjustments to the market prices relative to taxes and subsidies. Indirect taxes are a cost to those who pay them, but it does not necessarily reflect economic costs to the country or the region as a whole in the sense that an increase of tax does not mean that more economic resources are required. From the viewpoint of the economy, taxes and subsidies must be viewed as transfer payments which normally should be excluded in evaluating the costs of a project. Thus an import tax on beef consumed in the tourism sector should not be regarded as a cost to the economy, since it merely represents a transfer from the hotelkeeper to the government. Conversely, a grant for vegetable growing is clearly a benefit to the farmer but is not a benefit to the economy.

On the benefit side, an indirect tax on final output should be deducted as a cost by the producer paying it, but it should not be deducted from the valuation of the benefits for social cost-benefit analysis. In practice, market prices (including VAT) are the rule to valuate benefits based on the principle of 'willingness to pay'. Indirect taxes are part of the price people are willing to pay. In any case, indirect taxes paid by foreigners are a net benefit for the country; in tourism, the share of inbound tourism can be very important. All purchases must be cleared of VAT and other sales taxes. A tax paid to the government is a tax paid to society. This can lead to a real difference in profitability between a social cost-benefit application and a pure financial assessment.

This rule cannot be applied in all circumstances. A higher tax for pure budgetary reasons has nothing to do with willingness to pay. Thus a higher tax on fuel leads to higher transport cost savings in a CBA of a new highway project, but in this case the tax has a pure transfer effect and does not contribute to any increase of welfare.

18.3.4. *Calculation of NPV and IRR*

Now we have all the elements to calculate the net present value (NPV) or internal rate of return (IRR) from tourism projects. Table 18.1 can be transformed into the form of a calculation table (see Vanhove, 2011). For each cost and benefit item, a column is provided (there can be more than one column for each generic cost and benefit item).

A crucial point in the NPV calculation is the choice of the discount rate (see also Stabler *et al.*, 2010). The role of the discount rate is twofold. First, it makes costs and benefits accruing at different points of time commensurable. Secondly, in considering the net benefits achieved by an investment project, attention has to be paid to its costs, which means the opportunity foregone. The role of the discount rate is to help to ensure that these opportunities foregone, which are themselves time streams of costs and benefits, are properly taken into account. The opportunities foregone can be in the public sector (consumption or investment) or the private sector (consumption or investment). In other words, the discounting is necessary to allow for the time factor and the cost of capital.

18.4. Cost-Benefit Analysis Versus Economic Impact Analyses

Economic impact analyses such as tourism satellite accounting (TSA) method, National Accounts method, and I–O (input–output) method aim in the first place at estimating the income and employment generation of an event, a project, additional tourism exports, etc. All these methods neglect the cost side, the positive and negative externalities and side effects. This is less the case with the computable general equilibrium (CGE) approach.

Dwyer and Forsyth (2006) formulate the limitations of the I–O approach as follows (the same applies to other methods as well):

- Resource constraints do not exist; in other words additional resources are assumed to be unemployed with no constraints on their availability.
- Prices and costs remain fixed as economic activity expands. This means that I–O analysis excludes changes in factor and product prices which may affect employment and output of other sectors.
- There are constant ratios between inputs and output, between value added and output and there is the assumption of constant labour productivity.
- Spending on new tourism products (e.g., an event) by the local population does not lead to a diversion of spending away from other goods and services.

An essential difference between CBA and CGE is the following. CBA is primarily a partial equilibrium technique. It focuses on direct impacts of a project. CGE techniques are general equilibrium. Furthermore CBA is very detailed. Unpaid and underpaid costs and benefits and side effects on complementary and competitive firms are taken into account. CGE techniques are general equilibrium but less detailed (Dwyer and Forsyth, 2006). A CBA takes into account several costs and benefits which would not be considered in a CGE model. Dwyer and Forsyth refer to non-priced effects (e.g., noise of an event or traffic congestion) which do not get included in the markets which are modelled.

Another important difference is related to the time period covered. A tourism infrastructure project has an economic function for several decades. That is the reason why in most cases CBA takes a period of 30 years into consideration. Indeed benefits accrue during a very long period. Of course this is not the case for events. In the case of an event costs and benefits take place in the same year. This probably explains why the comparison between CBA and economic impact analyses (I–O, CGE), quite often relates to a big event.

CBA and CGE are complementary techniques. One technique picks up items that are not taken into account by the other. One of Dwyer and Forsyth's conclusions is very relevant. 'The two techniques focus on different aspects of the evaluation problem. CBA is the established technique for assessing the benefits and costs of a project, and as such, it is appropriate for an event. CGE models are the preferred technique for assessing the impact of an event on economic activity, and its various dimensions such as GSP/GDP and employment'. Impact analysis and CBA become closer in case of unemployed or underused factors of production. The relative value of different methods is determined by the needs of the user and sophistication of the results required (Burgan and Mules, 2001).

18.5. Case: 2005 Australian Formula 1 Grand Prix

The Victorian Auditor General's Office commissioned both a CGE study a cost-benefit study (CBA) to estimate the level of net benefits to Victorians (a region in Australia). From the previous section it must be clear that CBA and CGE are quite different in their purpose, method and application. In Table 18.2, we put the benefit and costs items into our theoretical scheme (see Table 18.1.).

Visitor and sponsor payments to Australian Grand Prix Corporation (AGPC) speak for themselves. The study makes a difference between visitor

Table 18.2. Cost-benefit scheme for the Australian Formula 1 Grand Prix, 2005.

Level	Costs and Benefits	A$ min
	Costs	
Micro level	GP construction and operation costs	68.1
	GP related government costs	0.5
Unpaid level	Loss of park uses and amenity	0.4
	Transport congestion	0.5
	Noise costs	0.2
Underpayment level	pm	
Side effects	pm	
Total costs		69.8
	Benefits	
Micro level	Visitor payments to AGPC	41.5
	Sponsor payments to AGPC	10.9
Unpaid level	pm	
Underpayment level	Consumer surplus	3.4
	Attendance free GP related events	1.9
Side effects	Business surplus accruing to businesses	3.7
	Labour surplus	1.7
Total benefits		63.1
Net benefits		(6.7)

Source: Victorian Auditor-General, *State Investment in Major Events* (Harman, 2007).

origins: Melbourne, other Victoria, interstate and international (see infra limitations in space). The other benefit items are less clear but justified. The authors make a distinction between two types of consumer surplus. The first consumer surplus relates to the ticket price. The gross consumer benefit of a good or service is valued at the maximum amount that consumers are willing to pay for it (see Department of Finance, 2006). Ticket prices may not reflect the maximum that many consumers may be willing to pay for the GP. The practice of ticket scalping is an indication that people are willing to pay more than the official ticket price. In other words consumer surplus exist; there is a difference between what consumers are willing to pay and what they actually pay.

The second group of consumer surplus concerns attending of local people Grand Prix-related events such as the F1 parade and Federation Square activities. These events are free of charge. This consumer surplus was estimated at A$10 per person attending related events.

There are also benefits to Victorian businesses and labour. The basic assumptions are: (a) there are sufficient unemployed or part-time workers

available to meet the additional demand and (b) there is spare capacity in capital and land in businesses in the region to meet additional demand. Businesses such as hotels are assumed to be able to generate a surplus because the potential for spare capacity and unemployed or underemployed workers who can be employed on a casual basis to meet the extra demand. Business and labour surplus resulting from increase in tourism in the region of New South Wales is based on a former CGE study of Dwyer *et al.* (2005). According to this study 16.9% of additional tourist expenditure accrues to business in the region; the corresponding figure for labour surplus amount to 41.5%.

Cost items need less explanation. Capital expenditure is included in a CBA, but depreciation is not as this would involve double counting. The AGPC construction and operating costs relate to:

- Event management and staging (e.g., payments to the department of infrastructure, loss of income of tenants of Albert Park);
- Recurrent engineering such as assembling, dismantling, etc.;
- Marketing/promotion and catering;
- Administration.

The other government costs concern expenses to agencies (e.g., police, State Emergency Service, St John Ambulance, etc.) reporting net expenses in excess of recoverable amounts to AGPC.

Due to the GP, visitors (visits for sporting and informal recreational use) cannot use Albert Park Reserve during several weeks. The estimate of lost uses is based on the travel cost method (Lansdell and Gangadharan, 2003). This method is used to infer the surplus value that each user derived from the use of the park. The underlying idea is that those who travel a long way have high travel costs and, hence, very little surplus value from using the park. Those who have low travel costs have higher surplus value. In the GP CBA study, the Lansdell and Gangadharan figure of A$13.30 for lost uses and an amount of half this for reduced amenities.

Transport congestion concern (traffic diversion and traffic congestion. In the GP week, about 15,000 vehicles are diverted out of the park each day for seven days. Each vehicle takes an additional 3 minutes and the travel time cost was estimated at A$22 per vehicle hour.

Noise costs are inherent to a GP. The question is how many people reside within a particular dB line. Some are severely affected and others are less affected. The cost of noise disamenity is estimated from the negative effects on property values.

The application of CBA to the 2005 Australian Formula 1 Grand Prix results in a negative net benefit of A$6.7 million. In Table 18.2, we put the benefit and costs items into our theoretical scheme.

18.6. Special Problems with Respect to CBA

In the application of CBA, we can be faced with a number of special problems. The first is risk and uncertainty. Here we take the two terms as synonyms, although this is not completely correct. Risk is inherent in all investment projects, but for some projects the uncertainty might be bigger. In the tourism sector there are many projects with uncertain factors. How do we tackle risk and uncertainty? In the literature, several procedures are proposed. Two have little value: risk premium to the discount rate and shortening of project life. These procedures have little value because nobody can tell us what risk premium should be taken, or by how many years a project should be shortened.

We prefer to recognise that there are risks, and thus recommend that two or three variants be taken for one or more cost or benefit items. The consequence of this approach is a multitude of NPVs or IRRs. However, it cannot be the intention to present 50, 100 or 200 results. Therefore, we propose to stick to three combinations:

1. The most pessimistic approach. In this case, the highest value is taken for each cost item and the lowest for each benefit item. If the NPV > 0, we get a positive sign, in favour of the project.
2. The most-optimistic approach. This uses a combination of all the lowest cost and all the highest benefit alternatives. An NPV < 0 is a negative indication, against the project.
3. The most likely result. Here, NPV or IRR is based on a combination of all the most likely estimations of cost and benefit items.

This brings us to the sensitivity analysis (Boardman *et al.*, 2001), with worst-and-best case analysis, the most plausible estimates and partial sensitivity. The latter is most appropriately applied to what the analyst believes to be the most important and uncertain assumptions. It can be used to find the values of numerical assumptions at which net benefits equal zero. The partial sensitivity analysis can also be applied with respect to the right choice of the discount rate.

Another approach of risk analysis is 'component analysis', based on the composition of the cost components as well as the composition of the benefit components of the NPV. Here it must be reassuring for an investor if one

cost component represents 60% of the NPV of the costs and there is not much uncertainty about the estimation of that item; similarly if a benefit component has a high share in the NPV of benefits and shows little risks.

Another problem is the limitations in space and time. Any project is influenced by the definition of space and time. The NPV or IRR of a project can be calculated for a resort, destination, region, county or country. The result will most probably be different with respect to the space (or area) level. Two examples make this clear. A major event, financed by the destination, can lead to important side effects which do not accrue to the inhabitants of the destination and as such cannot be considered as a benefit for the destination. However, from the national point of view these benefits should be taken into account. Another relevant example is the building of a congress centre in a city subsidised by the national government. For the city the grant means a reduction of the investment and/or operation costs, but from the national point of view the subsidy should be disregarded.

Limitations in time are of a different nature. The question arises as to how long a period we should take into account in order to get a reasonable estimate of the total effect of the investment. The answer depends on many elements. The first factor is the height of the social discount rate. A high discount rate leads to a negligible NPV of a benefit accruing in 30 years or more. Other important elements include physical length of life, technological changes, emergence of competing products or projects, and shifts in demand.

18.7. Final Remarks

A special problem is the comparability of the profitability of a project with other projects. In most cases this is a theoretical problem; in practice, there is not a similar project. A comparison of a project in one field with one in another field does not make much sense. A choice between a tourism project and an education project cannot be based on the difference in IRR; the choice is purely a political decision. It is very important to notice that a CBA facilitate a political decision.

Sometimes it is alleged that CBA is perceived as technocratic with too much emphasis on economic efficiency. It is argued that CBA is unable to embody the socio-cultural, political factors of human existence and the complexities of ecological systems (Stabler *et al.*, 2010). This is not fully right. Economists should focus on efficiency; public decision-makers can add social considerations. Income distribution is such a social issue. Most economists cannot take income distribution into account. The latter belongs to the political level. Sustainability is not ignored in CBA. Table 18.1 proves this. When

social and ecological factors cannot be quantified or expressed in monetary terms, a qualitative table is a necessary complement.

We support the thesis of Stabler *et al.* (2010) '... the method is conceptually simple, wide ranging in its scope, well founded in economic theory, where the projected outcomes are expressed objectively in monetary terms...'. Within the tourism field, CBA is more and more applied. We were already confronted with CBA in the beginning of the 1970s. I applied the CBA for a congress centre in Bruges (WES, 1971) and I refer to the CBA application of the French SCETO group on the famous and successful Nusa Dua tourism project in Bali.

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About the Author

Norbert Vanhove (n.vanhove@telenet.be) lectures on the Economics of Tourism at the Kathulieke Universiteit of Leuven (KULeuven). Born in Tarhout in 1935, he studied economics at the University of Ghent and obtained his doctorate in economics (*cum laudae*) from Erasmus University, Rotterdam.

In the period 1979–2000, he was the Director General of the Regional Development Authority of West Flanders and in Westvlaans Ekonomisch Studiebureau (WES). WES was and still is the leader of market tourism research in Belgium. Apart from his present appointment at the Catholic University of Leuven, he has lectured at the College of Europe on European regional policy, on the economics of tourism and its management at the University of Antwerp as well as on the economics of tourism at the University of Venice and at the University of the Balearic Islands. He is an active member of several international tourist associations as detailed below:

- Tourist Research Centre (TRC — Association of Tourist Research Institutes): Secretary-General since 1965.
- AIEST, since 1990 Committee member and 1994–2010 Vice-President.
- Founder- Fellow, International Academy for the Study of Tourism.
- IATE (International Association for Tourism Economics).

His most important publications are:

- *The Economics of Tourism Destinations*, 2nd edn., Elsevier Insights, 2011.
- *Regional Policy: A European Approach*, 3rd revised edition. Ashgate, Aldershot, 1999. (The first edition written together with Prof. L Klaassen, 1980, was translated into Greek and Chinese).
- *Het Belgisch Kusttoerisme — Vandaag en Morgen.* Pro Civitate Award 1972, Recht en Local Economie, Brussels, 1974, (translated into French: *Le tourisme sur le littoral belge. Aujourd'hui et demain*, Brussels, 1974).
- *Het vakantiepatroon en de toeristische bestedingen van de Belgische bevolking.* WES, Brugge, 1969 (translated into French: *Structure des vacances et dépenses touristiques de la population belge*).

He is particularly interested in the following tourism research topics: economic impact, project evaluation, competition analysis, strategic planning

and marketing. Vanhove is member of the Editorial Advisory Board of *Tourism Review*. He is member of the board of directors of WES and Treasurer of the College of Europe. Norbert Vanhove has had several honours bestowed on him. For example, in 2005, he was appointed a Grand Officer in the Order of King Leopold II.

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Chapter 19

PUBLIC ECONOMICS AND THE ASSESSMENT OF TOURISM DEVELOPMENTS AND POLICIES

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Abstract: Public economics covers the welfare economics of social (as opposed to private) interests and aspects of public finance. This chapter considers the application of two methods of social economic evaluation of tourist developments, namely, social cost-benefit analysis and economic impact analysis. The role of social cost-benefit analysis in the assessment of tourism is illustrated by its application to the evaluation of inbound tourism. This is followed by a discussion of taxes on tourism and subsidies to promote it. The principle focus is on hotel room taxes. The analysis of taxes on tourism involves both public finance and welfare economics issues. The scope for and desirability of applying the user-pays principle to tourism is then examined.

Keywords: Economic impact analysis; room taxes; social cost-benefit analysis; subsidies; taxes; tax exportability; user pays.

19.1. Introduction

Public economics and closely associated welfare economics, provides one set of means for assessing the economic benefits and costs of tourism developments and the effectiveness of tourism policies. However, bear in mind that economic methods applied to make these assessments evaluate them from particular points of view. Economic assessments of changes in (economic) welfare rely on specific value judgements. While these value judgements are often socially acceptable, this is not always so. Furthermore, political realities and institutional constraints, limit the extent to which policy-makers are willing to follow advice based on the application of economic methods of analysis. However, this does not imply that economics has no role to play in policy-making but indicates that it is just one input (albeit an important input) in the process of deciding on public policies (see, for example, Pigou, 1932).

The scope for applying methods developed in public economics to the assessment of tourism developments and policies is very wide. Consequently, the coverage in this chapter is only indicative of this scope. The following topics are considered in this chapter in turn:

1. Methods for the social economic evaluation of tourist developments;
2. The implications for public revenue and for economic welfare of taxes and subsidies on the supply of tourism services; and
3. Views about the desirability of applying to an increased extent the user-pays principle to the tourism industry.

19.2. The Social Economic Evaluation of Tourist Development

19.2.1. *The nature of economic evaluation and the two main approaches to this*

A central objective of most approaches to economic evaluation of alternatives for resource use is to assess in quantitative terms either their impacts on economic welfare or on variables expected to affect economic welfare. The two main means which have been employed to do this are, as was considered by Norbert Vanhove in the previous chapter, (1) social cost-benefit analysis and (2) economic impact analysis. Here we add some additional points about these methods.

Social cost-benefit analysis (SCBA) aims to measure changes in economic welfare in monetary terms and relies heavily on methods of evaluation developed in welfare economics. For example, the Kaldor–Hicks principle, also called the potential Paretian improvement principle, is assumed to apply (see, for example, Tisdell and Hartley, 2008, Ch. 8). According to this principle, if those gaining from an economic change (for instance, a new tourism project) could compensate those losing from it and be better off than before the change, social economic welfare is increased. Actual compensation of the losers need not be paid. This, however, ignores the consequences for social welfare of alterations in the distribution of income, changes in the political power and status of the groups involved, and whether or not compensation of losers is justified. In the later respect, Posner (1981, 1987) argues that application of the potential Paretian improvement principle is justified because in the long-term, it results in wealth maximisation. That, however, raises the question of whether wealth maximisation ought to be exclusive goal of society (we think it ought not be) and furthermore, this approach seems to assume that the means justify the end. The latter view is difficult to justify morally.

Consider for example, a policy which involves forced removal of a tribal group from the area of land previously occupied by it to make way for the development of ecotourism and to assist with biodiversity conservation. Suppose that those gaining from the change could (in principle) more than compensate this tribal group for its economic loss but the gainers do not do this. Has social economic welfare increased? Application of the Kaldor–Hicks principle (also Posner's principle of justice) suggests an affirmative answer. Yet the matter is not clear-cut. Furthermore, even if it is agreed that compensation would be paid to the losers, the administrative costs involved in organising this (the transaction costs) may well exceed the economic benefits otherwise obtained. Consequently, if compensation must be paid, the project is uneconomic in this case in the sense that if the gainers had to pay for the transaction costs, they would suffer a net loss after compensating the losers. Furthermore, in some instances, no political mechanisms exist to affect the compensation. For example, the principle gainers from efforts to conserve biodiversity in less developed countries may be in higher income countries but the governments of less developed countries have no power to tax the gainers in high income countries to raise funds to compensate losers in their own country.

This is not to imply that SCBA has no role to play in the evaluation of tourism development and policies, but it is intended to emphasise that its limitations must be kept in mind when applying it. In particular, SCBA provides just one of the possible procedures that can be used to evaluate alterations in resource use. Furthermore, as mentioned below, means sometimes exist to address some of the limitations of SCBA.

A different (and relatively popular) approach to assessing changes in resource use is by means of economic impact analysis. It is frequently used in assessments of the economic consequences of changes in variables that affect the level of market-related activity in the tourism sector (see Part Six of this book, for example). It focuses on variables such as changes in monetary income, expenditure and aggregate levels of production by economic entities brought about by particular events, for example, an increase on expenditure by tourists. As an economic evaluation technique, it also has strengths and weaknesses which are considered below.

19.2.2. *Further discussion of SCBA and its application to tourism*

SCBA involves extensions of private cost-benefit analysis, the nature of which was outlined in Chapter 18, together with some extensions of it to the social sphere, under the heading 'Tourism and Cost-Benefit Analysis'.

Private cost-benefit analysis only takes into account costs incurred and benefits received by private entities directly as a result of market exchange. The perspective of SCBA is wider because it additionally takes account of costs and benefits (such as those that arise from environmental spillovers and externalities) that are not a part of market exchange. For example, consider a tourist developments near a water body into which the developers can freely dispose wastewater from hotels and other facilities. This may adversely affect local fish stocks and the income of local fishers. This effect would be taken into account in SCBA but not in the private cost-benefit analysis for the resort developers. Further discussion of issues involved in the application of SCBA is available for example, in Tisdell (2009, Ch. 6).

Although standard SCBA does not take account of social preferences about changes in the distribution of income brought about by a tourist or other economic development, ultimately such changes need to be taken into account in social decision-making. This can be done in a variety of ways. One way is to use a set of weights that reflect social preferences; for example, a higher weight may be placed on the gains and losses of the poor than on those of the richer members of society. Or in relation to tourism developments within a nation, only the net benefits of nationals may count and not the benefits to foreigners because foreigners do not vote in national elections and therefore, nationally they have no political power, or they only have a limited indirect political influence. These types of approaches to social economic decision-making involve super-imposing a Bergson-type social welfare function (Bergson, 1938) on standard SCBA to provide the basis for rational social choice. A Bergson-type social welfare function merely encapsulates the preferences of those commissioning the SCBA or those that they decide are relevant. In an open society, it is desirable for these preferences to be made explicit and for them to be subject to public debate.

Another important issue in undertaking SCBA is how to allow for the time dimension. Most economists have argued that a dollar in the future is worth less than a dollar now and therefore, in CBA future costs and benefits are discounted using a discount rate based on the rate of interest. This discount rate increases with the rate of interest but opinions differ about the appropriate discount rate to use in SCBA. It has for example, been argued that it should be lower than the private rate of discount and possibly even zero (Pigou, 1932; Ramsey, 1928; Gowdy *et al.*, 2010). If a high discount rate is chosen, tourism projects (and other investment projects) displaying lower sustainability of returns will, other things held equal, tend to be preferred.

The simple case shown in Fig. 19.1 illustrates this point. Suppose that two competing tourism developments or projects are under consideration. The

flow of net benefits from one is as shown by line ABC are for its alternative, the flow of net benefits is as indicated by line DBE. The end point (horizon) for comparing the benefits is assumed to be t_n. The total net benefits from the sustainable option for the planning period ($0 < t < t_n$) are the same for both projects because DBE has been constructed so that the area of triangle ABD equals that of BEC. Consequently, if any discounting of future returns occurs, the less sustainable option will be preferred. Thus, higher discount rates tend to rule out investment options having more sustainable returns, other things being held constant.

Note that while lower discount rates give greater weight to net benefits obtained from projects in the more distant future compared to the near future, they do not necessarily result in the choice of project that gives sustainable returns if CBA is used. For example, in Fig. 19.1 suppose that two alternative tourism projects can be chosen. One gives a net benefit flow indicated by line FGE and the other a sustainable flow shown by line ABC. Even if a zero discount rate is applied, CBA will result in the less sustainable path being chosen in preference to the sustainable one. Thus, if sustainability is a significant priority for decision-making, reliance on discounting techniques, such as CBA, yielding a single summed value of economic worth can prove to be less than adequate, as is also shown in Tisdell (2011) in a different context. Sometimes it is necessary to go further than considering the summation of benefits and evaluate the nature of the whole flow of benefits itself.

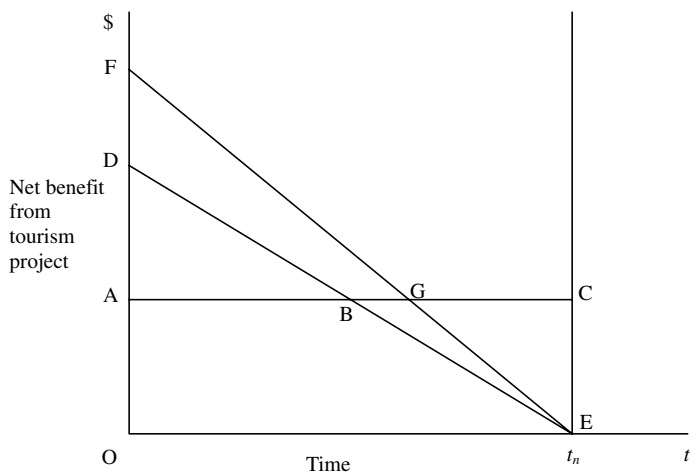

Fig. 19.1. In CBA, discounting tends to favour tourism projects that give quick returns compared to those that give more sustainable returns.

The application of SCBA is challenging because it involves much more than following simple rules. Its application must be adapted to the problem at hand and this usually requires some original thought.

19.2.3. *Economic impact analysis and tourism evaluation*

Economic impact analysis has the objective of quantifying changes in the level of (general) economic activity which are expected to occur as a result of changed relevant circumstances. For example, if there is a rise in the number of visitors to a country or a region, the consequent increase in tourism expenditure in the country or region may be estimated as well as increases in income and employment. Furthermore, increases in tourism in a geographical area may alter its industrial structure and these changes may be predicted using economic impact analysis. This analysis can be tailored to fit different geographical scales (for example, local regional or national ones) and can vary in its chosen degree of complexity. Contributions in Part VI of this book concentrate on applications of economic impact analysis to tourism topics.

At first sight, economic impact analysis may appear to be value-free because it does not incorporate an **explicit** social economic welfare function, unlike social cost-benefit analysis which relies on social criteria derived from welfare economics. However, its application can implicitly result in an economic welfare bias in favour of the supply of marketed or traded goods, to the neglect of non-marketed commodities (such as some environmental goods) which nevertheless have economic value. It is, however, possible that some communities place little value on non-traded goods, such as some environmental goods. Furthermore, most individuals have a special interest in whether they will be employed and the level of income they will earn. Therefore, economic impact analysis can make a valuable contribution to social economic decision-making provided its restricted coverage of economic valuation is kept in mind.

It might also be noted that most studies using economic impact analysis take little account of alternatives. For example, they frequently focus on the predicted economic impact of a particular economic project or development and do not compare these with the impacts of alternative projects and developments. The comparative evaluations and the comparative benefits of alternatives tend to be overlooked. Furthermore, often the sustainability of the stream of expenditures is not given attention or sufficient attention.

This illustrates that care has to be taken in using methods of economic evaluation as a basis for social decision-making. This is true, both of SCBA

and of economic impact analysis. These techniques often only provide the analyst with a partial appreciation of the social problem under consideration.

19.3. An Application of SCBA to the Evaluation of Increased Inbound Tourism

Some economists (see, for example, Clarke and Ng, 1993) have used neoclassical economic modelling relying on the principles underlying SCBA to demonstrate that inbound tourism and increased inbound tourism confer a net economic benefit on the host country. However, they fail to specify several important qualifications to the relevance of this analysis which imply that in some circumstances, increased inbound tourism can have negative economic consequences for the host country and may require public policy responses. In particular, the neoclassical models employed in the argument that increased inbound tourism always adds to the net economic welfare of the host country overlook some environmental and sustainability issues. First, the neoclassical economic theory favouring increased inbound tourism is outlined and then it is qualified.

A partial economic model of the type illustrated in Fig. 19.2 is the simplest one that can be used to support their view that increased inbound tourism provides a net economic benefit to the host country. In this figure, the line AS represents the supply of tourist services to cater for the number of tourist bed nights in a country. Line JD_H represents the demand for bed nights spent in the country by its residents and the line KD_T indicates the total demand for bed nights. The difference between KD_T and JD_H represents the demand of inbound tourists for bed nights.

When inbound tourism is absent, the tourism market in the country being considered in Fig. 19.2 is in equilibrium at point B. Domestic tourists then obtain an economic surplus equivalent to the area of triangle CBJ and the suppliers of tourism services appropriate a surplus of an amount equal to the area of triangle ABC. Suppose, however, that inbound tourism occurs and that this raises the total demand for tourism in the host country to KD_T. Market equilibrium is now established at point H. Consequently, several changes in the economic benefits from tourism occur. First, the level of producers' surplus rises from an amount equivalent to the area of triangle ABC to one equivalent to the area of triangle AHF. However, domestic tourists are now worse off. Assuming that the demand for domestic tourism is unaltered, their economic surplus is reduced by an amount equivalent to the area of quadrilateral CBGF. This, however, is less than the gain to suppliers of tourism services in the host country. Their gain is equal to the

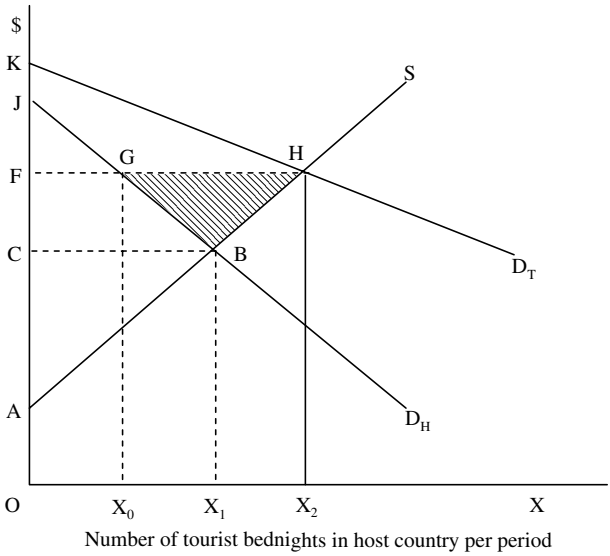

Fig. 19.2. An illustration of a partial equilibrium model of the market for tourism in a host country. This neoclassical model may be used to argue that increased inbound tourism provides a net economic benefit to the host country.

area of quadrilateral CBHF. Therefore, they could in principle compensate domestic tourists for their economic loss and be better off than before the occurrence of inbound tourism. Their net gain (after applying the potential Paretian improvement principle) would be equivalent to the area of the hatched triangle, BHG. This amount will be larger, other things held constant, the larger is the increase in the amount of inbound tourism, that is the more elevated is KD_T. Proponents of this approach (which relies on the potential Paretian improvement principle) argue that the area of triangle BHG measures the net economic benefit to the host country from inbound tourism. However, this analysis is based on a limited perspective. Consider some of the matters which it overlooks.

First, if the tourism services in the country are provided by foreign owned enterprises, these enterprises may appropriate the increased producers' rent from a rise in inbound tourism, particularly if they own strategic tourism resources in the host country. In such cases, global economic welfare might increase due to greater inbound tourism but at the expense of domestic economic welfare. In the worst case scenario, inbound tourism in the host country becomes an enclave industry in which all the relevant assets are owned by foreign firms. On the other hand, in some instances, it is possible that economies of scale or size could result in the supply curve for tourism

services being negatively sloped over some of its range. In that case domestic tourists could benefit by lower prices for tourist services as a result of greater inbound tourism. In practice, the price of some tourism services could fall and others rise because tourism services are heterogeneous. Therefore, this effect will be mixed.

The model also does not consider possible environmental externalities and sustainability issues that may arise as a result of increased tourism. Sustainability is neglected because it is a steady-state model, relies on comparative statics for analytical purposes and therefore, ignores dynamics.

In some instances, expansion in tourism can generate unfavourable environmental externalities, and consequently, the social total costs associated with its expansion can exceed the private costs incurred by the tourism industry. For example, the building of infrastructure to cater for tourism is liable to destroy natural environments and can add to wastes and pollution. This can reduce the net economic benefit received by a host country from inbound tourism, as is illustrated by Tisdell (2000). In some cases, the extra external environmental costs can exceed the extra net benefits otherwise obtained, that is the gains represented by the area of triangle BHG in Fig. 19.2.

Another factor neglected in the model represented by Fig. 19.2 is the sustainability of increased tourism. If increased inbound tourism results in an increasing rate of deterioration of tourism assets or resources in the host country, the initial benefits from increased inbound tourism may not be sustained. The flow of net benefits to the host country depends in some cases on how well the host country manages the volume of its inbound tourism (or tourism generally) in time. For example, a larger number of tourists in one period may strain carrying capacities, reduce environmental assets and reduce the demand for future tourist visits. This problem is raised by Tawfik and Turner in Chapter 39.

Sometimes, a host nation may have to make a choice between a high number of inbound tourists in the short-term giving substantial economic benefits now but lower benefits in the long-term compared to fewer inbound tourists in the short-term but more sustainability of benefits. Figure 19.3 provides an example of this. If the host nation opts for a high level of inbound tourism in the short-term, its flow of economic benefits from inbound tourists might be as shown by curve DBF in Fig. 19.3. This flow could even become negative eventually but this is not shown, for example, because domestic tourists find that their tourist assets have deteriorated due to overuse. On the other hand, if a lower level of inbound tourism in the short-term is achieved, a path like ABC might apply. Therefore, a choice between the

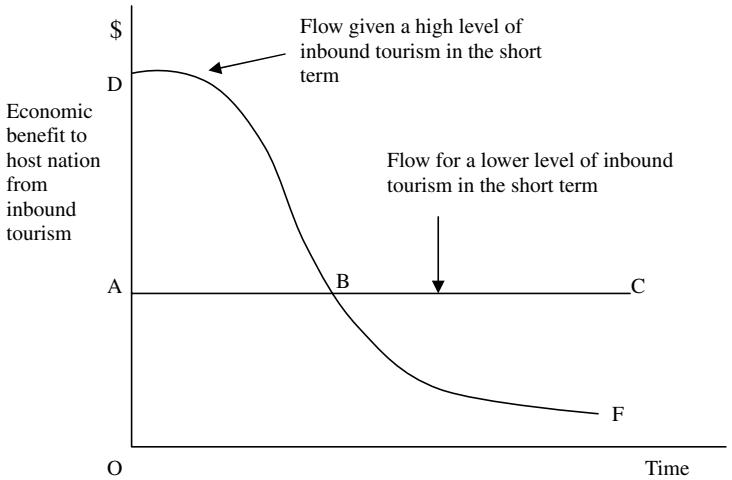

Fig. 19.3. The flow of economic benefits needs to be taken into account when assessing the desirability of alternative volumes of tourism, such as different levels of inbound tourism.

more sustainable flow of benefits and the less sustainable flow of benefits needs to be made.

Note that in practice the flow of economic benefits from tourism does not depend solely on the volume of tourists. Steps may be taken to reduce the environmental impact of a given volume of tourists. For example, tourist resorts may be required to treat wastes before they are released into the environment and sites for tourism buildings and infrastructure may be regulated so as to reduce their environmental impacts.

The above indicates that assessing the economic desirability of inbound tourism can be quite complicated. It becomes even more complicated when its social, cultural and moral impacts must also be taken into account.

19.4. Taxes on Tourism and its Subsidisation

Globally, tourism is subject to many taxes and in many countries, it is also subsidised. Examples of taxes specific to tourism include hotel/motel room taxes and departure taxes. Governments often provide a subsidy for tourism by funding the generic promotion of it or providing information on tourist attractions to tourists. In some nations, taxation relief (for example tax holidays) may be given to companies investing in tourist developments.

Mak (2004, Ch. 2) provides a useful introduction to the range of tourist taxes, indicates how widespread they are, and outlines their general

consequences. He also examines some aspects of government support for promotion of the tourist industry.

It is not possible in this section to consider the whole range of taxes that impact specifically on tourists. Therefore, particular attention will be given to the hotel or lodging room tax. Several of the economic issues raised by the analysis of this tax are also pertinent to other taxes on tourists such as their incidence and their effectiveness in raising public revenue.

Weston (1983) describes room taxes as being ubiquitous and lists many states and countries which impose these taxes. She found that the rate of tax varied widely and was as high as 25% in Bolivia and 22% in Denmark and in India (Weston, 1983, p. 196). She states (Weston, 1983, pp. 197–198):

> 'Economic justification for the imposition of a room tax has several elements: the expenditures taxed tend to be progressive relative to income; the tax is readily and inexpensively collected; non-residents are the major group paying the tax; the growth of tourism gives the tax revenue potential; and the cost of extra public services necessitated by tourist flows may be at least partly recouped. To local authorities facing financial difficulties many of these elements would be very attractive. Protests from residents would be less than in the case of imposition of other forms of tax as the primary burden will fall on non-residents. Further, as the tax is imposed in many countries, there is likely to be less resistance to it by tourists'.

While these may be important reasons for the popularity of room taxes, the extent to which the above are satisfied varies with economic factors. For example, the extent to which the room tax falls on non-resident users of rooms depends on how sizeable is their use by non-residents compared to residents. While in a state such as Hawaii, the principal users of hotel and motel rooms would be non-residents, in some jurisdictions in which there are relatively few foreign tourists and more local travellers, this may not be so. Furthermore, one has to consider the incidence of the tax. To what extent is it effectively paid by guests or hotel owners? As is well-known, this depends on the relative responsiveness of the demand for lodging and that of the supply of hotel rooms. If the demand for hotel rooms is more inelastic in relation to their price than is the supply of hotel rooms, then the largest incidence of the room tax would be on tourists. However, in most cases there is some incidence of a room tax on hotel keepers. For example, Fujii *et al.* (1985) found that the absolute elasticity of demand for lodging in Hawaii to be 0.953 and the supply elasticity of lodging services to be 1.976.

Therefore, the demand for lodging was more inelastic than the supply of lodging services. Consequently, they concluded that the major portion of the room tax was paid by visitors rather than hotel keepers. In fact, on the basis of the ratios of these elasticities, they concluded that two-thirds of the hotel tax was paid by guests and the remainder by the hotel industry. On the other hand, Hemstra and Ismail (1993) in a study of the room taxes for the United States as a whole found that the demand for lodging services was less elastic than their supply and therefore, the burden of the tax fell mainly on those supplying lodging services.

Given the results of Fujii *et al.* (1985), Hawaii's room tax was mainly exported to tourists from out of state. A part of this tax may also have been exported on the supply side. This occurs in the case of foreign owned companies supplying lodging in Hawaii. However, the incidence of a room tax is likely to extend beyond the hotel industry. For example, consider the case in which the demand for hotel rooms by tourists is perfectly inelastic but not the supply of these. In this case, the room tax falls entirely on guests. On the face of it, there is no adverse effect on the local economy. However, guests may reduce their demand for other tourists' services, and suppliers of these will be adversely impacted. Thus the incidence of tax extends beyond the hotel industry in such cases and a less partial economic model (such as an applied general equilibrium model) is needed to take account of these effects. Furthermore, it is even possible in cases where the hotel tax has an incidence on hotel keepers that the wages of hotel employees will be reduced.

Apart from the incidence of the room tax, governments may want to consider how effective this measure is as a means for collecting government revenue. That depends on the extent to which the number of bed nights fall as a result of the imposition of the tax which depends in turn on the responsiveness of the market to changed prices. If either the demand or the supply curve for bed nights is relatively inelastic, the number of bed nights will fall little and the tax will be very effective in adding to government receipts. However, if both are relatively elastic, the number of bed nights will fall considerably once the market equilibrium alters, and government revenue generated by the tax will be less than may be initially expected. Furthermore, in the former case there will be little variation in economic activity and employment in the hotel industry but a substantial reduction in the latter case. Both the employment and economic activity effects of the tax may influence government policy. Governments need to consider possible variations in the values of several variables in imposing such taxes. Above all, it is necessary for policy-makers to be clear about the purpose of taxes on tourism.

It cannot be assumed that the purpose of such taxes is always mainly to generate public revenue. For example, the purpose of a tax on tourism might be to reduce tourist numbers in order to increase the sustainability of tourism visits or to decrease adverse externalities arising from these visits. If the equilibrium of the relevant tourism market is relatively responsive to price changes, using a tax on tourism as a policy instrument will be relatively effective in meeting this objective, but not if the opposite situation prevails. For example, if the demand for tourism commodity to be taxed is relatively inelastic this instrument will be ineffective. This contrasts with a situation in which the main purpose of a tax is to raise public revenue. In that case, markets which are less responsive to price changes are favourable targets for revenue generation. Unfortunately, in practice, government objectives are not always clearly defined and they may alter with the passage of time without government interventions being correspondingly adjusted.

In practice government policies are frequently driven by the pursuit of multiple objectives and are often based on the satisfactory achievement of several target variables. These targets tend to change as community attitudes change and new circumstances evolve. This is apparent from the review of Airey (1993) of Europe's tourism policies; see in particular his Table 5. However, governments may not adopt multi criteria analyses as such because their objectives are often loosely defined. Economist have given little attention to the dynamics of the formation of goals pursued by governments. Possibly, this fits more closely into the area of political science. This means, however, that governments are unlikely to follow the economic welfare approaches suggested by economics. Nevertheless, economics will still be relevant to the achievement of politically determined goals.

On the subject of subsidies for tourism, there are also many economic aspects to consider. For example, to what extent and in what respect, if any, should tourism be subsidised by governments? Hartley and Hooper (1992) point out that such subsidies are often paid without attention to critical economic analysis. According to Hartley and Hooper (1992, p. 15) arguments of 'supporters and opponents of tourism are often dominated by myths and emotions, lacking both critical analysis and supporting evidence'. Furthermore, the range of objectives for providing public support to tourism development are wide (see, for example, Airey, 1993) and the range of incentives given for investment in tourism developments is also considerable (see, for example, Wanhill, 1986, p. 3).

Of course, because of market failures, it can sometimes be rational from an economic perspective to subsidise some tourist developments whereas in other situations it is rational to tax or restrict them. Tourism can make it

economical to develop public infrastructure that not only benefits tourists but also locals because economies of scale in the provision of infrastructure can be realised. In this circumstance, a case may exist for subsidising the development of tourism.

As mentioned above, a common way in which governments subsidise tourism is by funding programmes advertising tourism to attract tourists to particular countries, regions or localities. This advertising or promotion is of a generic or general nature. However, there do not appear to be many empirical studies of how effective this advertising is from an economic perspective, that is both of the economic returns from this expenditure and its cost effectiveness. However, Dwyer and Forsyth (1993) completed a theoretical analysis of the consequences of government support for the promotion of inbound tourism.

Despite various qualifications, there can be an economic case for governments supporting such advertising. For example, it may collectively benefit those in the tourist industry and could be funded out of taxes on the industry, for instance room taxes. The tourism industry itself is unlikely to undertake generic advertising because of free-rider problems. Free-riding occurs because although all tourism suppliers may benefit, from generic advertising no one has an incentive to voluntarily contribute funds for this purpose (see, for example, Mak, 2004, Ch. 12).

19.5. The User-Pays Principle and Tourism

In this section, the user-pays principle is discussed in the context of tourism-related activities. In examining the user-pays principle, a distinction is made between private and public goods. Goods that are non-rival in consumption and non-excludable are termed public goods while in the case of private goods, both excludability and rivalry properties are present. In discussing the user-pays principle, we consider the introduction of a fee or a charge for goods or services that have characteristics more tilted towards public goods rather than private and which have traditionally been provided free of charge by governments. Examples in the tourism sector include infrastructure facilities and natural amenities. In this section, we examine under what circumstances the introduction of a user-pays principle is possible, discuss its merits and demerits and give some examples of user-fees in tourism. The relevant literature is covered, with special emphasis placed on user-fees being charged to access a wilderness or protected natural area. The pros and cons of user-fees for access to such areas are discussed and some findings from research conducted in Australia are reported.

A discussion of the user-pays principle is incomplete without first examining the theoretical foundations under which a user-fee may be introduced. At the heart of this issue is the role of excludability and rivalrousness in consumption. When a good is both non-excludable and non-rival in consumption (termed a pure public good), it is impossible to sell it and it is either not supplied or under supplied even when its supply is economically advantageous (see, for example, Tisdell and Hartley, 2008, p. 38). In cases where exclusion is possible, even though consumption is non-rival, then it is possible to charge fees which are termed user-fees or charges (see, for example, Stiglitz, 2000, Ch. 6). In the literature, this is usually called a quasi-public good or a quasi-private good (Tisdell, 2009, pp. 79–84). A user-pays system (in this case, charging a price for a non-rival good will prevent some individuals, assuming that perfect price discrimination is impossible, from accessing it even though such individuals' consumption does not add to the costs of others consuming the good nor to the costs of its supply). As Stigliz (2000, Ch. 6) points out, charging for such goods 'is inefficient because it results in under consumption'. In addition to under consumption, another form of inefficiency can occur if no charge is allowed for supplying a non-rival good (see, for example, Stiglitz, 2000). In this case, the good will not be supplied at all by private suppliers.

As far as recreational visitors are concerned, wilderness and protected areas can be regarded as a quasi-public good. Adopting the argument of Stiglitz (2000) which he applied to the crossing of a bridge, entry fees to wilderness and protected areas are liable to result in an unnecessary reduction in economic welfare assuming that the services of such areas can be analysed as a quasi-public good. Figure 19.4 shows the demand curve for visits to a wilderness area which has biological attractions and natural scenery. This wilderness area has only a few access points which means exclusion is possible and because of the large area this wilderness covers, it is assumed that it is a non-rival good. As the demand curve shows, the entry-fee will determine the number of visits to the wilderness area. The capacity of the wilderness area is supposed to be Q_c and any demand below this level is assumed to involve no overcrowding. Hence, consumption is non-rival up to Q_c because additional consumption does not affect the level of utility derived by other visitors to the site. As shown, until Q_c is reached, a user-fee of say P, results in under consumption which is inefficient. This is because of the increase in visits when Q is less than Q_c imposes no extra costs and an amount of visitors' surplus equal to the hatched area is unnecessarily lost. Nevertheless, user fees 'are often thought of an equitable way of raising revenues,

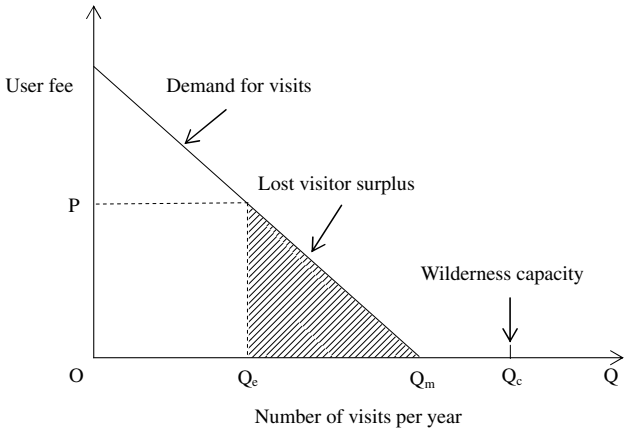

Fig. 19.4. User-fees result in under consumption. In the case illustrated may they result in a deadweight economic loss equal to the hatched area. However, such fees can also have benefits such as reducing pressure on fragile environments and providing finance for positive conservation outcomes.

since those who use the public facility the most (and therefore, presumably benefit from it the most) pay the most' (Stiglitz, 2000).

This text book model involving a quasi-public good is, however, in reality a relatively unsophisticated model, probably kept rather simpler for pedagogic purposes. Some issues which are not considered in relation to the economics of the use of protected areas are:

- The marginal costs of protecting a national park or similar area may be positive and may increase as the number of visits to it increase. This is especially likely to be so if some recreational facilities are provided for visitors and require maintenance. For example, the maintenance costs of paths are liable to increase.
- The concept of carrying capacity is elusive and is usually not well represented by a threshold such as Q_c in Fig. 19.4 (see, for example, Tisdell, 2001, Ch. 10).
- National parks and similar areas provide a range of ecosystem services, and should be regarded as mixed goods (Tisdell and Wen, 1997). Their use for tourism and recreation conflicts, in certain circumstances, with their value for conserving wild species (Budowski, 1976; Tisdell and Wilson, 2006), the value of which may, in large measure be that of a pure public good.
- Opportunity costs are usually incurred in setting aside protected areas. These need to be considered (Tisdell, 2006; Tisdell and Wilson, 2004).

- If the protected area is mostly visited by foreigners who may contribute little or nothing in taxes to the local economy, does that strengthen the case for an entry fee? Should measures be implemented to ensure that locals obtain some benefit from such a charge? These are all matters not addressed by the simplified model shown in Fig. 19.4.

The introduction of user-fees is not a new concept and as Dwyer *et al.* (2010) point out user-fees have been in existence for several decades. However, in recent times user-fees have been widely discussed in the tourism literature and also have received, greater acceptance by the public due to improvements in services that are associated with such fees. Furthermore, user-fees have often been kept low with the services being subsidised via taxes or the revenue raised being kept equal to costs.

User-fees for tourism related activities have been mainly applied in relation to infrastructure, e.g., airports and roads and natural amenities, e.g. national parks and nature reserves (see, for example, Dwyer *et al.*, 2010). Stiglitz (2000, Ch. 6) cites airline ticket taxes as a form of user-fees where the revenue from the ticket tax is used to finance airports and airport traffic control systems. In more recent times, the idea of user-fees has been discussed by budget airlines (e.g., Ryanair) to impose a charge for the use of airline toilets (see, for example, Crouthamel, 2009).

Although user-fees have been applied to provision of infrastructure services, the most common application of user-fees has been for access to natural amenities (see, for example, Hughes *et al.*, 2008; Wilson and Tisdell, 2004). As Tisdell and Wilson (2012, Ch. 3) point out, there has been much discussion about the introduction of user-fees to enter national parks during the past few decades. The debate has been about whether national parks should charge user-fees or increase entry fees to supplement funding from government. As it stands, national parks and protected areas provide quasi-public and some public goods but are seriously underfunded in many cases. As a result, many protected areas lack basic infrastructure facilities to cater for visitors. Here we encounter the classic case of under supply, not of the public good, but of facilities that enhance the use of the public good (i.e., in this case a tourism asset). In addition there being an under supply of facilities, there is also underfunding of conservation work that needs to be undertaken in order to make that resource attractive for tourism purposes. This includes wildlife habitat improvement, predator control and more land being protected (i.e., enlarging the public asset). Underfunding of conservation work undermines the value of the tourism asset and this may even

lead to a decline in tourism numbers. We later provide an example from Victoria, Australia, where the introduction of a user-fee system (to a large extent) has enabled the protection of a nature-based tourism asset which otherwise would have likely been used for other purposes.

A user-fee, as argued earlier, could lead to the under consumption of a tourism asset such as the use of a national park or protected area. However, since the government agency that determines the user-fee and not a monopolist, the user-fee is likely to be low, often priced below the marginal cost of providing the services needed. This is undertaken to minimise the problem of under consumption and recognising that there is some consumer surplus involved. Such a strategy may also benefit the local economy, in the first instance by attracting tourists to a local area and also when tourists spend more days in the area. In short, a user-fee that can improve tourism infrastructure and the quality of tourist assets is likely to generate extra spending by tourists in an area. The literature on tourists visiting natural sites shows that visitors are more likely to visit parks that are well-managed and are of high quality than those that are not (White and Lovett, 1999; Parsons and Thur, 2008; Richardson and Loomis, 2005; Mathieu *et al.*, 2003). Other benefits of user-fees according to many authors (see, for example, Azahari, 2001; Herath, 2000; Schultz *et al.*, 1998; Cullen, 1985; ANZECC, 2000) include: (1) providing better visitor facilities; (2) removing subsidised competition with privately owned protected areas; (3) reducing visitor numbers and hence reducing environmental effects; (4) achieving efficiency in revenue collection; (5) creating positive attitudes towards protected areas; and (6) helping recover some of the parks' maintenance costs, reducing dependency on government funds. For a detailed discussion, see Tisdell and Wilson (2012).

However, user-fees are not without criticism (see, for example, *The Daily Telegraph*, 2000; *Sydney Morning Herald*,, 1999; Lowry, 1993). There is a belief that entry to national parks should be free because the public already pay taxes and hence nature should be freely accessible to all (Herath, 2000). In other words under consumption which is inefficient when a user-fee is introduced, as shown in Fig. 19.4, should not be a major concern. On the other hand, some form of user-fees can raise revenue to improve visitor facilities and undertake conservation work. All over the world, funding available to most national parks, has remained limited and hence they are under-resourced and under-staffed especially at a time when nature-based tourism is growing rapidly in many countries, both developed and developing (see, for example, Ma *et al.*, 2009). It has also been argued that the imposition of fees could have major implications for public support for nature conservation. It has been claimed (see, for example, Curtis, 2003; More and Stevens, 2000;

Herath, 2000) that user-fees (entry fees) could create adverse distributional consequences and that public goods/resources should be equally available to all socio-economic groups. It has also been posited that conservation of natural resources is a community service obligation and that such user-fees amount to a double tax. Curtis (2003) provided some evidence of social exclusion due to a user-fee for a water-based activity in Ireland while More and Stevens (2000) have examined the impact of increasing user-fees on low-income groups. More (1999) pointed out that exclusionary pricing raises fundamental questions about the social purposes of public recreation. In order to minimise the criticism of the domestic populace, some countries, especially developing countries, have designed a two tier user-fee system for locals and foreign visitors to enter national parks and even to use certain infrastructure facilities such as airports.

Despite the criticism, many authors (see, for example, Herath, 2000; Lindberg and Aylward, 1999; Schultz *et al.*, 1998) have argued that the introduction of a user-fee, unless large, will not significantly reduce visitor numbers, especially in the long-term where the demand for visits is relatively inelastic. However, an implication of this inelasticity means that other than fees may be needed to reduce the number of visits to protected areas when this is required for conservation purposes. Furthermore, a cursory look at visitor numbers in Tasmania, Australia (see, for example, Parks and Wildlife Service Tasmania, 2011) where a user-fee has been in place for some time suggests that user-fees have not had a major impact on visitor numbers. Visitor numbers have continued to increase in many national parks in Tasmania even after user fees were introduced. However, this may vary from park to park. This visitation rates in selected national parks increase in suggests that the under consumption argument based on Fig. 19.4 is not strongly supported by empirical evidence, although the effects are likely to be felt by low socio-economic groups, pensioners and frequent visitors. This said, a user-fee can reduce the under supply of facilities issue discussed above especially with respect to provision of facilities for visitors and undertaking conservation work. Furthermore, a study conducted by Wilson and Tisdell (2004) in Lamington National Park (LNP), Queensland, Australia showed that foreigners and Australians, including Queenslanders, would be more willing to pay a user-fee if the money collected was to be used to improve visitor facilities and conservation work. This result indicates that a user-fee is unlikely to deter high income and foreign visitors from visiting LNP. However, a user-fee as argued earlier will have negative consequences for those who are unable to pay or unwilling to pay a user-fee, for example, pensioners, frequent visitors and low-income visitors.

The LNP study is interesting because when visitors were asked a normative question such as whether they 'think that visitors should pay to visit LNP', a large percentage of visitors, especially Australians, say that visitors should not pay to enter LNP compared to a positive question such as 'would you be more willing to pay if money collected is spent to improve park facilities and conservation at this site'. In such a scenario a larger percentage of visitors said that they are more willing to pay than in the previous question, including more Australians, especially Queenslanders. The study suggests that there is less likely to be public opposition to the introduction of a user-fee when visitors perceive that the proceeds from a user-fee will be used to develop visitor facilities and for conservation work. In other words, to increase the supply of visitor facilities and conservation work undertaken. For more details regarding this study see, Tisdell and Wilson (2012, Ch. 3).

In certain instances where natural resources have the desired tourist attributes, user-fees can result in positive conservation outcomes. Tisdell and Wilson (2012, Ch. 12) provide some evidence to this effect. Little penguin (*Eudyptula minor*) viewing has been taking place on Phillip Island, Victoria, Australia since the early 1900s. Visitors would travel to the beach to watch emerging penguins from the sea at dusk. The resource was then a public resource with non-excludability and non-rivalry in consumption. However, with the development of the area, increasing visitor numbers and an increase in introduced predator numbers (e.g., foxes and feral cats) and road kills, the population of little penguins was threatened. However, since the penguin conservation work was undertaken from revenue raised from user-fees to view penguins, this situation has been reversed. Revenue generated from entrance user-fees (i.e., to view little penguins) are being used for predator control and to purchase land adjoining the penguin reserve for the penguin population to expand. If not for such conservation work being undertaken which was financed by entrance-fees, it is likely that the local population of little penguins would have been smaller or even become extinct. In such a scenario the land would have been developed for other recreational/economic activities (e.g., hotels). Furthermore, the educational, economic and conservation benefits arising from visitors' willingness to fund conservation of penguins is significant. Tisdell and Wilson (2012) show that this nature-based tourism activity is one of the main drivers of economic activity generating income and employment in the region containing this attraction. In addition, Tisdell and Wilson (2012) have also shown the positive changes that occur in the knowledge of visitors after viewing penguins and examine other monetary and non-monetary conservation benefits flowing from this tourist activity. They

estimated that 64% of the day visitors and 39% of the overnight visitors would not have visited the area (Phillip Island) if little penguins did not occur. Assuming that the amount spent per day by an average day visitor is AUD43, the loss in spending in the region (due to the absence of this attraction) they estimate to be approximately AUD6.33 million annually. In addition, they estimate that an average overnight visitor would have spent 2.79 days in the area and the loss of spending in the area to be approximately AUD5.6 million annually. Furthermore, they also show that 56% of the overnight visitors who said that they would have visited Phillip Island even without the presence of penguins would have reduced the number of days spent in the area by one day. The loss of spending is estimated to be approximately AUD1.39 million per year. Therefore, the annual loss in total spending in the region if penguins did not occur is estimated to be approximately AUD13.32 million. Therefore, they show that the amount of spending that is generated because of the presence of penguins is considerable and if the income and employment multipliers are taken into account the local economic impact is likely to be even larger.

The extent to the user-fees imposition of resulted in this case has unclear. The relatively expensive user-fees may have had an impact on frequent visitors and low income visitors despite visitation rates being around 500,000 a year on average for almost a decade. Nevertheless, despite the 'theoretical' under consumption discussed in Fig. 19.4 and the resulting inefficiency, the user-fee has been able to protect the resource base and make the use of this resource sustainable for both current and future generations. The analysis in Fig. 19.4 does not deal with such issues. Clearly, the supply of visitor facilities at this site has increased since the introduction of user-fees while the resource (little penguins) remains non-rival in consumption.

This then brings us to SCBA and economic impact analysis discussed in Sec. 19.2. Whilst a user-fee can result in under consumption for certain socio-economic groups (which is inefficient from an economics point of view), it can also at the same time reduce the undersupply of visitor facilities and enhance the attractiveness of the use of such resources. As pointed out, user-fees can improve conservation outcomes of the resources being used for tourism purposes. Despite the clear overall benefits, the Kaldor–Hicks principle implies that actual compensation of losers need not be paid and as pointed out in a reduction in visitor numbers is ignores the consequences for social welfare and economic status of groups involved. In short, SCBA does not capture all scenarios adequately as explained in Sec. 19.2. Similar issues arise with economic impact analysis which only normally considers a single

alternative. As pointed out, it is important to consider the comparative benefits of alternatives.

19.6. Conclusions

This chapter has considered the relevance of public economics to two general topics involving tourism policies. These are (1) its application to the assessment of tourist developments from a social economic point of view; and (2) the implications for public finance and for economic welfare of tourism taxes and subsidies. Social cost-benefit analysis and economic impact analysis were examined as possible techniques for evaluating tourism developments. It was concluded that each provides a different but partial perspective on the economic consequences of tourism developments. Although specific shortcomings of these methods were identified, it was also pointed out that some of these can be overcome by modifying the techniques, for instance, in the case of social cost-benefit analysis using weights to reflect value judgements about the distribution of income. Nevertheless, Pigou's view (Pigou, 1932) still holds that economic methods of evaluation provide an important but only a partial guide to desirable public policies.

The further question arose of the extent to which governments are likely to be guided in devising tourism policies by prescriptions based on economic analysis, particularly normative economic analysis based on criteria favoured in welfare economics, such as the potential Paretian improvement criterion. It was suggested that such prescriptions may only be followed to a limited extent, if at all. This is because government goals or objectives are not well-specified (which may partly be a result of social conflict and bounded rationality) and they alter as community attitudes and circumstances change. In addition, in democratic societies, political parties are influenced by vote gathering and by special interest groups. These complexities are not captured in economic models and this has led some economists unfortunately to stigmatise welfare economics as Nirvana economics. Despite this it still has social value because it brings an additional perspective to the debate about desirable tourism policies. It contributes to informed debate. Furthermore, positive economic analysis can help to determine whether tourism policies are likely to achieve the economic objectives which are politically determined.

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Chapter 20

BEACHES AS SOCIETAL ASSETS: COUNCIL EXPENDITURES, RECREATIONAL RETURNS, AND CLIMATE CHANGE

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This world is not endowed to us by our parents but lent to us by the next generation. (Anon.)

Abstract: Drawing on expenditure and survey data from the Gold and Sunshine Coasts in Queensland, Australia, this chapter compares expenditures on beaches relative to their recreational benefits. Beaches are found to be exceptional investments. The comparison of the two councils also provides insights into their relative capacity to adapt to the adverse impacts of climate change. The Gold Coast can rely to some extent on historical large investments in infrastructure to defend itself against change. In contrast, the Sunshine Coast has more options which may lower the cost of adaptation e.g., it can rely more heavily on retreating from change in certain locations because of historical investment in dunal buffer zones. However, historical investment patterns impact in different ways on the environmental quality of beaches and the benefits provided to users and non-users. Limitations and areas of future research are also outlined.

Keywords: Beaches; benefits; climate change; conservation; foreshores; investment; tourism.

20.1. Introduction

Beaches and foreshores provide an array of goods and services to coastal communities. For example, beaches on the Sunshine and Gold Coasts in Australia are important tourist destinations and recreational places both for locals and day visitors. As we present later in this chapter, annual visits for tourists and residents are in the order of 42 million for the Gold Coast and

24 million for the Sunshine Coast.[1] In many cases, these visits are in excess of those of other outdoor recreation sites such as national parks (Blackwell, 2007). In addition to their tourist and recreational benefit, beaches are also assets for some individuals who may use them rarely for recreation: Those who want to live close to their beaches or retire near them; many of whom may be chasing a dream! Because beaches are important to residents and tourists alike, governments spend money to ensure their conservation.

Given this background, this chapter considers three important questions on beach and foreshore economics. First, how do expenditures on beaches compare to the returns or benefits provided to society? Second, is there sufficient expenditure in natural remedies to address erosion? Third, how do historical expenditures effect the options for local shire councils in adapting to climate change? The first question has been asked previously, but not in the context of natural remedies and to provide insights into adaption options.

First however, what do we mean by natural remedies? These include activities that rehabilitate a beach ecosystem rather than attempts to harden the coast such as through the construction of rock walls and groynes. The creation of buffer zones such as fencing and revegetation tends to fall within the natural remedy, or 'soft' management category but the distinction in practice is not straight forward.[2]

Making a distinction between natural and non-natural remedies is crucial to the concept of sustainable use of beaches and foreshores. If essential ecosystem processes are not maintained or biological diversity and resilience enhanced (COAG, 1992; DSE, 2010) from generation to generation then the ecologically sustainable development (ESD) criterion is not met (Rawls, 1971). Therefore, in this chapter it is argued that the replacement of natural with man-made capital does not maintain ecosystems and nor does it enhance biological diversity. While replacing natural capital with hard

[1]These are preliminary estimates. Accurate measures of visitation to beaches in Australia are needed to provide their total value to society.

[2]For example, the practice on the Gold Coast is to import sand to cover an extensive system of seawalls to build up dunes and beaches. Over 40 years, this has led to the establishment of a number of significant dunal systems. Other factors include the source of sand for creation of buffer zones, plant types used in revegetation works (endemic or otherwise) and activities that have occurred historically such as sand mining or grazing that resulted in large scale modifications to natural systems. The environmental impact of replenishment options is also not straightforward and can have tinges of hard or soft responses.

infrastructure may increase use, and thus recreational or tourism returns, it results in a lower quality of environmental experience and reduced environmental and species interaction.

Because conversions from dependence on natural to man-made capital are typically gradual, they tend to be overlooked, unnoticed or unseen, and their effect becomes synergistic and cumulative (Marsden and Dovers, 2002). Further, where the next generation has no experience of prior environmental quality or species interaction, these synergistic and cumulative impacts or losses in natural capital (i.e., ecosystem goods and services) go unnoticed.

A number of studies have answered this chapter's first question but not the second and third and by comparing the policies of councils. Ours has the uniqueness of drawing on evidence from the Sunshine and Gold Coasts in Queensland, Australia.

Smith and Piggot (1989) may be credited as the first in Australia to refer to investment in beaches falling short of their return to users. They found that the expenditure by Gold Coast City Council on lifeguards, beach cleaning and dune and fence maintenance in 1984 was $760,000 AUD. In contrast, the discounted value of beach users' time on-site amounted to $24 m with a capitalised value of $160 m. Thus, according to Smith and Piggot (1989) the capitalised value in 1985 of expenditure on beaches represented 3.75% of the capitalised value of users' time.

Prior to Smith and Piggot, the Queensland Government (1972) commissioned an analysis of the loss in tourism expenditure resulting from the severe erosion that occurred on the Gold Coast beaches at the end of the 1960's (Maitra and Walker, 1972). In corollary, the benefits of maintaining tourism expenditures from 1972 to 1982 were estimated to be $227 m in 1972 dollars. These expenditure benefits for replenishment works provided a ratio range of between 15 and 23 to one against costs, but despite intentions, the case did not receive support from the Commonwealth. Instead of benefits based on expenditure, surplus measures (e.g., recreational benefits) and environmental benefits may provide a more compelling case for public funding from the Commonwealth, should it be required in the future.

More recently, Raybould and Mules (1998) undertook a cost-benefit analysis of the Gold Coast's proposed northern beach protection program and found that the benefits exceeded costs by 60 to one with a net present value (NPV) of $475 m at a discount rate of 8%. In their study, they included tourism benefits from protection from erosion events. They also included estimates of the prevention of loss of assets from fencing and vegetation to roads, parking and paths. A distinction between natural and non-natural

capital investment would have added an ecological dimension to their analysis.

Even in more recent times, economic assessments of beach replenishment works, while recognising the importance of ecological consequences, do not account for these in their analysis. An example is from a cost-benefit study of the replenishment of beaches in Port Phillip Bay, Victoria:

> ...it is important to consider the potential negative downstream or adverse ecological effects from the renourishment works. ...we have not specifically considered such impacts in this report. (PWC, 2003, p. 40)

In contrast, we assume there is a slow attrition of ecological quality from non-natural works, with resultant deterioration of natural beach capital. While a return is provided through increased tourism and human activity, this approach fails to meet the ESD criterion, ignoring the full range of goods and services provided by healthy beach ecosystems.

To argue that there is no consideration by management agencies of the ecosystem goods and services provided by healthy natural assets would be inaccurate. An example is the Natural Resource Investment Program (NRIP) in Victoria which identifies ecosystems as assets and in which coastal and marine ecosystems are included (WGCMA, 2011). However, for beaches across Australian states, human recreation and protection of upland property maintains priority in approaches to replenishment work (AECOM, 2010; Burgan, 2003; DIP, 2007; PWC, 2003).

In this chapter, case studies from the Gold and Sunshine Coasts are used to compare recent investment in beaches and foreshores against the returns provided to society measured through consumer surplus — the maximum amount people are willing to pay (WTP) for these services less the price paid for these services. Beach access for recreation is free on the Gold and Sunshine Coasts and therefore WTP measures consumer surplus.

The remainder of the chapter contains sections on materials and methods, results, discussion and conclusion.

20.2. Materials and Methods

The approach taken in this chapter involves two steps.

First, we summarise available data on local shire councils' capital and operations expenditure on beaches and foreshores. Together, capital and operations expenditure, are categorised as investment because they are

monies spent to ensure the continued flow of benefits from healthy beach systems.

Second, these investments are then compared to estimates of benefits from available studies of beach users. Economic non-use values have not been estimated in Australia for beaches and foreshores (Blackwell, 2007) and some discussion of the possible extent of these is provided later in this chapter because these are likely to make a large contribution to the overall returns to society.

20.2.1. *Capital and operations expenditure*

The Gold Coast City Council (GCCC) and Sunshine Coast Regional Councils (SCRC) were contacted by phone (McKay, D, McGrath, J, Patrick, R and Young, W (2011) Pers. Comm. May-Aug. Gold Coast: GCCC; Allan, C (2011) Pers. Comm. May-Aug. Maroochydore: SCRC) and provided by email, capital and operations expenditure for beaches and foreshores within their jurisdictions. These expenditures covered beach works, cleaning and lifeguarding[3] services, similar to Smith and Piggot (1989). Where possible, expenditures on beach works were further divided into natural and non-natural expenditures. Natural expenditures included those on sand replenishment, and dunal fencing and protection. The remaining beach works, cleaning and lifeguarding expenditures were considered non-natural.

20.2.2. *Benefits to society*

The benefits provided to society from beaches and foreshore may be divided into two broad categories — use related and non-use related. The focus of this chapter is on use or passive uses because these were the data most readily available to the authors.

Benefits were estimated for the Gold Coast by analysing existing data (Raybould and Lazarow, 2009) while those from the Sunshine Coast were already available (Blackwell, 2007) and were simply aggregated across a larger population than in the original study.

For the Sunshine Coast, Blackwell (2007) used the individual travel cost method to estimate the benefits to resident, tourist and combined recreational users. The same method was used to analyse the data collected by

[3]Note that these expenditures do not include the cost of services provided by Surf Lifesaving, the lead aquatic safety authority in Australia, which is likely to be significant, when costs of volunteer time and contributions from other governments and industry are included.

Raybould and Lazarow (2009) for Gold Coast beaches as depicted in the results section below. The methods used to collect both data sets are outlined in each of the respective sources. Blackwell's (2007) survey was of beach users on beaches across the Sunshine Coast[4] while Raybould and Lazarow (2009) used a mail survey of Gold Coast residents. A number of adjustments were required for the Raybould and Lazarow (2009) dataset to ensure comparable results with those of Blackwell (2007) and some limitations to our approach remain:

- Australian Bureau of Statistics (2011), National Regional Profile data for individual wage and salary income from 2008 were married with the postcode provided by respondents using the AusPost (2011) postcode locator. Wage and salary income is not an ideal match with before tax household income collected from respondents by Blackwell (2007) but provides some indication of the general capacity to pay of the individual based on the locality in which they live. These wage and salary estimates were also used in estimating the value of respondent's time from the Gold Coast sample.
- No adjustment has been made of travel costs in the Gold Coast data to account for the value of a beach visit *per se*, separate from the whole trip experience of respondents (Bateman, 1993).
- No inclusion of time spent onsite to calculate the cost of being onsite, because of dissimilar datasets.
- The inclusion of a number of variables that were not included in the Sunshine Coast regressions undertaken by Blackwell (2007) including gender, age range, household size, and whether a respondent owned their own home. The major of variables, however, are similar.
- The requirement to assume that party size was one where it was not stated by respondent.
- The requirement to delete a number of observations for:
  - Non-users, to be consistent with Blackwell's (2007) Sunshine Coast survey of users; and
  - Missing data across a number of explanatory variables.

This resulted in the final sample size being reduced but still of a significant size considerably larger than Blackwell's (2007).

Table 20.1 provides a description and any necessary calculations of the variables used in the regression analysis of the Gold Coast data. These

[4]Because Blackwell's (2007) observations include a small number from outside the Sunshine Coast region (i.e., Cottesloe in WA, $n = 7$) for practical reasons the benefit estimates are used as provided.

Table 20.1. Regression variables used for Gold Coast data.

Variable name	Description	Measurement for subsequent component
Dependent		
VISITSPY*	Respondent's annual quantity of day visits to the site	Whole, positive number
Explanatory		
COMVIS*	Respondents annual quantity of day visits to next favourite beach site	Whole, positive number
TTSCMIN*	Per person fuel costs of travel to the site including return (distance * $/km/party size * 2 (return trip)[a])	$, AUD per person per trip
TTSCTIM*	Per person money expenditure of travel (distance * $/km/party size * 2 (return trip)[b]) + travel time cost (travel time * 0.4 of individual's wage rate)	$, AUD per person per trip
PARTSIZE*	Size of respondent's car party	Whole, positive number
FEM	Whether respondents was female or not	1 = yes 0 = no
AGE	Age of respondent	Midpoint of ranges in years
INC*	Individual salary and wage income from Statistical Local Area of respondent via their post code	$, AUD 2007–08
HHSIZE	Total number of people in respondent's household	Whole, positive number
OWNER	Whether respondent owns their home or not	1 = yes 0 = no
EMPDUM*	Whether respondent is a full time employee or not	1 = yes 0 = no

Notes and Sources: (a). Fuel costs based on medium sized car, 2.4L at $0.1449/km from RACQ (2008); (b). Running costs based on Ordinary Cars, up to 1600cc, $0.58/km (smallest amount) as allowed by the Australian Taxation Office 2007/08 financial year (RACQ, 2008; confirmed ATO, 2008, p. 46).

explanatory variables were chosen based on their expected relationship with explaining visits taken by beach users on an annual basis (VISITSPY). The star indicates a similar variable in Blackwell's (2007) study. Generally the models are therefore similar.

20.3. Results

The results are divided into investment by council and benefits returned to society.

20.3.1. *Capital and operations expenditure*

The investment expenditure data provided by relevant councils is summarised in Table 20.2. This table shows that the Gold Coast spends more in total than the Sunshine Coast and for all beach services and works. Most of the expenditures on beaches for both councils are non-natural. Natural expenditures on dunal fencing and protection are small compared with the non-natural expenditures. For example, the Gold Coast capital expenditure for dunal fencing was $90,000 representing about half of 1% of the total capital budget for 2010–2011. Beach conservation activities represent nine per cent of the Gold Coast's, and 6% of the Sunshine Coast's, total beach and foreshore operational budgets. Beach replenishment works represent 56% of the Gold Coast's, and 85% of the Sunshine Coast's, total beach and foreshore capital budget.

Resident populations can account for some of the differences in expenditures between councils. In 2009, the Gold Coast had 527,828 residents and the Sunshine Coast had 330,934 (ABS, 2011). As shown in Table 20.2, for individual items, the Gold Coast spends more per resident than that of the Sunshine Coast[5] e.g., tidal waterways operations, $8.4 per resident versus coastal and canals expenditure of $7.7 per resident. In total, residents on the Gold Coast spent individually almost $40 and those on the Sunshine Coast spent almost $35 in 2010–2011 on beaches, foreshores and coastal and canal works.[6] Of these totals, the Tweed River Bypassing Scheme, foreshoreways works and shoreline management planning sum to $11 per resident in 2010–2011 for the Gold Coast and $10.60 for the Sunshine Coast for foreshore protection and beach renourishment.[7]

[5]One exception is beach cleaning where the the Sunshine Coast spends slightly more than the Gold Coast ($1.2 versus $1.3 per resident).

[6]Coastal and canal works were included because canal and estuarine systems have to be managed in an integrated fashion with ocean beaches because both systems are physically dependent and provide amenity to the community.

[7]In addition to councils, other agencies also spend money on these coastlines e.g., Queensland Department of Transport pay most or all of the funds towards the Gold Coast Seaway bypassing system and Queensland Parks and Wildlife Service invest in Burleigh National Park.

Table 20.2. Expenditures by councils on beaches and foreshores, Gold Coast and Sunshine Coast, 2010–2011.

Expenditure type	Gold coast	$m	$/resident	Sunshine coast (descriptor blank if same as Gold coast)	$m	$/resident
Operational	Tidal waterways operations	4.42	8.4	Coastal and canals	2.55	7.7
	Beach maintenance e.g., dunal conservation	1.23	2.3	Dunal conservation works	0.45	1.4
	Federation walk	0.21	0.4		0	0.0
	Beach Cleaning	0.62	1.2		0.42	1.3
	Lifeguard Services	7.44	14.1		3.9	11.8
	Total operating expenditure	**13.91**	26.4		**7.32**	22.1
Capital	Beach facility works	1.81	3.4	Beach access upgrades & replacements	0.64	1.9
	Tweed River bypass scheme & beach replenishment[a]	3.82	7.2	Foreshore protection, beach nourishment	3.5	10.6
	Foreshoreways works	1.50	2.8		0	0.0
	Shoreline management planning	0.19	0.4		0	0.0
	Total capital expenditure	7.13	13.5		4.14	12.5
Grand total		**21.05**	39.9		**11.46**	34.6

Notes and sources: (a). About $2.5 m represents the Gold Coast's contribution to the Sand bypassing scheme. The remaining is replenishment works. Gold Coast data from McKay D, McGrath J, Patrick R, Ford D, and W Young (2011) Pers. Comm. May-Aug. Gold Coast: GCCC; Sunshine Coast data from Allan, C (2011) Pers. Comm. May-Aug. Maroochydore: SCRC.

20.3.2. *Benefits: Gold Coast regression results*

In order to obtain reliable estimates of the benefits of beach recreation using the travel cost method, it is necessary to first obtain a statistically significant and correctly signed relationship between travel costs and number of visits undertaken by respondents. Further, a sound model for explaining visits is also necessary to control for factors other than travel cost.

Table 20.3 presents the results of the travel cost models from the survey data of Gold Coast residents. TCMIN is the travel cost model in which only fuel costs are considered, while TCTIM is the model where total costs of running a vehicle allowable by the Taxation Office plus travel time costs are included. These models were chosen from a possible array in order to be consistent with the Sunshine Coast estimates, that is, they provide lower and upper bound values of consumer surpluses and because time in modern life is a scarce commodity.

The results of three functional forms, ordinary least squares (OLS), truncated Poisson (TP), and truncated negative binomial (TNB) are presented in the table, again being consistent with Blackwell (2003). In the case of overdispersion, the TNB functional form is preferred (refer to Blackwell, 2003). The dispersion co-efficient in the TP model, α, is both positive and significant. The TNB model has the added advantage of dealing with truncation and sample selection bias[8] (Shaw, 1988).

The results in Table 20.3 provide the following insights:

- The TNB regressions for residents have the highest log likelihood and as expected are therefore, the preferred models.
- The most important coefficients in these regressions for gaining consumer surplus measures are those for travel costs. In all models, the travel cost coefficients have a negative sign which is to be expected, and are significant at least at the 1% level. The negative sign is expected because as the costs of travel to the site increase, individuals are expected to take fewer trips per annum, *ceteris paribus* (given a fixed level of income).

[8]The Gold Coast data were collected via mail-out to residents which, therefore, include both users and non-users of beaches. In order to be comparable to the Sunshine Coast data of Blackwell (2009), non-users were excluded from the Gold Coast sample data of Raybould and Lazarow (2009). Areas for further research include to: (1) Compare the results obtained in this chapter with those where the observations include non-users, that is, people who do not visit the Gold Coast beaches; and (2) To investigate whether mixed mode data collection strategies elicit significantly different users, patterns and user preferences.

Table 20.3. Regression results of survey data from Gold Coast residents, TCMIN and TCTIM.

	TCMIN			TCTIM		
Variable	Ordinary least squares (OLS)	Truncated poisson (TP)	Truncated negative binomial (TNB)	OLS	TP	TNB
Constant	71.56	4.96*	5.53*	57.54	4.76*	5.45*
	(1.18)	(57.86)	(10.60)	(0.94)	(55.09)	(10.47)
COMVIS	0.9777*	0.0029*	0.0070*	0.9759*	0.0029*	0.0070*
	(32.39)	(210.6)	(23.99)	(32.41)	(212.4)	(23.97)
TCMIN or TCTIM	−8.34*	−0.1434*	−0.0958*	−1.74*	−0.0303*	−0.0204*
	(−5.20)	(−55.17)	(−9.77)	(−5.78)	(−62.4)	(−12.88)
PARTSIZE	−14.64*	−0.2381*	−0.1990*	−13.63*	−0.2195*	−0.1892*
	(−6.63)	(−73.58)	(−10.22)	(−6.33)	(−69.0)	(−9.81)
FEM	−5.53	−0.1647*	−0.0846**	−5.57	−0.1669*	−0.0835**
	(−1.17)	(−26.79)	(−2.15)	(−1.18)	(−27.14)	(−2.13)
AGE	1.18	0.0261*	0.017	1.19	0.0266*	0.0166
	(1.11)	(18.05)	(1.58)	(1.12)	(18.37)	(1.54)
AGESQ	−0.01	−0.0003	−0.0002	−0.01	−0.0003*	−0.0002
	(−1.21)	(−18.81)	(−1.82)	(−1.19)	(−18.80)	(−1.74)
INC	−0.00009	−0.00001*	−0.00003*	0.0003	−0.000006*	−0.00003**
	(−0.06)	(−5.88)	(−2.75)	(0.24)	(−2.91)	(−2.48)

(*Continued*)

Table 20.3. (*Continued*)

	TCMIN			TCTIM		
Variable	Ordinary least squares (OLS)	Truncated poisson (TP)	Truncated negative binomial (TNB)	OLS	TP	TNB
HHSIZE	2.75 (1.38)	0.0549* (21.03)	0.0347** (2.30)	2.64 (1.33)	0.0525* (20.16)	0.0339** (2.23)
OWNER	−10.00 (−1.44)	−0.1717* (−19.87)	−0.1315** (−2.08)	−10.43 (−1.50)	−0.1787* (−20.65)	−0.1036** (−2.04)
EMPDUM	−2.58 (−0.50)	−0.0864* (−12.44)	−0.1011** (−1.99)	−2.85 (−0.55)	−0.0919* (−13.24)	−0.1036** (−2.04)
α	—	—	0.5821* (24.86)	—	—	0.5766* (24.95)
Chi squared	—	43243*	67969*	—	44186*	67040*
Log Likelihood	−7680.7	−40921	−6936.4	−7677.5	−40450	−6929.6
Adj. R^2	0.4901	—	—	0.4925	—	—
F	128.2*	—	—	129.4*	—	—
N	1324	1324	1324	1324	1324	1324

Notes: t-value or equivalent in brackets. Significance level: * = 1%, ** = 5%.

- The more visits a person takes to their favourite beach, the more likely they are to take visits to a complementary beach. This positive relationship is significant across all models and functional forms.
- The larger a respondent's travel party size the less likely is she or he to take a beach visit. Coordinating larger group sizes can be difficult. This result is significant across all models and functional forms.
- Females take fewer visits to beaches. People on higher incomes take fewer visits. Larger households take more visits. Owners of homes and full time employees take fewer visits. These results are significant in the TP and TNB functional forms.

20.3.3. *Benefits of beach recreation*

Table 20.4 outlines the estimated benefits (consumer surplus) per person-visit using the travel cost-coefficients for TCMIN and TCTIM from Table 20.4. The estimates are similar in order of magnitude to those from the Sunshine Coast. Any differences are more likely to reflect differences in the variables used to explain visits, the different years at which the data were collected, and different social, environmental and economic contexts for beach use associated with these periods, rather than measuring differences in the quality of experience.

Because survey data from the Gold Coast only included residents, the consumer surplus of tourists was estimated. Table 20.5 extrapolates the consumer surplus estimates for all beach users, i.e., residents and tourists, to the Gold Coast by assuming the same ratio of consumer surplus for residents and the entire sample (residents and tourists) found in Blackwell (2003, p. 89) and presented in Table 20.6. In both tables, the OLS results have been

Table 20.4. Consumer surplus in Australian dollars for beach recreation for residents only, per person-visit, 2008.

	Gold coast			Sunshine coast[a]		
Variable	OLS	TP	TNB	OLS	TP	TNB
TCMIN	4.28	6.97	10.44	1.21	4.21	5.92
TCTIM	20.35	33.00	49.02	8.86	30.18	43.11

Notes: All consumer surplus measures were estimated from statistically significant variables. (a). Measures were escalated at 12% per annum from original study date of 1999–2000, Blackwell (2003, p. 89).

Table 20.5. Consumer surpluses in Australian dollars for beach recreation for residents and tourists combined, per person-visit, 2008.

	Gold Coast		Sunshine Coast[a]	
Variable	TP	TNB	TP	TNB
TCMIN	23.71	56.73	14.31	32.16
TCTIM	132.77	337.73	121.42	296.99

Sources and notes: (a). Measures were escalated at 12% per annum from original study date of 1999–2000, Blackwell (2003, p. 89).

Table 20.6. Ratios used to estimate Gold Coast combined resident and visitor consumer surplus.

	Functional form	
Variable	TP	TNB
TCMIN	0.29	0.18
TCTIM	0.25	0.15

Source: Calculated from Blackwell (2003) estimates.

Table 20.7. Total consumer surplus ($m) per annum for beach recreation for residents and tourists.

		Gold Coast		Sunshine Coast[a]	
	Variable	TP	TNB	TP	TNB
Functional form	TCMIN	996	2,383	343	772
Consumer Surplus	TCTIM	5,576	14,185	2,914	7,128

Notes and sources: OLS estimates have been removed. (a). Person-visits calculated as sum of resident (2007) and tourist (2006) person-visits from Raybould and Lazarow (2009, pp. 21, 26) with resident person-visits adjusted for 13% of non-users. (b) Person-visits based on Table 20.8.

removed because the travel cost variables were not statistically significant using the Sunshine Coast data.

These per person-visit benefits presented in Table 20.5 can then be aggregated across user populations in order to estimate the total value of beach recreation at the two shires. Table 20.7 outlines these total benefits by

multiplying the per person-visit estimates in Table 20.5 by annual beach visitation estimates for each council area as estimated as discussed in the next section.

20.3.4. *Person-visit estimates*

The person-visits for tourists and residents had already been separately calculated for the Gold Coast in Raybould and Lazarow (2009). These were summed to gain the total person-visits for Gold Coast beaches after adjusting resident person-visits for non-users (13%) to obtain 42,000,000 person-visits. For the Sunshine Coast, we estimated 24,000,000 to be total person-visits by 'building on' the lifeguard estimate for Mooloolaba beach[9] of 1.6 m visits in 2000 (Blackwell, 2007). Table 20.8 provides a summary of the calculation which is then escalated using a proxy of growth from the Sunshine Coast population using ABS (2011) data.

Table 20.8. Total person-visit build for Sunshine Coast Beaches.

Beach name	Proportion relative to Mooloolaba	Person-visits
Mooloolaba[a]	na	1,600,000
Noosa Heads	200%	3,200,000
Sunshine Beach	70%	1,120,000
Peregian	50%	800,000
Coolum	90%	1,440,000
Yaroomba	20%	320,000
Marcoola	40%	640,000
Mudjimba	40%	640,000
Twin Waters	30%	480,000
Maroochydore	100%	1,600,000
Alexandra Headland	70%	1,120,000
Kawana	60%	960,000
Kawana to Caloundra other	50%	800,000
Caloundra	200%	3,200,000
Remaining beaches	50%	800,000
Total		**18,720,000**
Total given growth to 2008[b]		**24,000,000**

Notes and sources: (a). Mooloolaba estimate from lifeguard records as reported in Blackwell (2007). (b). Estimate escalated using proxy of growth from Sunshine Coast population at 3% per year from 2000 to 2007 (ABS, 2011).

[9]Lifeguard records are inherently conservative as discussed by Blackwell (2003).

20.4. Discussion

20.4.1. *Nature's economy*

The differences in expenditures in the results section above, show how the Sunshine Coast has, in some locations, an ability to rely more heavily on the economy of nature,[10] or buffer zones, as compared to the Gold Coast. Planning arrangements (land use zoning) provide for greater set-back limits and buffer zones in certain areas (e.g., Kawana[11]) ensuring that during erosion periods, sufficient dunal sand is available to dissipate wave energy and protect upland areas. During progradation periods, these sandy coastlines naturally reform and in the process dunes are rebuilt. Further, overall net longshore sand transport is lower on the Sunshine Coast than on the Gold Coast, which suggests that large scale interventions such as the construction of river training walls (to reduce sand transport) or sand bypassing systems (to increase sand transport) will have different impacts across the two locations. A shire's ability to rely on this economy of buffer zones for beach expenditure is summarised in Fig. 20.1.

In Fig. 20.1, the vertical axis measures value in dollars and the horizontal axis has the dual depiction of development percentage from zero to 100%

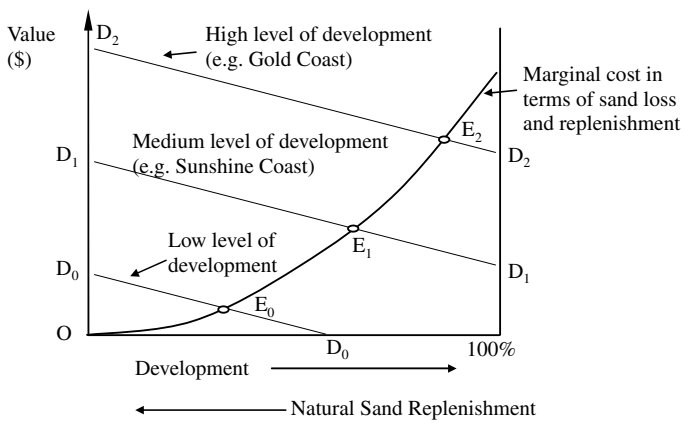

Fig. 20.1. Council reliance on nature's economy.

[10]Gilbert White (1949) was among the first in modern times to coin the term 'nature's economy' when watching the symbiosis of farm animals and birds in England. For a discussion on an ecological-economic viewpoint on the causes, effects and remedies of beach erosion and nature's economy, see Blackwell (2003).

[11]The Beach Protection Authority ensured that there were sufficient dunal buffer zones set-aside in planning of the development of Kawana.

in one direction and natural sand replenishment reliance percentage in the other. The demand curves (D_0 to D_2) for development and corresponding inverse levels of natural sand replenishment are drawn for different councils. Where the marginal costs of sand loss (or replenishment costs) intersect the demand curves, the optimal percentage of development and corresponding reliance on natural sand replenishment are provided. Areas with medium levels of development such as the Sunshine Coast are depicted by equilibrium E_1 and are more attuned to natural sand replenishment of beaches compared with highly developed areas such as Gold Coast as depicted by equilibrium E_2. Where an area is more developed, the less likely is the area's government to rely on nature's economy to solve the area's coastal erosion problem.[12]

The scale and spread of development on the Gold Coast has tended to occur closer to the beach — in many cases on top of the frontal dune — than on the Sunshine Coast.[13] The reason for this difference is a combination of historical use and natural circumstances (e.g., natural coastline features). While this development may tend to provide greater access and possibly greater use value (including passive use value) for beaches,[14] this makes the Gold Coast (including its economy and coastal ecosystems) more vulnerable to erosion and looming climate change impacts. This outcome is reflected in the size and type of investment required to sustain its beaches. As shown in the expenditure results section above, the Gold Coast's expenditure is more than that of the Sunshine Coast in aggregate and tends to be more on a per resident basis.

20.4.2. *Policy prescriptions from nature's economy*

The impact of coastal storms on the Gold Coast through the late 1960s and early 1970s was increased as a result of weakened coastal foredune systems and a greater value of built infrastructure adjacent to the coastline. These events and the policy response established a process and management logic

[12]Unfortunately, the economy of nature is not always the best economy from a human point of view. This is not to deny that human's may in some cases use natural factors or elements to their advantage (Tisdell, CA, 2003, Pers. comm., 13 Jan).

[13]The Gold Coast has a number of remedial regulations to help deal with the historical development including set-back limits and in the requirement for developments to place any removed sand onto the beach.

[14]This is confirmed by the estimates provided in the Results section.

whereby beach management has been prioritised against the following hierarchy: protection; amenity; and environment. This remains the case today, where the preferred management policy of a seawall fronted by (artificial) dunes and a beach provides substantial benefits for coastal protection and recreational activities but lower environmental benefits.

However, reliance on a built beach environment provides a different quality of experience to beach users and this may be the differentiating feature of the two council's beach assets.[15] In prescribing policy, it appears that each council relies on nature's economy in a different way and this will provide them with different opportunities in the face of rising sea level and other adverse impacts associated with climate change. Because the Sunshine Coast's rate payer base and budget is less than that of the Gold Coast's ($582 m[16] in 2010–2011 versus $911 m[17]), and significant lengths of the coastline are not highly developed and contain substantial coastal setback lines, retreat may be a preferred option from an economic perspective, where the costs are less than the benefits. In contrast, for the Gold Coast, their level of historical built infrastructure in proximity to the coastline, indicates that they will have a reduced tendency to rely on natures' economy to manage climate change impacts.

However, there are similarities with the Gold Coast in parts of the Sunshine Coast, where particular 'pinch points' exist for Sunshine Coast beaches e.g., Caloundra, Mooloolaba, Alexandra Headland, Noosa Main Beach. In these cases, where the coast is also particularly vulnerable to sea level rise and significant man-made assets abut the coast, protection rather than retreat or 'accommodate' may be the preferred option.

Together these insights are particularly important in light of the recent Queensland State Government requirement for adaptation strategies to be developed for areas that are projected to become increasingly at risk from the impacts of coastal hazards (DERM, 2011). A better understanding of the how beaches are valued, managed and the costs of management, has an important bearing on current and future policy prescriptions.

[15]The length of sandy coastlines are similar across the two council areas; the Gold Coast's beaches extend for 37 km from Southport to Coolangatta and the Sunshine Coast's extend 45 km from Noosa Heads to Caloundra (Short, 2000, pp. 291, 324).
[16]Sunshine Coast Regional Council (2010, p. 1).
[17]Gold Coast City Council (2011, p. 12).

Table 20.9. Return on investment from beach expenditure.

		Gold Coast		Sunshine Coast	
Functional form	Variable	TP	TNB	TP	TNB
Recreational benefit (consumer surplus, $m)[a]	TCMIN	996	2,383	343	772
	TCTIM	5,576	14,185	2,914	7,128
Expenditure (operational and capital, $m)		21		11	
Recreation benefit/Expenditure (ratio:1)	TCMIN	47	113	30	67
	TCTIM	265	674	254	622

Notes and Sources: Recreational benefits from Table 20.7; Expenditures from Table 20.1. (a). The recreational benefits for visitors represent between 71% and 85% of the total recreational benefits for the Sunshine Coast, as calculated from the ratios in 20.6.

20.4.3. *Relative return from beach expenditure and policy prescriptions*

The estimates in Table 20.7 are significant. For example, the upper estimate of the gross value of beach recreation to residents and visitors on the Gold Coast is $14 billion (AUD), comparable to about 5% of gross regional product. This value includes the cost of time spent in travel in addition to car running costs and uses the preferred truncated negative binomial functional form for explaining visits to the beach. Where only fuel costs are included in travel, the lower estimate is 2.4 billion dollars (AUD), about one fifth of that estimated using the opportunity costs of travel time and the full costs of running a car.[18] For the Sunshine Coast using the preferred truncated negative binomial functional form, the gross recreation benefits range between three quarters of a billion where only fuel costs are included and seven billion dollars (AUD) where time and full running costs are included in the cost of travel. Where the truncated Poisson estimates are used, the benefits are considerably less but these are troubled by bias from overdispersion as discussed previously.

Table 20.9 takes the recreational benefits from Table 20.7 and the expenditures from Table 20.1 to estimate the return on investment from beach related expenditures. Compared to the capital and operational expenditure on beaches, the recreational benefits represent a ratio of returns

[18]This benefit is comparable to about 1% of regional product.

from 47:1 to 674:1 and 30:1 to 622:1 respectively for the Gold Coast and Sunshine Coasts, depending on whether the costs of travel time are included in travel costs.[19] A number of policy insights can be drawn from these returns:

- Compared to other forms of investment, such as stock and capital markets, these returns are significantly higher, even when using the lower bound benefit estimates.
- Further, these returns suggest that expenditure on beaches is worthwhile, assuming that few would exist in a desirable state or quality without the necessary work undertaken behind the scenes by councils (this may well include policies that allow beaches to naturally adjust to a retreating coastline).
- Budgets appear to be moderate compared to returns, and given the probable impacts associated with climate change, additional funding will be required to deal with the rise in water levels, increase in adverse weather events and changes in sea currents. The risk of these impacts combine to place increased uncertainty for councils in their ability to rely on nature's economy and large scale infrastructure projects to remedy the impending changes in our mobile coasts. There is much to be lost as indicated by these benefit estimates.

20.4.4. *Limitations and areas for future research*

The benefits presented here include only passive use recreation. These are only part of the total economic benefits delivered to society from the services that beaches and their management provide. There are also other indirect use-related benefits, such as protection of property and access areas for marine-related tourism (e.g., boating, fishing, paragliding, flyovers etc.) and option value (having the option to use a beach, while not currently visiting,

[19]The issue of travel time is hotly debated in the travel cost method literature e.g., Ward and Beale (2000). We believe given the richness of the Gold Coast dataset that some further analysis on the inclusion of travel time, and its effects on consumer surplus estimates is warranted. Travel time certainly helps to explain people's choice over the number of visits and sites to visit but the extent to which it should be included in the travel cost variable to estimate benefits (consumer surplus) is debateable.

may provide value to tourists and residents). Beaches and their management also provide benefits to non-users through their existence (knowing a beach exists rather without any intended use), bequest (providing a beach for future generations to enjoy), and vicarious value (seeing healthy beaches in various media, film, art etc.). Beaches and their management also provide a key ingredient to the social and ecological fabric of regions, the benefits of which can be categorised as above into use and non-use components. *Overall, the actual returns to society from beaches and their management are likely to be greater than what has been presented here.* Thus, an area for future research is to estimate the magnitude of non-use values associated with beaches in Australia which are expected to be significant compared to those from passive use recreation (Blackwell, 2003).

The recreational value here may also not include the full extent of benefits provided by the services delivered by councils. For example, we have included the costs of lifeguarding services on beaches, but we have not included any values for the benefits that these services provide beyond recreation. While estimates of the benefits for safe bathing facilities in Australia exist (e.g., Allen Consulting Group, 2005[20]; Blackwell and Tisdell, 2010), these need to be separated and aggregated for the Gold and Sunshine Coast beaches to provide a refined measure of the full extent of benefits provided by beaches and their management. Similar arguments can be made for other services such as beach cleaning.

The costs of lifeguarding services do not include a component for lifesaving, its clubs and overheads from regional, state and national centres. In addition, the value of the time contributed by volunteer lifesavers is significant and not included. To gain a better understanding of the extent of investment in lifesaving services, inclusion of these aspects[21] would shed light on the net return to society from investment and expenditure on beach services.

Further, there is a requirement to better understand the interaction between service categories provided on beaches and how these affect their own category benefits and those benefits of other categories. For example, while beach cleaning may improve some recreation values, the associated removal of wrack and other items reduces the non-use values associated with ecological components of the beach. Similarly, beach replenishment

[20]Surf Lifesaving Australia is due to release an updated version of this report.
[21]For example, by manipulating cost estimates from Allen Consulting Group (2005) or a subsequent version due from Surf Lifesaving Australia.

may improve property protection and values, however, it can be detrimental to the quality and extent of certain types of beach recreation.[22,23]

Lastly, we believe the inclusion of travel time, in estimating consumer surplus for the Gold and Sunshine coast councils is also in need of further analysis. While we are certain time plays an important role in human decision making, including visits to beaches, we need to be aware of its large impact when included in benefit estimates.

20.5. Conclusion

Beaches and foreshores are certainly essential to the economy and environment of the Gold and Sunshine Coasts. These councils spend large proportions of their budgets on beach related services such as protection works, beach maintenance and lifeguard services. What is confirmed by the analysis conducted in this chapter is that the expenditure by councils provides a significant return to society through beach recreation. In short, beaches are an exceptional investment.

Investment in man-made responses to erosion rather than nature's economy (through dunal protection, and set-back limits) limits the range of opportunities for addressing the impacts of climate change for the Gold Coast. However, the Gold Coast has made historically large infrastructure investments that will help 'defend' rather than 'retreat' or 'accommodate'. In contrast, the Sunshine Coast with a greater reliance on nature's economy, may be better positioned to take advantage of adaptation strategies at a lower cost than the Gold Coast and with greater environmental benefits. Because of these differences, the two councils provide an ideal comparison for developing and monitoring of adaptation responses to climate change and harnessing the economy that nature provides.

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[22]The reader is referred to the Gold Coast City Council Shoreline Management Plan (Lazarow *et al.*, 2008) for more information on both of these examples.

[23]In addition, a better educated and connected community may 'tread more lightly' on nature's economy, making the asset last longer and able to better withstand climate change impacts. Community education and connection helps grow an attachment to place that can often diminish when natural resources are diminished or lost.

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For Neil Lazarow, refer to *About the Author* in Chapter 17.

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PART VI

INTER-INDUSTRY FEATURES OF TOURISM, TOURISM SATELLITE ACCOUNTS

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Chapter 21

ESTIMATING TOURISM IMPACTS USING CGE MODELS: A HISTORICAL REVIEW AND FUTURE DEVELOPMENTS

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Abstract: The economic impacts of tourism have been estimated and evaluated via a range of different methodologies by researchers and policymakers for many decades. This chapter discusses research found in the tourism literature that has been undertaken using Computable General Equilibrium modelling. Initially, generic tourism booms and busts were modelled with this methodology before other areas of interest such as tourism and trade; tourism and taxation and disasters, (both man-made and natural) and their impacts on tourism were modelled. The economic impact of special events such as the FIFA World Cup and the Olympics are another branch of research that has received significant attention by tourism economists implementing CGE models. After an evaluation of the main contributions in this area, this review highlights future directions of tourism and inter-industry modelling (such as the integration of environmental and energy accounts) with conventional tourism economic impacts to explore sustainable tourism economic impacts.

Keywords: Computable general equilibrium models; economic impacts; environmental and energy accounts; input–output analysis; inter-industry modelling.

21.1. Introduction

Economic impacts have been estimated and evaluated via a range of different methodologies by researchers and policy-makers for many decades. Estimating economic impacts of policy decisions, shocks or events is grounded, not surprisingly, in economic theory. The traditional way to investigate the economic impact of tourism on an economy is through an Input–Output model. While this type of analysis is of some benefit, more sophisticated techniques which are better able to represent a real economy, are now available. To keep

using IO analysis to estimate tourism impacts would not take advantage of the advances in economic modelling. It may lead to bias in reporting all possible economic impacts.

Computable General Equilibrium (CGE) models (also referred to as Applied General Equilibrium Models) are now starting to be used to estimate economic impacts on an economy in a tourism context. CGE modelling has been used extensively in other areas of economic policy inquiry, yet it is still somewhat under-utilised when examining tourism impacts.

The chapter is set out as follows: Section 21.2 evaluates the research to date on the economic impacts of tourism estimated using CGE models. Section 21.3 points out where future developments in CGE modelling of tourism's economic impacts can be made and Sec. 21.4 concludes with a call to cease the debate about Input–Output versus CGE modelling and intelligently address research questions using the appropriate methodology and 'catch up' with the other economic literature.

21.2. Review of Applied CGE Modelling

Over the last three decades, with the increasing power and reliability of microcomputers and the development of sophisticated software, CGE models have been widely used in empirical economic policy analysis for developed and, increasingly, for developing countries.

It is only more recently that CGE modelling has also been undertaken specifically in the area of tourism. Adams and Parmenter (1992a, 1992b, 1995) first modelled the impact of tourism on the Australian economy. Since then, several authors have used CGE models to determine the effects of international tourism on Australia (Madden and Thapa, 2000; Skene, 1993a, 1993b) and the rest of the world: USA (Blake and Sinclair, 2002), Hawaii (Zhou *et al.*, 1997), Spain (Blake, 2000) and the UK (Blake *et al.*, 2001). A list of the CGE models applicable to tourism are presented in Table 21.1. As can be seen in the table, tourism impact studies have been carried out using CGE models in a variety of contexts. A variety of issues have been investigated and are reviewed below.

21.2.1. *Generic tourism booms and busts*

Simulations using CGE models to estimate the economic impact of tourism have covered a range of different scenarios and policy possibilities. As such, these simulations could be categorised in a number of ways. The first category type examines tourism booms or adverse shocks. That is, a stylised increase or decrease in tourism demand, for example of 10%. Economic

Table 21.1. 36 Applications to 18 economies.

Study	Economy	Authors	Research Focus
1	Australia	Adams and Parmenter (1992a, 1992b, 1995)	Generic Tourism Boom
2	Australia	Dwyer *et al.* (2003)	Generic Tourism Boom in NSW economy
3		Dwyer *et al.* (2006)	Impact of SARs and Iraq War on Australian economy
4	Australia	Dwyer *et al.* (2005)	Qantas Australian Grand Prix 2000
5	Australia	Dwyer *et al.* (2007)	Comparison of TSAs and CGE results for different tourism segments
6	Australia	Dwyer *et al.* (2007)	Yield measurements for different market segments in Australia
7	Australia	Econtech (2001)	September 11 Attacks and Ansett Airline Collapse
8	Balearics, Spain	Polo and Valle (2008)	Generic Tourism Bust — IO and CGE Comparison
9	Brazil	Blake *et al.* (2008)	Tourism and poverty
10	China	Li and Blake (2009)	2008 Beijing Olympics
11	China	Li *et al.* (2010)	Impact of Global Financial Crisis on China
12	China	Li and Blake (2009)	2008 Beijing Olympics-related investment and expenditure
13	Cyprus	Blake *et al.* (2003)	Tourism and Trade: Accession to the EU
14	Fiji	Narayan (2003)	Impact of 2003 South Pacific Games in Fiji
15	Fiji	Narayan (2004)	Generic tourism boom
16	Fiji	Pratt (2011b)	Devaluation of the Fiji dollar
17	Florida, USA	Zhang and Lee (2007)	Impact of September 11 attacks on wildlife recreational activity in Florida
18	Hawaii, USA	Zhou *et al.* (1997);	Generic Tourism Boom — IO and CGE Comparison
19	Hawaii, USA	Kim and Konan (2004)	Infrastructure demand water (electricity, utility gas, solid waste disposal, and petroleum)
20	Hawaii, USA	Pratt and Blake (2009)	Hawaii's cruise industry
21	Hawaii, USA	Pratt (2011a)	Impacts across the Tourism Area Life Cycle
22	Indonesia	Sugiyarto *et al.* (2003)	Tourism and trade

(*Continued*)

Table 21.1. (*Continued*)

Study	Economy	Authors	Research Focus
23	Indonesia	Pambudi *et al.* (2009)	Impact of Bali bombing on the Indonesian economy
24	South Korea	Lee *et al.* (2010)	Impact of September 11 attacks and the 2002 FIFA World Cup on the South Korean economy
25	Malta	Blake *et al.* (2003)	Tourism and trade: Accession to the EU
26	Mauritius	Gooroochurn and Milner (2004)	Tourism and tax
27	Mauritius	Gooroochurn and Sinclair (2005)	Tourism and tax
28	Scotland	Blake *et al.* (2006)	Integration with econometric forecasts of tourist arrivals and expenditure in different countries
29	Scotland	Yeoman *et al.* (2007)	Tourism and Energy/Oil
30	South Africa	Bohlmann and van Heerden (2005)	Investment for the 2010 FIFA World Cup on the South Africa economy
31	Spain	Blake (2000)	Generic tourism boom; Tourism and tax
32	Thailand	Wattanakuljarus (2005)	Economic and environmental impacts of tourism in Thailand
33	UK	Blake (2005)	Impact of the 2012 London Olympics
34	UK	Blake *et al.* (2003)	Impact of foot and mouth disease on the UK economy
35	USA	Blake and Sinclair (2003)	Impact of September 11 Terrorist Attacks
36	USA	Blake *et al.* (2001)	IO and CGE Comparison

impacts are then estimated, examining the post-simulation economy compared to the base line economy.

Reviewing the 'generic tourism boom' studies, while some of the specifics differ, the general findings are that an increase in tourism demand leads to an appreciation in the exchange rate, which leads to import substitution and the contraction of the traditional export sectors of mining and agriculture. This, together with the high import content of the tourism sector, leads to a worsening of the balance of trade. On the other hand, the tourism expansion helps to reduce the debt/GDP ratio. Adams and Parmenter (1995) find

that on an economy-wide basis, real GDP increases by 0.4%. Analysis on a regional level highlights interesting distributional effects of the simulated tourism boom. Queensland, the Australian State which is more oriented towards servicing overseas tourists than the other states, was a net loser from an economy-wide expansion of tourism. While there were strong 'first-round' effects for Queensland, this state was relatively hard hit by the crowding out of traditional export activities. Victoria, another Australian State, which does not rely heavily on traditional exports but has a large international airport, was found to have the most to gain from a 10% annual increase in tourism its gross state product (GSP) increases by 6.4%.

Blake (2000) undertakes a simulation of a 10% increase in tourism for Spain as well as analysing the effects of tourism taxes. He found that national welfare increases by 0.05% of GDP, with a 0.61% appreciation of the real exchange rate, and that there are small increases in real private consumption, domestic tourism and investment. He further found that reductions in the value of non-tourism exports and increases in imports offset the increased revenues from tourism.

Another tourism economic impact study that simulates a ten percent increase in tourism expenditures is Narayan's Fijian model (Narayan, 2004). A simulated ten percent increase in tourist expenditure results in an increase in total exports (1.7%) which outweighs the increase in total imports (1.1%), resulting in an improvement in the balance of payments. The additional tourism expenditure is estimated to have a positive impact on real GDP, which will grow by 0.5%, and the resultant increase in wages will contribute to a 1.9% increase in private disposable incomes leading to an increase in national welfare of 0.7%. Fiji's traditional export sectors of kava and fish and in manufacturing, including processed food, are expected to fall. This can be attributed to the fact that additional tourist expenditures induces a real appreciation of the exchange rate so the associated increases in domestic prices of goods and services and wage rates relative to foreign prices decrease Fiji's international competitiveness, especially for the traditional export sectors. This result has been noted by other researchers who model a tourist boom (Adams and Parmenter, 1992a, 1992b, 1995; Blake *et al.*, 2001; Zhou *et al.*, 1997).

Dwyer *et al.* (2003) employ a multi-regional general equilibrium model to estimate the effects of increased tourism on the economy of New South Wales and the rest of Australia. Simulations were undertaken of the effects of an increase of 10% in world, interstate and intrastate tourism on the economy of New South Wales focussing on the assumptions that generate maximum impacts. The impacts from intrastate markets depend on the extent to which

intrastate tourism is substituted for tourism in the rest of Australia. Not surprisingly, international tourists generate the largest GDP and employment from an Australia-wide perspective as these represent net injections into the economy whereas for domestic tourists there is a degree of substitution between consumption in non-tourism goods and services.

Blake *et al.* (2008) simulate a 10% increase in tourism demand by foreign tourists to Brazil to study the economic impacts and distributional effects of tourism expenditure. The results show that tourism benefits the lowest-income sections of the Brazilian population and has the potential to reduce income inequality. The welfare gain to Brazil is \$0.45 for every \$1 unit of additional spending. Yet the lowest-income households are not the main beneficiaries of an international tourism increase as next-to-low income households benefit to a greater degree due to earning and price channel effects of tourism expansion.

Several pieces of research have attempted to compare and contrast the results from IO analysis and a CGE model using the same IO table. These studies have compared the same simulated scenario using both an IO model and a CGE model with the same set of data. Used as a way of comparing the differing methods of analysis, studies of this nature have begun to highlight the advantages of CGE modelling over IO modelling. One such study was conducted by Zhou *et al.* (1997), who simulate a 10% decrease in visitor spending in Hawaii using both a CGE model and an IO model. They find, not surprisingly, that output is reduced in the tourism-oriented sectors such as hotels, transportation and restaurants and bars more than in other sectors in the economy for both models. While output changes are generally of the same order of magnitude for each sector, the IO model results are larger in terms of percentage reductions. This, it is argued, is due the generated price effects in the CGE model (that are absent from the IO model). The CGE model allows for resource reallocation between sectors and allows greater modelling flexibility. It is deemed to have clear advantages over IO modelling for tourism. Polo and Valle (2008) conduct a similar analysis (a 10% reduction in tourist expenditures) for the Balearic economy using an IO model, a Social Accounting Matrix (SAM) model and a CGE model. The results in their paper reinforce the findings of Zhou *et al.* (1997).

21.2.2. *Tourism and disasters*

Estimating the economic impact of disasters, both natural and man-made has been the focus of a significant amount of research using CGE modelling. For example, Blake and Sinclair analyse the impacts of September 11 on the

US economy (Blake and Sinclair, 2003). The September 11 study analyses not only the effects of the downturn in tourism but simulates the potential and actual policy responses to the crisis.

Blake and Sinclair categorise these policy responses in two ways. The first category involves policies of relatively low cost aimed at restoring confidence and increasing liquidity, such as the provision of credit or loans, low cost tax allowances and measures to limit the liability of businesses to acts of terrorism. The second category involves significant costs such as expenditure on compensation to airlines and measures to increase airline safety. As to the economic impact of this event, without any offsetting policy responses, the fall in tourism expenditures reduces Gross Domestic Product (GDP) by almost US$30 billion. With the implementation of these policies, the figure reduces to under US$10 billion.

For the same tourism shock (September 11 terrorist attacks), Econtech, an independent economic consulting firm, estimated the economic effects on the Australian economy (Econtech, 2001). Around the same time of the attacks, Ansett Airlines, Australia's second domestic airline collapsed, reducing the capacity of the domestic aviation industry in Australia. Both these events are modelled separately and in combination using a CGE model. The combined effects of these two simulations were estimated to incur a loss of travel exports of about 15% (A$500 million); a loss of transport GDP of about 3% (A$210 million); a loss of accommodation, cafes and restaurants GDP of about 4% (A$140 million); an overall GDP decrease of 0.6% (A$1 billion) and an employmenent decrease of 0.3% (28,000 jobs). The effects were forecast to be temporary in nature, gradually fading away over the subsequent two years.

Another act of terror and its impact on tourism is the focus of a paper by Pambudi *et al.* (2009). These researchers employ a multi-regional CGE model of the Indonesian economy to estimate the short-run effect of a decline in tourism following the 2002 Bali bombings on the Indonesian economy. Not surprisingly, the location of the attack, Bali, is worst affected by the negative shock followed by other popular tourist destinations, such as Jakarta and Yogyakarta. Within Bali, the tourism-related and non-tradable sectors contain the worst affected industries while export-oriented industries, such as textiles, clothing and footwear, and import competing industries, such as machinery and electronics expand.

Dwyer *et al.* (2006) explore the economic effects of the tourism crises of the Iraq War and SARS in 2003 on the Australian economy. They recognise that, while these events resulted in less inbound tourism, they also resulted in less outbound tourism so that the net effect on Australia was not as severe

as it might have been and depends to a certain extent on where the cancelled or postponed outbound travel is allocated to savings, domestic tourism or other non-tourism consumption.

More recently, Li *et al.* (2010) model the impact of the 2008 Global Financial Crisis on China's tourism. The paper looks at the extent that domestic tourism can offset the slowdown in international tourism associated with the global financial crisis. The research designs two scenarios for 2010: pessimistic and optimistic scenarios. Simulations for 2011 and 2012 reveal that China's tourism will recover and then contribute positively to the local economy from 2012. However, the increase in domestic tourism will only partially offset the downturn in international tourism.

The economic impact of Foot and Mouth Disease on the UK economy and its implications for tourism is modelled by Blake and Sinclair using a CGE model. The authors show that Foot and Mouth Disease (FMD) has considerable effects not only on agricultural production and farming industries but also on the tourism sector due to the inter-sectoral linkages and the effects of the ways in which the UK government handled the outbreak. The results show that total tourism revenue in 2001 fell by almost £7.5 billion, which reduced GDP in 2001 by £1.93 billion as a direct result of tourism expenditure reductions. The total fall in GDP due to the FMD crisis for 2001 was £2.5 billion (around 0.3% of GDP). The fact that the fall in GDP is less than a quarter of the drop in tourism expenditures is due to 'crowding in' — the opposite effect of the more familiar 'crowding out' phenomenon. Labour and capital that was previously employed in industries satisfying tourism demand have substituted away to other forms of production. Blake and Sinclair argue that the imposition of 'restricted areas' that include historic sites and tourist attractions, closed countryside walking paths and waterways, and cancelled or postponed sports and public events had a larger impact on tourism than agriculture during the crisis.

21.2.3. *Tourism and trade*

The issue of globalisation (trade) and tourism is investigated in the context of the Indonesian economy by Sugiyarto *et al.* (2003). A CGE model of the Indonesian economy is developed to examine the effects of globalisation, specifically tariff reductions as a stand-alone policy and in conjunction with tourism growth. Tourism is a key sector for the Indonesian economy with the number of foreign visitor arrivals in 2005 estimated to be around 11 million, generating export receipts of US$15 billion. Three different scenarios as well as a combination of the scenarios are modelled. 'Partial globalisation' is

represented through a 20% reduction in the tariffs on imported commodities. 'Far-reaching globalisation' is modelled through the previously mentioned tariff cuts as well as a 20% reduction in indirect taxation levied on domestic commodities. The increase in demand by foreign tourists is set at 10%.

The analysis concluded that the increase in foreign tourism demand will increase output (GDP increases by 0.1%) and employment (increases by 0.2%). When tourism growth is combined with increased globalisation, foreign tourism growth amplifies the positive effects of globalisation and, simultaneously reduces its adverse effects. The levels of GDP and employment are higher and, while the trade balance is in deficit, the deficit is lower than in the case of trade and tax liberalisation without tourism growth. The balance of payments deficit is also in a better position, owing to the increased income from foreign tourism.

Another economic impact study relating primarily to trade involves the CGE models of the Maltese and Cypriot economies and the impact of their accession to the European Union (EU) (Blake *et al.*, 2003). Nine effects of accession were simulated individually and as a collective. These effects were simulated for both the short-run and the long-run through varying the elasticity values in the models with long-run elasticities generally higher than the short-run model, because production technologies can be replaced over a long period of time. Overall, EU accession was found to be unambiguously and significantly beneficial to both the Maltese and Cypriot economies. In Malta, GDP will increase by almost 4% in the long-run because of accession. The welfare benefits of accession are 14% of incomes. In Cyprus, GDP is estimated to increase by almost 3.5% in the long-run because of accession with welfare increasing by 6.2% of incomes. In terms of the impact on tourism, the effects of accession on tourism in Malta are negative but positive in Cyprus. The explanation for this is that the greater effects from trade and funding allocations lead to greater demand for factors of production in Malta that increase wages and divert resources away from tourism. In Cyprus, effects that benefit tourism outweigh the other general equilibrium trade-off effects.

21.2.4. *Tourism and tax*

In the area of tourism tax, Blake (2000) examined the marginal impact of taxation across the whole Spanish economy and found that in Spain tourism and travel is relatively under-taxed compared to other sectors, mainly as a result of the large subsidies given to transportation sectors. Differences exist in the tax regime based on whether tourism is domestic or foreign in origin. Foreign tourism activities in Spain are highly taxed, relative to other

sectors, but domestic activities are subsidised due to the lower rates of tax on tourism and the subsidised domestic travel. Blake is able to show that raising the levels of taxation on foreign tourism may increase welfare because taxing foreign tourism effectively reduces some of the distortions created by the low levels of tax on domestic tourism.

Tourism tax is also the subject of research conducted for the Mauritian economy (Gooroochurn and Milner, 2004; Gooroochurn and Sinclair, 2005). Gooroochurn and Milner examine the effects of the reform of the current structure of indirect taxes in Mauritius, using a CGE model to explore the relative efficiency of changing rates of indirect taxation on tourist and non-tourist related sectors. The main finding is that for all simulated tax reforms, the tourism sectors are shown to be currently under-taxed. The authors find that the Marginal Excess Burden (MEB), the additional welfare cost of raising extra revenues from an already existing tax while holding other taxes constant, is lower for sales tax simulations than for the production tax simulations, for all sectors.

The results found by Gooroochurn and Milner (2004) are confirmed and extended by Gooroochurn and Sinclair (2005). Tourism taxes can increase domestic welfare since international tourists bear most of the welfare loss associated with the higher revenue. The two main tourism sectors (restaurants/hotels and transport/communications) have the highest MEB, resulting from the monopoly power associated with the differentiated tourism products, that is, tourist destinations and attractions are differentiated in terms of types and quality by destination.

21.2.5. *Tourism and the environment*

The issue of sustainable tourism has grown as a research interest in recent years. Tourism and its impact on the environment has been the focus of several studies. Wattanakuljarus (2005) applied a CGE model of Thailand to look at the nationwide economic and environmental impacts of tourism. The expansion of tourism had predictable effects; an increase in real GDP, improvement in the current account deficit, an increase in the domestic inflation rate and an appreciation in the real exchange rate; but the tourism expansion resulted in extra water usage, relatively more piped water for non-agriculture sectors than for irrigated water for agriculture. Hence, net piped water usage and net wastewater discharges from the manufacturing sectors are higher than they otherwise would have been.

The issue of tourism and infrastructure demand has been examined by Kim and Konan (2004), contributing to the literature in the area of

sustainable development. This research examines alternative scenarios for population growth and visitor spending in Hawaii in terms of the economic impact on urban infrastructure services (such as water, electricity, solid waste). The results are then projected into the future taking into account population, labour force and visitor expenditure growth rates (estimated exogenously from the CGE model). The key findings from this research include the result that economic activity and the resulting environmental consequences generated by residents are far greater than those generated by visitors. The impact of population growth is much more significant than visitor spending. This is a case where volume exceeds value, for while visitors consume more resources on a per day basis, there are approximately ten times the number of Hawaii residents as visitors present in Hawaii on any given day. These findings contrast with Tabatchnaia-Tamirisa *et al.* (1997) who estimated the derived demand for a primary input (energy) using input–output analysis and found that tourists account for a significant share (averaging 60%) of total energy and fuel use in Hawaii.

Yeoman *et al.* (2007) consider the relationship of oil and the global economy and its relationship to Scottish tourism. Two scenarios are modelled. The first scenario, labelled 'energy inflation', includes a 500% increase in the price of oil, 300% increase in gas prices, 200% increase in electricity prices, all over 10 years and a 10% drop in capacity in Scottish petroleum due to falling oil reserves. The second scenario, labelled 'paying for climate change', includes a 250% increase in oil prices, 100% increase in gas and electricity prices, 20% sales tax (VAT) for the economy, 20% subsidy on rail transport and the same failing oil reserves assumption as the first scenario. At a macro level, the economic impact on overnight tourism is £1.3 billion for the 'energy inflation' scenario and £1 billion for the 'paying for climate change' scenario, reducing the growth rate for tourism from a 50% base line assumption to 28% in the first scenario and 22% in the second scenario.

21.2.6. *Tourism and special events*

It is now commonplace to conduct an economic impact study in conjunction with the bidding for sporting events (or other special events) to estimate the economic stimulus from the one-off event. The undertaking of an economic impact study can often be done to justify the governments' generous funding incentives and increased spending on event infrastructure. The general consensus is that hosting one-off games or international events brings social and economic benefits to a nation or region and hence, these events are now highly sought after in many countries and regions internationally.

Seven examples of economic impact studies appearing in recent literature using CGE models are the Australian Grand Prix 2000 (Dwyer *et al.*, 2005), the 2000 Sydney Olympics (Madden, 2002), the 2002 FIFA World Cup held in South Korea (Lee *et al.*, 2010), the 2003 South Pacific Games hosted by the Fiji Islands (Narayan, 2003), the 2010 FIFA World Cup held in South Africa (Bohlmann and van Heerden, 2005), the 2008 Beijing Olympics (Li and Blake, 2009; Li *et al.*, 2011) and the 2012 London Olympics (Blake, 2005).

Dwyer *et al.* (2006) show how CGE models can be adapted to estimate the displacement effects of events, their fiscal impacts, intraregional effects, event subsidies, and multistate effects — all of which are factors to consider when assessing the economic impact of events. In general, the hosting of these large one-off events generates additional economic activity, bringing with it additional tourism.

Madden (2002) assesses the economic impact of the Sydney Olympics on the New South Wales (NSW) and Australian economy. The effects of Olympics construction and operating expenditure and of spending by Games visitors and additional tourists are modelled over a 12 year period, under specific assumptions regarding the Australian labour market, capital supply constraints and Australian government policy on foreign debt. For the tourism simulation, the number of international visitors associated with the Olympics is 1.6 million over an eight-year period; 132,000 being Games and Games-related, the remaining 1.5 million being additional tourists visiting Australia as a result of the promotional effect of the Games. Extra tourism export receipts are estimated to be just over A$2.9 billion as a result of the Olympics with over A$2.7 billion being the induced effect. The macroeconomic effects of the Games include an estimated increase of almost A$490 million in NSW Gross State Product in an average year over the 12 years ending in 2005/06. Cumulatively, this has a present value of A$5.1 billion. Nationally, the present value impact of the Olympics on GDP was estimated at A$6.5 billion (0.12% on average over the 12 years). Hence, a large majority of the economic impact remained in the host state of NSW. Only around 40% of the increase in GSP comprised an increase in real household consumption. Most of the Olympics-induced increase in GSP/GDP went into increased investment and foreign borrowing for capital expenditures.

Lee *et al.* (2010) attempt to disentangle the effects on the South Korean economy of the 9/11 terrorist attacks from the short-run effects of hosting the 2002 World Cup. The CGE methodology is able to provide this sort of analysis, separating out the economic impacts of two events that occur

close in time. The authors find that the terrorist attacks of 9/11 had larger negative effects on the South Korean economy than the positive effects of the 2002 FIFA World Cup.

Narayan (2003) simulates the impact from the South Pacific Games on the Fijian economy of 10,000 additional visitors. These additional visitors comprise 5,000 participants and officials and 5,000 spectators from outside Fiji. The simulation reveals a 0.4% increase in GDP with the increase in exports (1.2%) outweighing the increase in total imports (0.9%) leading to a balance of payments surplus. Again, an injection of tourism receipts brings about an appreciation of the exchange rate, coupled with increasing domestic prices and wages, the traditional export sectors experience a decline, leading to declining exports. Yet the decline in the traditional export sector is more than offset by the increase in tourism and non-traditional exports.

The 2008 Beijing Olympics has been the foci of two studies, one by Li and Blake (2009) and the other by Li *et al.* (2011). Li and Blake (2009) develop a framework for separating impacts according to whether they occur before, during or after the event itself. They report that the economic impacts of such events can have very different distributional effects between the host city and the rest of an economy, and can have opposite signs. Li *et al.* (2011) estimate the economic impact of 2008 Beijing Olympics by examining the net injection of the difference between international tourism spending with and without holding the Beijing Olympics, including only those visitors whose main purpose was to attend the Being Olympics.

Bohlmann and van Heerden (2005) examine the impact of the pre-event phase expenditure attributable to the hosting of the 2010 FIFA World Cup on the South African economy. This phase is mainly geared towards the construction and improvement of infrastructure required to successfully host the event. The simulated shock to the capital stock in the construction and transport industries and a capital-augmenting technological change in these same industries is estimated to have a positive impact on most macroeconomic variables, including GDP and employment.

Blake (2005) examines the economic benefits and costs of hosting the 2012 Summer Olympics using a dynamic CGE model of the UK and London economies over a period of 12 years: 2005–2016. As a result of London hosting the 2012 Olympics, the total net UK GDP change is £1.9 billion. This impact can be separated into a pre-Games impact, during-Games impact and post-Games impact. The main GDP gain occurs in the Games year, 2012 (£1,067 million), with larger gains occurring in the post-Games period (£622 million) than the pre-Games period (£248 million). For the city of

London itself, there will be a larger impact on GDP, with £925 million additional GDP in 2012, £3,362 million in the pre-Games period and £1,613 extra GDP post-Games. The regional impacts are larger than the national impacts for several reasons: Spending in London by non-London UK residents visiting for the Games and the movement of the labour and capital to the capital as higher wages and lottery funding attract workers and money to London.

Several key issues arise for these economic impact studies on sporting events (or cultural events). Firstly, even for an event as large and complex as the Olympics Games, the overall economic impact is quite small (Madden, 2002). The overall estimated impact on Australian GDP is that it would be 0.12% higher over the 12 years than if the 2000 Games had not been held in Sydney. For the 2012 London Olympics, the total economy-wide impact for the UK over the 2005–2016 period is only 0.12% of total UK GDP at 2004 prices. It is important not to make over-optimistic projections of the effects of mega-events. Secondly, there are a large number of smaller sporting and cultural events. Typically, event organisers tend to expect their events to be economic boons. While at a regional level, these events can boost the local economy; on a national level the events tend to attract resources to these activities, away from other activities. Li *et al.* (2011) also highlight the issue that while many *ex ante* predictions of special events are estimated to be positive, the economic impact of many of these special events are negative in the *ex post* estimation. In the case of the 2008 Beijing Olympics, Li, Blake and Cooper attribute this to the restrictions on visa rules due to Olympic security needs, which counteracted and exceeded the positive aspect.

21.2.7. *Tourism and market segments*

Several CGE models have been implemented to examine the economic impact of particular segments. Zhang and Lee (2007) look at the impact of the terrorist attacks of September 11, 2001 on wildlife recreational activity in Florida, USA. In 2001, wildlife recreation activities generated $US5.8 billion in direct expenditure for the Florida economy, with out-of-state visitors contributing US$1.2 billion. Using a state-level dynamic CGE model, Zhang and Lee estimate that the cumulative decline in Gross State Product from 2001 to 2010 is between US$1 billion and US$8 billion depending on the assumed speed of recovery. These losses are for only one part of the recreation sector, and while many other sectors were impacted as a result of 9/11, these were not included in the analysis.

Hawaii's cruise industry is the subject of research by Pratt and Blake (2009). Using the 2002 inter-county input–output table as the benchmark data, the multi-region CGE model takes the direct expenditure of cruise passengers, expenditure by cruise crews and the direct expenditure of cruise lines as the simulations into the model. The research estimates that the cruise industry generates between US$68 million and US$86 million of additional revenue to the economy of Hawaii, depending on assumptions made regarding the mobility of labour and capital. The greater the substitutability between labour and capital, the lower the estimated benefits. Further, the county of Honolulu is estimated to receive the largest benefits, compared to the other three counties in the state of Hawaii for two reasons — first, it is the largest economy in the state and second, the international airport is located there so many of the fly-cruise or cruise-fly passengers transit through Honolulu.

21.3. Future Developments

Section 21.2 outlines many of the applied CGE models that can be found in the tourism literature to date. However, as more tourism economists apply CGE models rather than IO models, so CGE modellers need to address some of the criticisms of the modelling and become more sophisticated in its use. This section notes several ways that this can be achieved.

21.3.1. *Sensitivity analysis*

One of the main limitations of CGE models in general is the dependence of the results on the estimated values of key parameters (Blake *et al.*, 2006). This limitation means that it is difficult to choose appropriate elasticity and other parameter values. Very rarely are the elasticities to be used in the specific CGE model estimated econometrically for the same economy for the same time period (Shoven and Whalley, 1984). Hence it is prudent to conduct sensitivity analyses with regard to the value of the elasticities used in the models. Despite this, sensitivity analysis is the exception rather than the rule.

To determine how sensitive his findings are, Blake (2000) undertakes a limited sensitivity analysis where, for the six elasticities in the model, the parameters are doubled in value. Blake concludes that the results are reasonably insensitive to changes in these elasticity values. Sugiyarto *et al.* (2003) and Li *et al.* (2011) conduct a similar sensitivity analyses to test the robustness of their results. Blake *et al.* (2003) add further analytical rigour to the Malta and Cyprus EU Accession research by implementing a

systematic sensitivity analysis with regard to elasticity parameters, where a 'Monte Carlo' procedure was used to construct a range around the central estimate of the parameters used in the main model and 100 simulations were conducted. A recent paper by Pratt (2011b) also conducts a systematic sensitivity analysis of elasticities.

21.3.2. *Dynamics*

Most of the studies reviewed are solely static in nature. In many of the papers outlined, some elements of a time dynamic occur. However, the dynamic element is essentially practical and not based on the existence of intertemporal individual profit or utility functions but instead built around the adoption of greater values for production elasticities (Blake *et al.*, 2003), internal mobility of capital (Blake *et al.*, 2003; Zhou *et al.*, 1997) or exogenous changes in pre-determined variables such as population or visitor growth rates (Kim and Konan, 2004).

When the research questions involves understanding the adjustment path and involves issues related to capital and investment, then dynamic CGE models are a more appropriate tool to use. Blake (2009) demonstrates the economic impact of an additional £1 billion of tourism expenditure into the UK economy using three different dynamic scenarios. Dynamic modelling allows economic agents to foresee what will happen in the future, which not only affects behaviour following the shock but also affects behaviour leading up to the shock. Blake shows that unanticipated shocks differ significantly from anticipated shocks. Of the studies cited above, Zhang and Lee (2007) and Lee *et al.* (2010) use an intertemporal model to explain their results.

21.3.3. *Other developments*

Apart from the areas of research discussed above, which could be expanded and built upon, there are other areas and methodological advances that could be used by tourism economists. For example in the area of infrastructure, additional tourism will make use of public infrastructure, such as roads, imposing costs in providing and maintaining it (Kim *et al.*, 2004). Other extensions pertaining to this area include congestion costs, environmental damage, and positive externalities from tourism such as gains from economies of density, for example more frequent flights between cities as a result of additional tourism. Ferguson *et al.* (2005) incorporate sustainability indicators into a CGE model of the Scottish economy. Conventional CGE modelling does not incorporate the costs of environmental degradation or loss of scenic attractions that are valued for their contribution to their

standard of living, but do not appear in the industry cost of production. In principle, these issues could be included in a CGE model. Dwyer *et al.* (2000) suggest that the CGE model output could then be utilised for cost-benefit analyses of such issues.

Blake *et al.* (2008) examined the extent to which tourism is pro-poor in Brazil but more work needs to be completed in this area, especially in developing countries. One common way to assess economic impacts relating to poverty is via a CGE macro-microsimulation analysis (Vos and De Jong, 2003; Cogneau and Robilliard, 2000; Reimer, 2002). This technique usually involves using a CGE model to disentangle the general equilibrium effects of different policy scenarios on sector output, employment, factor incomes and household consumption. The microsimulation approach then uses the 'macro' simulation results of the CGE model and examines these in the context of job status and remuneration of individual workers and hence, household income distribution and poverty via household survey data. To date, this has not been attempted for any tourism studies.

Tourism economic impact research needs to become more creative, incorporating other data and meshing it with input-output tables and tourism satellite accounts. For example, Pratt (2011a) examines the economic impact of tourism across the tourism area life cycle for the economy of Hawaii. He finds that the size of tourism's economic contribution is dependent on the import propensity of tourists' spending as well as the import propensities of tourism-oriented sectors and their backward and forward linkages while the CGE model highlights the fact that welfare is maximised at the zenith of tourism growth, with the transportation sector being the driving industry for growth.

21.4. Conclusions

In the empirical context, CGE models investigate the consequences of an expansion in tourism demand which results in the increased use of resources. Increases in prices attract resources into the tourism-related sectors, increasing the industries' costs and making the destination less competitive. The size of these increased costs depends on the supply of the factors of production and what proportion of the tourism-related industries' total production costs are accounted for by these factors. In the case where resources are drawn away from traditional export-oriented industries, increased production costs occur for these industries resulting in a loss of production and employment. If tourism growth increases investment, then pressure is exerted on the real exchange rate, increasing the feedback effects for the

period of capital inflow (Dwyer *et al.*, 2000). If tax increases or borrowing is used to finance any increased government consumption associated with tourism growth, then private consumption may be crowded out, limiting the positive effects on income and employment. The impacts outlined here can be simulated in CGE models but cannot be taken into account in IO models.

Despite the clear advantages of CGE modelling over IO modelling, several objections to CGE models remain. Dwyer *et al.* (2004) outline both the objections and respond to the objections. When CGE models first started to be introduced into the literature, it was argued they were too time consuming to build and too complicated to use. In response to this, it should be noted that increasingly powerful personal computers and faster algorithms are now available. Moreover, much of the time needed to build the model can be due to the construction of the underlying IO table or SAM, which are used in both model methodologies. Further, the issue of a more realistic model should outweigh convenience.

Another line of argument is that CGE modelling and IO modelling produce very similar output so the additional complexity of CGE modelling is unjustified. However, as shown above with the comparative studies, the results can be very different. It can be true that if CGE modelling is specified with the same restrictive assumptions as an IO model, then the results may be similar but with more plausible assumptions, which recognise resource constraints and the ways in which the labour market works, IO models and CGE models will typically give very different results.

For analysing local impacts, though, there may be an argument for using IO modelling over CGE modelling. So if the research objective is to examine the economic impacts of a local event or project on the local area, then a local IO analysis could be undertaken. The reason for this is that the IO assumption of freely available resources is closer to reality in the local case, as labour and capital can flow into the area from other areas and the change in quantities supplied and demanded at the local level will not impact prices.

Tourism economists need to use the most appropriate methodology available. Additionally, CGE modellers need to address important policy questions and move beyond the standard CGE models and embrace some of the techniques used in the mainstream economics literature.

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Chapter 22

TOURISM SATELLITE ACCOUNTS AND THEIR APPLICATIONS IN CGE MODELLING

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Abstract: Two important tools employed increasingly by tourism economists to enhance our knowledge of the economic significance of tourism are Tourism Satellite Accounts (TSAs) and Computable General Equilibrium (CGE) models. But the relationship between the two is often not fully understood by tourism stakeholders. The chapter first outlines the nature and importance of TSAs as a measure of the economic contribution of tourism to an economy. TSAs based estimates of the direct contribution of tourism in Australia are provided to illustrate the use of this tool. The chapter then discusses the importance of developing TSAs at the regional level and the approaches that can be employed (bottom up, top down, mixed), as well as the limitations of TSAs as a policy instrument. It then discusses CGE modelling as a tool of economic impact analysis providing CGE based estimates of the economic impacts of increased inbound tourism to Queensland to illustrate the use of this technique. The analysis is expected to enhance stakeholder's understanding of the separate roles that TSAs and CGE modelling can play in determining the economic significance of tourism to an economy.

Keywords: Australian tourism; computable general; economic contribution; equilibrium models; tourism satellite accounts.

22.1. Introduction

Tourism has grown substantially over recent decades as an economic and social phenomenon. Tourism differs from many other economic activities in that it makes use of a diverse range of facilities across a large number of industrial sectors. The problem with measuring the economic significance of tourism spending is that 'tourism' does not exist as a distinct sector in any system of economic statistics or of national accounts. While all the

products and services that are produced and consumed in meeting tourism demand are included in the core accounts, they are not readily apparent because 'tourism' is not identified as a conventional industry or product in international statistical standards (ABS, 2007). While the largest proportion of this expenditure is allocated to sectors typically associated with tourism such as accommodation, transportation, car hire, duty free purchases, restaurants, tours, and attractions, tourists also spend money in other sectors when they gamble, buy hats, clothes, gifts, newspapers, sunglasses, cinema tickets, and such like. Since it is not possible to identify tourism as a single 'industry' in the national accounts, its value to the economy is not readily revealed. Tourism activity is 'hidden' in other industry activities.

There is a recognised need for improved statistical bases for tourism analysis and policy (TSA: RMF, 2008; IRTS, 2008). Many nations, both developed and developing, typically have emphasised agriculture, mining and manufacturing as the key sectors driving economic growth, failing to appreciate the size and significance of tourism and service industries in general. Tourism data tend not to be well incorporated in the complex system of official statistics, and often do not receive the full attention they deserve. Within most existing statistical systems it has been extremely difficult to adequately document the full scale and scope of tourism-related economic activities. Therefore, any attempt to examine the economic contribution of tourism by indirectly using data on tourism-related sectors in the system of national accounts is very unlikely to give an accurate measure of the economic significance of the tourism sector.

Comprehensive and reliable statistics are essential for policy-makers to make effective decisions about resource allocation. Only with sufficient and adequate data that generate credible statistics is it possible to compare the performance of tourism with other industry activity. Besides measuring tourism's economic contribution to a country, tourism statistics are necessary for designing and evaluating marketing strategies, strengthening inter-institutional relations, and evaluating the efficiency and effectiveness of management decisions to support tourism development.

Furthermore, as tourism comprises a wide range of outputs of many industries in the economy, changes in demand for tourism will affect other industries significantly. Conversely, changes in demands for outputs of other industries, higher export for example, will also affect resources in the economy required by the tourism sector. This requires a modelling framework that can capture explicitly the relationship between tourism and the rest of the economy for the tourism impact analysis tasks.

Unfortunately, in many countries, the development of statistical concepts and frameworks for tourism has not kept pace with the changes in the nature and significance of tourism worldwide and its potential for future growth. In response to the need for improved tourism statistics and modelling techniques, in recent years we have seen the development of a Tourism Satellite Account (TSAs) as well as the incorporation of TSAs in economic modelling technique, in particular the Computable General Equilibrium (CGE) framework. This chapter has several aims:

1. To set out the nature and importance of TSAs as a measure of the economic contribution of tourism to an economy. TSAs based estimates of the direct contribution of tourism in Australia are provided to illustrate the use of this tool.
2. To discuss the importance of developing TSAs at the regional level and the approaches that can be employed (bottom up, top down, mixed).
3. To discuss the limitations of TSAs as a policy instrument.
4. To discuss CGE modelling as a tool of economic impact analysis. CGE based estimates of the economic impacts of increased inbound tourism to Queensland are provided to illustrate the use of this technique.
5. To understand the separate roles that TSAs and CGE modelling can play in our understanding of the economic significance of tourism to an economy.

22.2. Nature and Importance of TSAs

Satellite accounts allow an understanding of the size and role of activities which are not separately identified in the conventional national accounting framework. They allow an expansion of the national accounts for selected areas of interest while maintaining the concepts and structures of the core accounts. In TSAs all of the tourism associated economic activity is identified in a separate but related account, that is, an account which is a satellite of the core national accounts. TSAs are compiled using a combination of visitor expenditure data, industry data, and Supply and Use Tables (SUT) in the system of national accounts. The SUT for an economy provides the framework in which data for visitor expenditure (demand) and industry output (supply) are integrated and made consistent in the TSAs. The best known supply and use tables, input–output tables, capture the interdependence that exists between sectors of the economy. Through a matrix table, they describe how one sector's output becomes another sector's input, showing the input–output flows (the exchange of intermediate goods) between various sectors of the economy. As such, they are used to estimate the effects of changes in

one industry on output, income and employment in other industries. TSAs provide detailed production accounts of the tourism industries, including data on employment, and linkages with other productive economic activities. They enable the relationships between tourism and other economic activity to be explored within the national accounts framework, extracting all the tourism-related economic activity which is included in the national accounts but not identified as tourism.

Because TSAs are derived from the overall system of National Accounts structure, they enable tourism to be compared with other industries in the economy using consistent and internationally endorsed national accounting principles. Tourism accounts for a proportion of the outputs of a range of industries which are explicitly recorded in the national accounts. The basic procedure in satellite accounting is to claim a 'share' of sales of each commodity or industry to tourism. TSAs use these estimates of tourist expenditure and then allocate tourism expenditure to different industries. For example, if tourism accounts for 80% of 'Accommodation' consumption, 90% of 'Air Transport', 25% of 'Ground Transport' and say, 12% of 'Retail Trade', and so on for other industry sectors, then these proportions of these industry outputs attributable to 'Tourism' are calculated and aggregated to obtain an estimate of the output of 'Tourism'. The result is a set of accounts documenting output, value added, employment and so forth for the tourism industry, consisting of the sum of the various parts of other industries which are attributable to tourism. TSAs provide information as to where tourists spend, the extent to which different sectors benefit from tourist spending, and the extent to which individual sectors are dependent upon tourism (Dwyer *et al.*, 2010, Ch. 7).

TSAs can be viewed from two perspectives (TSA: RMF, 2008, para. 1.17). First, as a *statistical tool* that complements those concepts, definitions, aggregates, classifications, already presented in the International Recommended Tourism Statistics (IRTS, 2008) and articulates them into analytical tables. Second, TSAs can also be considered as the *framework* to guide countries in the further development of their system of tourism statistics, the main objective being the completion of the TSAs, which could be viewed as a synthesis of such a system. TSAs provide a framework of monetary flows which can be traced from the tourism consumer to the producing unit or supplier within the economy and have now become the unifying framework of most of the components of the System of Tourism Statistics (UNWTO, 2008). As a consequence of the limitations of existing accounting systems, increasing numbers of countries have developed or are developing TSAs consistent with the 'Tourism

Satellite Account: Recommended Methodological Framework' (TSA/RMF, or just RMF for short hereafter). This framework has been developed by the Commission of the European Communities, the Organization for Economic Cooperation and Development (OECD), the United Nations World Tourism Organisation (UNWTO) and the World Travel and Tourism Council (WTTC), and approved by the United Nations Statistical Commission (EUROSTAT, OECD, UN and WTO, 2000; RMF, 2008).The RMF presents 10 tables, recommending that only eight of them (Tables 1–7 and Table 10) should be prepared at the present time in order to achieve international comparability of results.

The advantages associated with TSAs can be summarised as follows:

22.2.1. *TSAs identify 'tourism' and 'tourist'*

TSAs concepts of 'tourism' and 'tourist' are based on the approved international recommendations for tourism statistics (IRTS, 2008). For purposes of the TSAs, 'tourism' is more limited than 'travel' since it refers to specific types of trips: Those that take a traveller outside his/her usual environment for less than a year and for a main purpose other than to be employed by a resident entity in the place visited. Individuals who take such trips are called visitors (IRTS, 2008, paras. 2.6 to 2.13). In the TSAs, 'tourism' is not restricted to what could be considered as *typical* tourism activities such as sightseeing, sunbathing, visiting attractions, etc. Travelling for the purpose of conducting businesses, for education and training, etc. can also be part of tourism if the conditions that have been set up to define tourism are met (IRTS, 2008, para. 3.17).

22.2.2. *TSAs identify a tourism 'industry'*

TSAs define and identify the various tourism 'industries' or groups of suppliers which produce or import the goods and services purchased by visitors. This is a critical first step to measuring the industry and its economic contribution, and is a tool for strengthening the identity of the tourism industry. TSAs identify tourism's component products and industries through the concepts of Tourism Characteristic and Tourism Connected products and industries (RMF, 2008; IRTS, 2008).

Tourism characteristic products are those that represent an important part of tourism consumption, or for which a significant proportion of the sales are to visitors (for example, accommodation and air transport). They are those products, that, in most countries, it is considered, would cease to exist in meaningful quantity or those for which the level of consumption would be significantly reduced in the absence of visitors.

Tourism connected products are those that are consumed by visitors in volumes which are significant for the visitor and/or the provider but are not included in the list of tourism characteristic products. The 'tourism industry' comprises all establishments for which the principal activity is a tourism-characteristic activity (IRTS, 2008). While allowing for some differences between countries adherence to these definitions improves the international comparability of tourism statistics.

22.2.3. *TSAs measure the key economic variables*

TSAs bring together basic data on the key economic variables that describe the size and the economic contribution of tourism, presenting them in a consistent and authoritative way using internationally endorsed concepts and definitions (Frechtling, 1999). By highlighting tourism within the national accounting framework, TSAs allow the tourism industry to be better included in the mainstream of economic analysis. Headline variables include *Tourism expenditure, Tourism Consumption, Tourism Output, Tourism Gross Value Added (TGVA), Tourism Gross Domestic Product (TGDP), and Tourism Employment.*

22.2.4. *TSAs measure tourism's interrelationship with other industries*

By identifying the sources of gross value added generated across the economy in order to satisfy visitor demand, TSAs make it possible to examine the inter-relationships between tourism and other industries and to answer questions such as which industries in the economy rely most heavily on tourism and to what extent they do so.

22.2.5. *TSAs support inter-industry comparisons*

TSAs allow tourism activity to be compared for its importance with other major industries in terms of size, economic performance, employment, and contribution to the national economy. For example, tourism's share of GDP and employment, the relative importance of identified tourism components to overall tourism activity, and their contribution to other non-tourism industries can all be examined. The Canadian TSAs, for instance, has been linked to the future development of benchmarking tools and micro-economic tourism indicators allowing private sector operators to compare their performance with industry norms in terms of productivity, growth, and earnings (Libreros *et al.*, 2006).

22.2.6. *TSAs support international comparisons*

TSAs allow for valid comparisons between regions, countries or groups of countries. In making these estimates comparable with other internationally recognised macroeconomic aggregates and compilations, TSAs also facilitate comparisons of the scale, scope and performance of one country's tourist industry with those in other countries. Caution is needed in cross-country comparisons, however, because a number of variations exist in the implementation of TSAs standards, including the extent of coverage of all forms of visitor consumption and tourism supply as well as differences in the interpretation and treatment of certain key concepts such as business travel, value added, and gross domestic product. Presently, inconsistent definitions limit the comparability of TSAs results between countries.

22.2.7. *TSAs can provide a base to develop different measures of tourism performance*

Measures of performance for the tourism industry include tourism yield, tourism productivity and tourism's carbon footprint

Tourism yield: A focus on 'yield' is an important aspect of both business strategy and public policy to maintain and enhance the returns from tourism in destinations world-wide. Yield is a term which refers to the gain, in financial or economic benefits which a destination achieves from attracting particular tourist market segments e.g., by origin, by type (holiday, VFR, Business) or by niche market (e.g., convention visitor, honeymooner). A growing number of destinations now emphasise 'high yield' as a primary objective of tourism policy. Measures of tourism yield (e.g., contribution to tourism expenditure, tourism industry profitability, tourism GDP, tourism value added and tourism employment) can be estimated for each type of visitor (Salma and Heaney, 2004). However, these are only direct impacts on the tourism industry. TSAs based measures do not incorporate the economy wide effects of tourist expenditure after allowance is made for inter-industry effects of the injected expenditure resulting from changes in prices, exchange rates in the presence of factor constraints.

Tourism productivity: TSAs can be used to develop valuable economic performance indicators. These include measures of productivity and profitability for the tourism industry as a whole (Dwyer *et al.*, 2007). They can also be used to explore performance in individual sectors, such as accommodation or motor vehicle hire. The measures can be used to explore the performance of individual tourism sectors or of tourism relative to that of other industries — for example, how productivity growth in tourism compares to

that elsewhere. Productivity can be measured for tourism characteristic and connected industries with benchmarking comparisons made between different regions, states and countries for each industry, including comparisons of productivity growth over time. Productivity growth rates can be very valuable in forecasting — prices or competitiveness in the future will depend on productivity growth and changes in input prices.

Calculating the Carbon Footprint of Tourism: There is increasing interest in the environmental impacts of tourism, and especially its impact on greenhouse gas (GHG) emissions. We have discussed how TSAs document the outputs and value added in the various industries which make up tourism — i.e., they summarise the productive activities. It is these activities which generate GHG emissions. If the relationship between industry production and GHG emissions is known, then it is possible to calculate the emissions which are due to tourism as measured by the TSAs (Dwyer *et al.*, 2010). The advantage of using the TSAs to estimate the carbon footprint is that it ensures that the measure is comprehensive, and incorporates all emissions from all industries which make up tourism. In addition, since the TSAs are extensively used as a measure of the economic contribution of size of the tourism industry, this carbon footprint is an environmental measure which is consistent, in terms of definition of the industry, with the economic measure.

22.2.8. *TSAs give 'credibility' to estimates of the economic contribution of tourism*

As a statistical tool that is compatible with international national accounting guidelines, TSAs can enhance credibility of tourism as a main economic sector. TSAs can help to raise awareness of tourism and its contribution to national economies. They help tourism stakeholders to better understand the economic importance of tourism activity; and by extension its role in all the industries producing the various goods and services demanded by tourists. TSAs thus help to legitimise or give credibility to the tourism industry as a main economic sector in the minds of politicians and the general public. In doing so, they can help to solicit and justify funding for tourism development and marketing (Cockerell and Spurr, 2002).

Not surprisingly, the extensive involvement of governments in tourism planning, infrastructure provision and marketing at a state, regional or local level, has led to a strong demand for better economic statistics to be made available at the state or regional level. Yet, only a small number of countries, in particular Canada, Spain, Norway, and Australia, have attempted to develop TSAs for regions (Jones and Munday, 2008; Pham *et al.*, 2009). The

use of the term 'satellite account' may be misleading at the regional level given that it cannot strictly conform to the national accounts. Some substantial challenges to their construction may be noted (RMF, 2008, Annex 7). Nevertheless, there are benefits to estimating tourism's contribution to subregions of the national economy within the TSAs context.

22.2.9. *TSAs provide a tool for tourism research and policy analysis*

TSAs provide policy makers with insights into tourism and its contribution to the economy providing an instrument for designing more efficient policies relating to tourism and its employment aspects (Jones *et al.*, 2003). TSAs can serve as a tool for enhanced strategic management and planning for the tourism industry. Indeed, a major purpose of the TSAs is to improve the effectiveness of tourism policies and actions and to improve existing measures for evaluation of these policies in the context of a broader policy agenda (OECD, 2000).

There is a worldwide trend towards the de-centralisation of political power and destination management, with the associated need to improved data for decision making at the local level. Tourism often produces substantial economic contributions in certain regions of a national economy but with a negligible impact in others. Since tourism activity tends to be unevenly concentrated within countries, national TSAs cannot help us to determine the importance of tourism to different sub-regions or provide any guidance as to its potential as a tool for regional development in particular cases (Jones *et al.*, 2003). Worldwide, regional governments are developing tourism plans to maximise the opportunities for income and employment growth resulting from an expanding tourism industry. The forms of planning implemented must depend on the estimated net benefits on local economies of different strategies. In such cases, national TSAs may be of much less relevance to regional destination management organisations and local businesses than regional TSAs.

In helping governments and businesses determine the value of tourism to the economy, TSAs can also aid in the formulation of strategies for ensuring competitive advantage in this sector. Given that they allow comparisons across sectors, TSAs give tourism organisations the information they need to lobby governments to ensure that tourism can compete on a level playing field.

TSAs also provide the basic information required for the development of models of the economic impact of tourism. For example, analysts may

use data from TSAs to estimate the direct effect of changes in tourism consumption on other industries or on employment. We shall further explore this use of TSAs below.

22.3. Direct Contribution of Tourism using TSAs: Australia

In this section, we provide some data contained in the Australian TSAs for 2008–2009. Table 22.1 provides some 'headline estimates'. Table 22.2 provides measures of Direct Output by industry sector. While highlighting only some of the measures from the Australian TSAs, the data in Tables 22.1 and 22.2 will be contrasted with the economic impact estimates of CGE modelling in Secs. 22.5 and 22.6 below.

In 2008–2009, total tourism consumption in Australia was $92.0bn. Table 22.1 shows that in terms of direct economic contribution, this tourism consumption generated $62.4bn of Australian industry output, $30.0bn of industry gross value added (GVA), $32.8bn of gross domestic product (GDP), and 486,100 jobs. These direct contributions of tourism represent 2.6% of Australia's GVA, 2.6% of GDP, and 4.5% of total employment.

When producing tourism goods and services, Australian businesses use goods and services produced and supplied by other businesses. Tourism industry output measures the value of goods and services produced by establishments to satisfy visitor consumption, excluding net taxes on tourism products (taxes less subsidies). The TSAs indicate the industry shares of Direct Tourism Output at basic prices for 2008–2009.

Table 22.2 shows the composition of tourism direct output for Australia as a whole and by State. For Australia, Air water and other transport have the greatest output ($13,325 mil.), followed by Accommodation ($10,547), Cafes, restaurants and takeaway food services ($9,617), and Other retail trade ($6,848). Taken together these sectors generate almost two-thirds of tourism direct output. For Queensland, an important state for tourism in Australia, Direct Tourism Output is $14,707 or 24% of the total for Australia. The profile of Direct Tourism Output for Queensland differs from that of Australia with greatest shares in Accommodation ($2,783), Air, water and other transport ($2,623) and Cafes, restaurants and takeaway food services ($2,366), and Other retail trade ($1,746).

22.4. Limitations of TSAs as a Policy Instrument

There are two main limitations associated with TSAs as a policy instrument.

Table 22.1. Estimates of direct contribution of tourism in Australia by State and Territory, 2008–2009.

Direct contribution	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
Tourism GVA ($m)	10,198	6,537	7,032	1,747	2,526	775	642	556	30,013
Tourism net taxes on products ($m)	854	631	739	178	228	78	68	40	2,816
Tourism GSP, GDP ($m)	11,052	7,168	7,770	1,925	2,754	853	710	596	32,829
Tourism employment ('000)	160.3	106.5	118.0	29.6	39.7	13.2	10.4	8.3	486.1
GVA ($m)	364,991	265,158	231,795	71,450	162,990	21,012	15,155	24,350	1156,900
Tourism share of GVA (%)	2.8	2.5	3.0	2.4	1.5	3.7	4.2	2.3	2.6
GSP, GDP ($m)	402,334	291,637	243,901	78,986	169,950	23,176	17,168	25,969	1253,121
Tourism share of GSP, GDP (%)	2.7	2.5	3.2	2.4	1.6	3.7	4.1	2.3	2.6
Employment ('000)	3,414.0	2,682.8	2,224.5	788.0	1,166.4	233.8	115.3	196.0	10,820.8
Tourism share of employment (%)	4.7	4.0	5.3	3.8	3.4	5.6	9.0	4.2	4.5
Direct Tourism Output	21,439	13,445	14,707	3,524	5,207	1,587	1,369	1,147	62,425

Source: Spurr *et al.* (2010), Table 1.

Table 22.2. Tourism output, Australia, by state and territory, 2008–2009, $m.

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
Tourism characteristic industries									
Accommodation	3,454	2,135	2,783	541	888	309	266	172	10,547
Ownership of dwellings	1,056	711	734	205	305	82	53	81	3,226
Cafes, restaurants and takeaway food services	3,167	2,141	2,366	569	765	271	187	152	9,617
Clubs, pubs, taverns and bars	843	570	630	152	204	72	50	41	2,561
Rail transport	342	219	211	40	58	0	15	0	885
Taxi transport	244	136	162	36	60	37	19	12	704
Other road transport	479	307	295	56	81	40	21	17	1,296
Air, water and other transport	5,497	2,676	2,623	537	1,155	218	296	324	13,325
Motor vehicle hiring	273	239	296	69	122	46	76	17	1,137
Travel agency and tour operator services	793	412	570	245	194	78	55	40	2,387
Cultural services	284	214	336	56	73	30	39	13	1,045
Casinos and other gambling services	97	99	95	23	24	9	8	2	357
Other sports and recreation services	453	342	536	90	117	48	61	21	1,667
Total tourism characteristic industries	16,983	10,201	11,637	2,617	4,043	1,239	1,143	892	48,754
Tourism connected industries									
Automotive fuel retailing	197	130	137	43	54	16	14	10	601
Other retail trade	2073	1,565	1,746	497	552	182	120	113	6,848
Education and training	1,145	855	430	160	273	65	18	88	3,033
Total tourism connected industries	3,415	2,550	2,312	699	879	263	152	211	10,482
All other industries	1,042	695	757	208	284	85	73	45	3,189
DIRECT TOURISM OUTPUT, at basic prices	**21,439**	**13,445**	**14,707**	**3,524**	**5,207**	**1,587**	**1,369**	**1,147**	**62,425**

Source: Spurr *et al.* (2010), Table 4.

(a) TSAs are mainly descriptive in nature and do not include any measurement of the indirect and induced effects of visitor consumption on the economic system as a whole.

Tourism's total economic significance is greater than just the direct contribution estimated in the TSAs. Additional output and value added is generated by the industries supporting the initial 'round' of tourism spending. Thus TSAs measures do not measure the full impact of tourism on the host economy because they are limited to those businesses that have a direct relationship with tourists. Measuring indirect tourism output or value added involves estimation of this indirect contribution and requires economic modelling, tracing the flow-on effects of businesses' intermediate purchases that are used directly in producing tourism products and measuring the cumulative output and value added that these purchases generate. These indirect effects redistribute to the tourism sector output, value added, GDP, employment that occurs outside the tourism sector. They reflect the value of production and employment that occur on an economy wide basis as a result of the demand of tourists for goods and services. A comparison of the direct and indirect estimates for Australia indicates that the indirect contribution of tourism was slightly higher than the direct contribution in terms of gross value added, thus more than doubling the overall contribution of tourism reported in the TSAs (Salma, 2004).

(b) TSAs represent an important information base for the estimation of the economic contribution of changes in tourism demand, but TSAs are not in themselves modelling tools for economic impact assessment. We must distinguish between 'economic contribution' and 'economic impact'. *Economic contribution* measures the size and overall significance of the industry within an economy. *Economic impact* refers to the compound effects of a change that permeates through the whole economy and results in changes in all other industries. To gain more comprehensive insight into the indirect and induced effects of tourism requires a further level of analysis — this is economic impact analysis, requiring the use of specific economic modelling techniques. Economic impact is much broader and more important to policy makers than the economy contribution (Dwyer *et al.*, 2007). Economic impact implies that the overall change in the economic contribution must take account of the extensive interactive effects which occur across the economy. In such an exercise, TSAs provide a starting point for other more comprehensive approaches to analysing the overall economic impact of tourism. The CGE section below will elaborate the impact in more detail.

22.5. CGE Modelling as a Tool of Economic Impact Analysis

The range of popular policies that CGE analysis has been adopted is voluminous, some illustrative topics include tax policy evaluation, international trade, economic growth, economic structure, income distribution (Johansen, 1960; Harberger, 1962; Shoven and Whalley, 1972; Dixon *et al.*, 1982; Dervis̨ *et al.*, 1982; Dixon and Rimmer, 2002), trade policies (Hertel, 1997) and climate change effects (Adams, 2008; Böhringer and Rutherford, 2010). The list is not exhaustive, particularly for the rapid development of the CGE technique over last several decades, and these are only a few to highlight the use of CGE in applied economic analysis.

The construction of a CGE model involves setting up a series of markets (for goods, services and factors of production), production sectors and demand groups (households). Each market, sector and household has its own set of economic rules that determine how it reacts to external changes. CGE models consist of a set of equations characterising the production, consumption, trade and government activities of the economy. There are four types of equations in the set which are solved simultaneously. These are:

- *Equilibrium conditions* for each market ensure that supply is equal to demand for each good, service, factor of production and for foreign exchange. Assuming flexible prices and wages, this enables factors of production, such as labour and capital, and foreign exchange markets to be modelled (although some sticky prices can be assumed such as might occur in the labour market).
- *Income-expenditure identities* ensure that the economic model is a closed system. All earnings must be accounted for through expenditure or savings. These conditions apply to all private households, the government, firms and any other economic agents that are modelled. These define various macroeconomic identities such as aggregate employment and the components of gross domestic product.
- *Behavioural relationships* state how economic agents (consumers, suppliers, investors and so on) acting in their own best interests can lead to changes in price and income levels. For example, businesses will seek to maximize profits. Consumers will look for lowest prices for equivalent products. The zero-pure-profits condition for production is assumed. Resource allocation is via market forces — where markets behave imperfectly unemployment may increase. Increasing government expenditures are met either by raising taxes or borrowing, with implications for the expenditure of other economic agents.

- *Production functions* determine how much of output is produced for any given level of factor employment. With assumptions regarding market structure, these determine what levels of labour employment, capital usage and intermediate input usage are required to satisfy a given level of output for a given set of prices. The production assumptions allow substitution between intermediate inputs and factors of production as prices and wages change.

CGE modelling has become increasingly widely used across many countries for the last several decades. The emerging importance of the technique has been due to its ability to provide decision makers with insight into policy outcomes at both economy-wide as well as at the industry levels. It is the inter-industry linkages of all producers, the interaction between producers and consumers, the simultaneous responses of primary inputs to output growth of industries in an economy that makes the CGE technique an indispensible economic modelling tool for policy analysis that the so-called partial equilibrium analysis could not offer.

22.5.1. *Model database*

A typical IO database of a CGE model is presented in the simplest form in Fig. 22.1. The format of an IO database published by any national statistical office is often more complicated than the representation in Fig. 22.1. This simplest form makes it easier to explain the general mechanism of a CGE model without losing the essence of the technique. Each column in the Input–Output table represents a user in an economy. Users include all industries, household consumption (HH), investment by industries (INV), government consumption (GOV) and overseas export (EXP). Users purchase commodities from the rows for their consumption, for example the amounts $C_{11}, C_{21} \ldots C_{n1}$ represent the amounts of all n commodities that industry 1 purchases as intermediate inputs in the production process; the household sector purchases the amounts $HH_1, HH_2 \ldots HH_n$ of those n commodities for their final consumption; and the amounts of $E_1, E_2 \ldots E_n$ are exports to overseas market. Total sale of a locally produced commodity is the sum across all sales across a row, such as TS_2 for commodity 2. In addition to the usage of intermediate inputs, industries will also pay wages to employees (P1), capital rental (P2), net commodity taxes on intermediate inputs (P3), net production taxes (P4), and imported goods (P6). The Total Cost (TC) of production for an industry is the column total. The total cost has to equal total sales for every industry, for example $TC_2 = TS_2$.

	Industry					Final Demands				Total
	J1	J2	J3	...	Jn	HH	INV	GOV	EXP	Supply
C1	C_{11}					HH_1			E_1	**TS_1**
C2	C_{21}	C_{22}	.....		C_{2n}	HH_2			E_2	**TS_2**
	.					.			.	.
	.					.			.	.
	.					.			.	.
	.					.			.	.
	.					.			.	.
	.					.			.	.
	.					.			.	.
Cn	C_{n1}					HH_n			E_n	**TS_n**
	T1: Total Intermediate use									
	Value Added									
	P1: Compensation of employees (COE)					(not applicable)				**COE**
	P2: Gross operating surplus & mixed income					(not applicable)				**GOS**
	P3: Net taxes on products									**PTAX**
	P4: Net taxes on production					(not applicable)				**CTAX**
	P6: Imports									**M**
	T2: Australian Production									
Total	**TC1**	**..**	**TC3**	**.....**	**TCn**	**C**	**I**	**G**	**E**	

Fig. 22.1. Input–output database.

At the aggregate level, Gross Domestic Product from the expenditure and income sides is calculated as follows.

Gross Domestic Product

(Expenditure side) = +Total Household consumption (C)
+ Total Investment (I)
+ Total government consumption (G)
+ Total Export (E)
− Total Imports (M)

Gross Domestic Product

(Income side) = +Total wages (COE)
+ Total Gross operating Surplus (GOS)
+ Total net commodity taxes (CTAX)
+ Total net production taxes (PTAX)

22.5.2. *Model closures*

Simulation results from CGE models depend largely on the adopted assumptions that are often referred to as a *closure*. For a comparative static CGE model, the solution path over time is NOT known. Rather, it is assumed that the economy operates within a certain timeframe either a long run or a short run, depending on the purpose of a simulation.

The two main assumptions that characterise a *short run* closure are: (a) The economy operates in a timeframe where real wage rates are rigid. Changes to labour demand will be reflected by changes in employment, as often this is not long enough for sale contracts to be re-negotiated for higher commodity prices in order to take into account any necessary changes to wage rates that producers have to pay to their employees; (b) There is not enough time for capital stock to be adjusted; return to capital (or the rate of return in other words) will adjust to reflect changes in demand for capital.

The *long run* closure adopts the opposite assumptions. For the labour market, real wage rates are now fully flexible while employment is fixed. The whole economy cannot have more than the total aggregate employment level that the labour market can offer. Any demand higher than this will be reflected by a rise in the real wage rates. In an adverse situation, the fixed employment implies that whoever wants a job will get employment as long as they are prepared to take whatever wage rate that is affordable by the producers. Implicitly, this assumes full employment in the economy. Thus, in a long run closure, the total employment at the national will not change under the impact of any shocks introduced to the model. However, for a state CGE model, this does not simultaneously assume that total employment at the state level remains unchanged. Total employment at the state level can change, and often an increase in employment in one state will be at the expense of other states via regional migration. Regional employment supply is a function of the ratio of regional to national real wage rates: A region with a real wage rate higher than the national real wage rate can attain higher employment growth than regions with lower wage rate ratios. For the capital market, the economy-wide capital stock is now allowed to change in response to the demand of capital in the economy, while the national rate of return is fixed. At the state level, industry rates of return are set to be positively correlated to the capital growth. Industries require large increases in their rates of turn in order to attain high capital growth.

22.6. Structure of a Tourism CGE Model with TSAs Data

The conventional IO table in Fig. 22.1 does not present tourism expenditure data explicitly. The domestic tourism expenditure is embedded in household final consumption and the overseas tourism expenditure is included in the export vector. That is, final demand data in the CGE database include both tourism and non-tourism data for the same final demand category. As a result, tourism impact analysis using the conventional CGE database will not be able to capture the impact of tourism shocks on non-tourism industries for the same commodity.

Given the importance of tourism in an economy, the ability that CGE model can offer for impact analysis, and the availability of TSAs data, the tourism sector has been incorporated into the CGE framework more explicitly in recent years (Madden and Thapa, 2000; Dwyer *et al.*, 2003; Pham *et al.*, 2010). Figure 22.2 is an extension of Fig. 22.1, in which the process to modify the original CGE IO database is carried out in order to incorporate the tourism sector into a CGE model (Pham *et al.*, 2010). In a tourism CGE database, most of the original elements remain unchanged, except that two new industries *Dtour* and *Etour* have been created, for domestic tourism and overseas tourism respectively. The final household consumption by commodities is decomposed into tourism and non-tourism parts, and the tourism part is moved to the intermediate quadrant to represent the domestic tourism

	Industry						Final Demands				Total
	J1	J2	J3	…	Jn	Dtour	Etour	HH	INV	GOV	EXP	Supply
C1	C_{11}					HH_{1T}	E_{1T}	HH_{1NT}			E_{1NT}	**TS_1**
C2	C_{21}	C_{22}	.....		C_{2n}	HH_{2T}	E_{2T}	HH_{2NT}			E_{2NT}	**TS_2**
Cn	Cn1					HH_{nT}	E_{nT}	HH_{nNT}			E_{nNT}	**TS_n**
Dtour						0	0	Tot_Dtour			0	**Tot_Dtour**
ETour						0	0	0			Tot_ETour	**Tot_ETour**
	T1: Total Intermediate use											
	ValueAdded											
	P1: Compensation of employees (COE)					0	0		(Not available)			**COE**
	P2: Gross operating surplus & mixed income					0	0		(Not available)			**GOS**
	P3: Net taxes on products											**PTAX**
	P4: Net taxes on production					0	0		(Not available)			**CTAX**
	P6: Imports											**M**
	T2:Australian Production											
Total	**TC1**	..	**TC3**	.....	**TCn**	**Tot_Dtour**	**Tot_ETour**	**C**	**I**	**G**	**E**	

Fig. 22.2. Tourism CGE IO database.

supplier. Similarly, elements of *Etour* are extracted from the export vector. The tourism sectors *Dtour* and *Etour* do not require primary inputs. They each act as a 'middle man' to select all goods and services for tourism activity, and then sell all tourism services to the corresponding tourists. This follows closely the approach adopted in the construction of the TSA (Pham *et al.*, 2009), where the tourism sector is not a commodity or industry *per se*, as tourists consume a wide range of commodities and services for their tourism activity. *Dtour* is not purchased by any users in the economy other than the household sector, and similarly *Etour* by the export. These purchases of tourism services are defined as domestic and inbound tourists' consumption respectively. To some extent, the treatment here reflects exactly how loosely defined the tourism sector is in relation to goods and services in reality.

The task to split the tourism and non-tourism parts relies mainly on the TSAs data, particularly from the consumption side. The approach in Fig. 22.2 focuses only on integrating the demand side of TSAs into a CGE model while the supply side of the tourism sector remains implicitly with the existing industries in the IO database. While this structure suffices to allow model users to carry out impact analysis on changes to tourism demands, the current structure is not able to analyse the supply side of the tourism sector, for example labour productivity, employment in tourism. However, it is not a suitable solution to split the original industries in the IO database into non-tourism and tourism because this will create an unrealistic modelling environment, generating two different prices for the same good which is purchased for two different purposes. Moreover, both components in the same industry will have to compete for resources to produce the same good where, in reality, no such competition and different prices for the same good will arise. The supply side presents challenges for future research, in which an additional module can be added to extract the supply factors from the conventional industries to make up the supply side of the tourism sector explicitly.

22.7. Application of a Tourism CGE Model: The Case of Queensland, Australia

In this section, we augment the MONASH Multi-Regional Forecasting Model, in short MMRF, (Adams, 2008) with a tourism extension. This model contains all six States of Australia: New South Wales (NSW), Victoria (Vic), Queensland (Qld) South Australia (SA), Western Australia (WA), Tasmania (Tas), as well as the Northern Territory (NT), and the Australian

Capital Territory (ACT). MMRF is a dynamic model, but in this application, the model was run in a comparative static mode and in a short run closure to illustrate immediate impacts of an increase by 10% of inbound tourism expenditure in the Qld region. Results are based on the 2004–2005 IO database. The model simulation was run on GEMPACK software (Horridge *et al.*, 2008).

In this section, we highlight some typical results for macro- and microeconomic variables that CGE modelling can provide to policy makers. Specifically, we illustrate how changes to inbound tourism in Queensland could affect other states in Australia via crowding out effect of exports and differences of the impacts on different industries. The results are displayed in Table 22.3.

The increase in inbound tourism in Queensland induces a large increase in demand for both capital and labour in the State. As capital is fixed in the short run, higher demand for capital is reflected by an increase rental to capital in Queensland (Row 14). In contrast, the assumption of rigid real wage rates in all states implies that labour cost units across all states (Row 15) are set equal to the national CPI (Row 17). Higher demand for labour in Queensland reduces unemployment in the State, making the labour cost relatively cheaper than the cost of capital (Row 14 compared to Row 15 for QLD). Thus producers in Queensland increase usage of labour (Row 11) relative to capital. In other states, crowding out effects occur in the export sector, implying that industries have to cut back their output, resulting in lower demand for labour (Row 11), and higher unemployment rates (not reported here). In essence, the main driver in the economy is the movement of labour with QLD increasing while decreases occur in other states.

Factor incomes of both labour and capital generated in QLD are much higher than all other states (Rows 21 and 22), adding to Queensland's household income initially. However, since unemployment is reduced largely in Queensland, government payment to unemployment benefits is also reduced, which offsets to some extent the increase in factor income in the state. The initial increase in inbound tourism imposed on Queensland is approximately 1.14% of the total export of the State, or equivalent to 0.28% of total national exports. However, the total export in QLD only increases by 0.825%, and at the national level it only increases by 0.07% (Row 5); both are far below the initial stimulus. This is because the increase in inbound tourism has pushed up the domestic costs (Row 19) across all States; export prices rise in all States (Row 18), as indicated by an appreciation of the terms of trade (Row 13), causing all States to lose their competiveness in the international market for all other commodities. All States other than QLD experience

Table 22.3. Effects of a 10% increase in inbound tourism in QLD — Macro Results.

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUSTRALIA
					per cent				
1 GSP/GDP	−0.0022	−0.0042	0.0902	−0.0051	−0.0031	−0.0015	−0.0091	0.0016	0.0144
2 Household Consumption	0.0150	0.0169	0.0152	0.0169	0.0153	0.0150	0.0103	0.0153	0.0156
3 Government consumption	0	0	0	0	0	0	0	0	0
4 Investment	0	0	0	0	0	0	0	0	0
5 Overseas Export	−0.2063	−0.2113	0.8255	−0.1748	−0.0635	−0.1459	−0.0788	−0.2735	0.0734
6 Inter-state Export	0.0805	0.0576	−0.2103	0.0392	0.0320	0.0365	0.0079	0.0185	
7 Overseas Import	0.0243	0.0221	0.1386	0.0206	0.0211	0.0271	0.0199	0.0300	0.0436
8 Inter-State Import	−0.0532	−0.0450	0.2168	−0.0359	−0.0321	−0.0175	−0.0205	−0.0091	
9 Trade balance (overseas, in $ millions)	−97.2	−71.3	362.7	−21.0	−25.8	−6.1	−3.0	−3.6	134.5
10 Capital	0	0	0	0	0	0	0	0	0
11 Labour	−0.0048	−0.0088	0.1698	−0.0107	−0.0079	−0.0040	−0.0177	0.0017	0.0248
12 Land	0	0	0	0	0	0	0	0	0
13 Economy-wide terms of trade									0.0414
14 Unit cost of capital	0.0788	0.0694	0.2171	0.0565	0.0282	0.0678	0.0137	0.0967	0.0938
15 Unit cost of labour	0.0752	0.0752	0.0752	0.0752	0.0752	0.0752	0.0752	0.0752	0.0752
16 Investment price index	0.0538	0.0500	0.0839	0.0511	0.0528	0.0545	0.0501	0.0547	0.0585
17 Consumer price index	0.0657	0.0622	0.1224	0.0626	0.0633	0.0660	0.0632	0.0667	0.0752
18 Export price	0.0421	0.0434	0.0688	0.0354	0.0130	0.0297	0.0161	0.0565	0.0414
19 GSP/GDP price index	0.0738	0.0691	0.1342	0.0630	0.0496	0.0685	0.0446	0.0800	0.0799
20 HH Disposable Income	0.0807	0.0791	0.1375	0.0795	0.0786	0.0810	0.0735	0.0821	0.0906
21 Labour income	0.0705	0.0664	0.2452	0.0645	0.0672	0.0712	0.0574	0.0769	0.1002
22 Capital income	0.0928	0.0929	0.1098	0.0930	0.0923	0.0922	0.0885	0.0921	0.0960

Source: Authors' simulation results.

a reduction in their total exports (Row 5). The increase in total export of Queensland is mainly due to the tourism shock but discounted by the reduction in the export of other commodities. A higher domestic price level makes imported goods relative cheaper than goods produced domestically, thus overseas imports increase in all States (Row 7). As a result, Queensland is the only region that has attained an improvement on its trade balance by $362.7 million while all other States experience decreases in their balance of trade (Row 9).

As the stimulus originated from Queensland, the demands for primary inputs are highest in the State, making it the most expensive producing region among all States. This causes Queensland to lose its competitiveness in the domestic market. Exports from Queensland to other regions decline by 0.21%, making room for other States to expand their exports (Row 6).

In contrast, as Queensland now requires extra inputs for its production to satisfy extra export demand of inbound tourism, it is the only region that increases its inter-state imports. This increase in inter-state import of Queensland goes hand in hand with the increase in demand for overseas import. Other States have cut down their demand for inter-state import mainly because they substitute domestically produced goods for the imported goods.

22.7.1. *Sectoral results*

At the industry level, exports have declined for all outputs, except the inbound tourism sector in Queensland. This is expected. However, the impact of export reduction on outputs is not the same across all industries in all states. Table 22.4 presents changes of industry outputs in million dollars, based on 2004/05 prices. As predicted, outputs of the tourism connected industries increase while outputs of non-tourism connected industries contract mainly because of lost overseas export demands. Industries that contract include Agriculture, Black Coal, Other Mining and Metals. These are major exports industries in Australia. The tourism connected industries in Queensland grow due to the direct impact of the stimulus while in other states, these connected outputs are adversely affected, for example Food, Drink, Other Manufacturing, TCF, Fuel (Petroleum product), Wholesale, Retail Trade, Accommodation, Road Transport, and Education. This is because the inbound tourism sector in the other states are adversely affected, leading to a lower demand for all tourism related goods.

For industries that mainly supply goods domestically, output growths of these industries are stronger in other States than in Queensland due to the

Table 22.4. Effects of a 10% increase in inbound tourism on industry output.

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUSTRALIA
					$ million				
Agriculture	−1.2	−1.6	−1.3	−0.7	−1.0	−0.1	−0.1	0.0	−6.0
Forestry	0.0	−0.1	0.0	−0.1	−0.2	−0.1	0.0	0.0	−0.5
Fishing	0.0	−0.1	0.2	−0.3	−0.2	−0.1	−0.1	0.0	−0.5
Black Coal	−0.6	0.0	−2.5	0.0	0.0	0.0	0.0	0.0	−3.1
Brown Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oil	0.0	0.0	−0.1	0.0	−0.1	0.0	0.0	0.0	−0.2
Gas	0.0	−0.1	0.1	−0.1	−0.2	0.0	0.0	0.0	−0.2
Other Mining	−0.8	−0.5	−3.1	−0.3	−4.1	−0.1	−1.3	0.0	−10.2
Food	−4.0	−6.5	42.7	−0.8	−1.1	−0.3	−0.2	−0.1	29.7
Drink	0.1	−0.6	2.0	−0.7	−0.1	0.0	0.0	0.0	0.6
Other Manufacturing	−9.2	−5.8	22.8	−1.7	−1.6	−0.2	−0.1	−0.1	4.0
TCF	−2.7	−3.5	6.2	−0.4	−0.3	−0.1	0.0	0.0	−0.9
Wood Paper Print	−0.5	−1.4	4.2	−0.2	−0.2	−0.4	0.0	0.0	1.5
Petroleum Coal Products	0.7	1.1	8.6	−0.2	−0.1	−0.1	−0.1	−0.1	9.9
Chemicals	−4.2	−3.2	5.9	−0.4	−1.2	−0.1	0.0	−0.1	−3.3
Rubber, Plastic, Glass Products	−0.9	−1.4	0.4	−0.3	−0.1	0.0	0.0	0.0	−2.4
Ceramic Cement Concrete	−0.3	−0.3	−0.2	−0.1	−0.1	0.0	0.0	0.0	−1.0
Metals	−13.6	−8.8	−13.3	−3.5	−4.4	−1.0	−0.3	−0.1	−45.1
Motor Vehicle Transport Parts	−0.9	−4.9	0.0	−2.4	−0.3	0.0	0.0	0.0	−8.6
Ship Rail Air Equipment/ Parts	−0.9	−0.9	0.9	−0.1	−0.2	0.0	0.0	0.0	−1.2
Electricity Black Coal	0.2	0.0	0.0	0.0	−0.1	0.0	0.0	0.0	0.1
Electricity Brown Coal	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Electricity Gas	0.0	0.0	−0.1	0.0	−0.1	0.0	0.0	0.0	−0.1
Electricity Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(*Continued*)

Table 22.4. (*Continued*)

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUSTRALIA
Electricity Hydro	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity Supply	−1.0	−0.7	2.2	−0.2	−0.3	−0.1	0.0	0.0	0.0
Gas Supply	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Supply	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.9
Construction	1.3	0.6	−1.1	0.4	1.0	0.1	0.0	0.0	2.3
Wholesale	−5.7	−5.6	25.3	−2.0	1.0	0.0	0.5	0.1	13.6
Retail Trade	−2.1	−1.3	21.4	−0.7	0.1	0.0	−0.2	0.1	17.4
Accommo-dation	−3.0	−2.4	52.5	−0.8	−0.5	−0.1	−0.1	−0.1	45.5
Road Transport	−5.0	−3.3	84.3	−0.8	−1.5	−0.2	−0.3	−0.2	73.0
Rail Transport	−0.1	0.0	3.7	0.0	−0.1	0.0	0.0	0.0	3.6
Trans Other	1.9	0.6	14.3	0.2	0.4	0.2	0.0	0.1	17.6
Water Transport	0.2	0.0	8.5	0.1	0.2	0.1	0.0	0.0	9.1
Air Transport	−2.3	−1.0	34.4	0.1	−0.2	0.0	−0.2	−0.2	30.6
Communi-cation	4.6	4.2	2.0	0.8	1.4	0.2	0.1	0.3	13.7
Financial Services	5.2	2.4	3.9	0.5	0.8	0.3	0.1	0.2	13.4
Dwellings	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.5
Business Services	11.4	5.4	11.7	0.9	2.4	0.3	0.2	0.7	33.0
Gov Admin Defence	−0.2	−0.1	2.6	0.0	0.0	0.0	0.0	−0.1	2.1
Education	−2.2	−1.7	31.3	−0.3	−0.4	0.0	−0.1	−0.2	26.3
Health	0.6	0.6	4.0	0.2	0.2	0.1	0.0	0.0	5.8
Community Services	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Gambling Recreation	2.2	1.6	7.6	0.4	0.5	0.1	0.1	0.2	12.7
Personal Services	0.5	0.5	12.1	0.2	0.2	0.0	0.0	0.1	13.6
Inbound Tourism	−21.2	−12.2	483.5	−2.3	−5.1	−0.9	−1.3	−0.8	439.7

Source: Authors' simulation results.

substitution effect among domestic sources; Construction, Communication and Financial Services are examples.

22.8. Conclusions

By nature, TSAs are a statistical tool. They are used to report how much the tourism sector has contributed to an economy and how important the tourism sector is compared to other sectors in the economy. TSAs allow us to compare the contribution of the tourism sector across regions, countries and over time in a consistent manner. Apart from enabling direct comparison of the tourism sector with other industries in an economy, the existence of TSAs has a much more significant role in practice. This role has been recognised across so many countries around the world, and finally was consolidated by the United Nations World Tourism Organisation in an international guideline that we have today, the *Recommended Methodological Framework*. The policy relevance of TSAs was summarised above.

The contribution of tourism to the Australian and State economies was set out in Tables 22.1 and 22.2. For illustrative purposes we focussed on various 'headline estimates' as shown in Table 22.1 and Direct Tourism Output by industry as shown in Table 22.2. The variables that appear in the TSAs measure the size and overall significance of the industry within an economy. As we discussed, TSAs are mainly descriptive in nature and are limited to those businesses that have a direct relationship with tourists.

Economic impact refers to the *changes* in the economic contribution resulting from specific events or activities that comprise 'shocks' to the tourism system. This is distinct from the contribution itself. TSAs provide a continuous flow back and forth between the supply and demand aspects of the tourism sector, the direct effect is well captured within the TSAs and this can be useful for measuring the initial direct impacts of tourism on other industries in the economy. However, analysts should exercise caution when elaborating these relationships into the kind of indirect multipliers in order to capture the economy-wide impact of tourism because the standard multiplier technique does not take into account resource constraints in an economy. If there is a shock to tourism demand (e.g., increased visitor numbers) the contribution of the tourism industry to the economy is likely to increase but the approach that must be used to estimate this is economic impact analysis. Economic impact analysis acknowledges the extensive interactive effects which occur across the economy. Analysts account for these by employing a CGE model. Our example, shown in Tables 22.3 and 22.4, illustrated this. Thus, increased inbound tourism to Queensland generates

additional tourism expenditure, output, value added and employment as the local tourism industry expands to accommodate this expenditure increase. While the TSAs can be employed to estimate the direct effects of additional tourism demand on the contribution of the tourism industry to the economy (for example, tourism output, tourism GDP or tourism employment), they cannot be used to estimate the *economy wide* impacts of the increased tourism since they do not contain any behavioural equations specifying how each sector responds to external shocks, including shocks normally affecting the sector directly and shocks transmitted through inter-sectoral linkages, via changes prices, wages, exchange rates and other variables. Since TSAs represent a snapshot or description of the significance of direct tourism demand within an economy at a particular time, TSAs do not provide a measure of net impacts on the economy of change in tourism expenditures. TSAs take no account, for example, of the possible factor constraints that may present barriers to tourism growth in response to an increase in tourism demand, or the impacts that changing prices and wages might have on other (non tourism) industries.

The advantages of CGE are many. Since it comprises a comprehensive input–output database, CGE can provide results from the industry level to the economy-wide level. Given the availability of TSAs data, tourism CGE models can provide tourism industry and tourism government departments with estimates of the impacts of tourism on the rest of the industries in the economy as well as the impact of other industries on the tourism sector. A CGE tourism model takes into account the resource constraints in the economy, such as the crowding out effects on exports of other commodities when tourism sustains higher output growth to satisfy higher demand. With this framework, a CGE tourism model can provide more realistic analytical recommendations to policy makers. More specifically, the model can be used to measure economy-wide yield for a particular tourist market so that appropriate assistance from government, or appropriate decision on new investment of infrastructure for tourism destinations. A CGE tourism model with an additional CO_2 account can be used to measure, for example, the impact of carbon tax on tourism output. Given the comprehensiveness of data on the supply and demand for all commodity markets in the IO database, a CGE tourism model can be used to measure the spill-over effect of productivity in other industries on tourism, and the mechanism would also allow productivity of the tourism sector to be measured in a more rigorous manner of the inter-industry linkage framework.

The examples highlight the different roles of TSAs and CGE modelling. Although TSAs and CGE models play different roles in providing policy

makers with insights into the economics of tourism, both are important and complement each other in the policy making.

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Chapter 23

THE DIRECT AND INDIRECT CONTRIBUTIONS OF TOURISM TO REGIONAL GDP: HAWAII

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Abstract: After two decades of development and refinement, the tourism satellite account (TSA) has been touted as the most comprehensive way to measure the economic contribution of tourism to a destination's gross domestic product. However, recent literature has pointed out that the TSA is deficient in that it does not yield the indirect contribution of tourism to GDP. This paper shows that the TSA cannot be used to estimate the indirect contribution unless the import content of tourism is zero. The indirect contribution can be estimated using input–output (I–O) multipliers. We illustrate these points using Hawaii as an example.

Keywords: Hawaii; I–O analysis; tourism GDP; tourism satellite account.

23.1. Introduction

Tourism is not officially defined as an industry; its output is embedded in various standard industries. For that reason, it had been difficult to measure the size of its separate contribution to a country's or region's economy. The development of the tourism satellite account (TSA) more than two decades ago has been hailed as an important step in advancing our knowledge of the economic contributions of tourism. Frechtling, in his keynote address to the *Fifth UNWTO International Conference on Tourism Statistics* in 2009 and in his recent (2010, p. 136) primer on TSA notes that TSA is a 'method of measuring the *direct* contributions of tourism consumption to a national economy'. The unique feature of the TSA is that it 'derives from its nature as an account rather than a model and its observance of the principles of national economic accounting'. In 2008, the World Tourism Organization

(UNWTO) issued two publications that provide a detailed documentation of its methodology. The 2011 Edition of the *UNWTO Tourism Highlights* states (p. 2) that 'The most comprehensive way to measure the economic importance of both inbound and domestic tourism ... is through the *2008 Tourism Satellite Account (TSA) Recommended Methodological Framework,* approved by the UN Statistics Commission'.

Recently doubts have been raised regarding TSA's ability to measure *comprehensively* the contribution of tourism to the gross domestic product (GDP) of an economy. Smeral (2011, p. 154) writes, 'It should be considered that a major goal of the TSA project was to prevent the tourism industry from being dismissed as a minor economic player. Unfortunately, the TSA spans only those effects that are generated by the direct economic relationship between guest and producer and thus makes it difficult to compare tourism-related GDP in relation to the overall GDP, since the latter also includes indirect effects caused by economic linkages. Another problem arises from the fact that, in the TSA, expenditures from residents on business trips [which are generally considered to be intermediate consumption] are accounted for as final demand. On the other hand, intermediate consumption is not considered in GDP calculation, resulting in a biased comparison of the value added to GDP according to the TSA. It is clear that in measuring the TSA-based contribution made by the tourism industry to national/regional GDP, results must be adjusted for indirect effects and intermediate consumption'. (The words in [ ] were added.).

The appropriate procedure to calculate tourism's direct and indirect contributions to GDP is to subtract out domestic business travel from tourism expenditures and treat it as intermediate purchase, then use the resulting expenditures to calculate the direct contribution of tourism to GDP. In a second step apply input–output (I–O) multipliers to tourism expenditures net of domestic business travel to derive the indirect effects. As we explain below, there is no other way to derive the direct and indirect effects by using the TSA alone unless the import content of tourism is zero.

In this chapter, we demonstrate the application of this two-step procedure to an open regional economy, Hawaii, to estimate the contribution of tourism — direct and indirect — to Hawaii's GDP. We were also motivated by the conclusions of a study done by Laney (2009) for the First Hawaiian Bank which used ad hoc Keynesian-type multipliers to show that tourism accounts for about 40% of Hawaii's GDP. The bank study has become the 'bible' on the subject. We hoped to validate the bank's result using more rigorous methods. In our study, we find tourism's contribution

to Hawaii's GDP to be significantly less than what was estimated by Laney.

23.2. Why Is It Necessary to Use I–O to Estimate the Total Contribution of Tourism to GDP?

In his 2006 article, Smeral (2006) employed I–O multipliers to estimate the indirect contribution of tourism to GDP. Tourism's total (i.e., the direct and indirect) contribution can be derived directly and thus more simply from tourist expenditure data in the TSA without applying a second-step multiplier exercise as employed by Smeral, provided the import content of tourism expenditures is zero. To show this, we first examine the relationship between TSA and I–O.

Building the TSA account employs the same process as constructing the input–output (I–O) table. As in the I–O table, tourism demand in the TSA is presented in the supply and consumption account (Table 6 of the UNWTO TSA:RMF, 2008). The differences between the TSA and the I–O table are: (1) TSA does not show the inter-industry transaction while the I–O table does; and (2) TSA includes business travel spending in the tourism demand column while the I–O table includes business travel spending in the inter-industry transaction section of the table. In other words, business travel is treated in the TSA as final demand but is treated as an intermediate good in the I–O table. If we assume that there is no business travel spending, then the TSA account and the I–O table are basically the same. Moreover, if we assume that the import content of tourist expenditures is zero, then tourism demand is equal to tourism value-added. This derives from the well-known identity that GDP $= C + I + G + (X - M)$, where C is household consumption spending, I is investment spending, G is government spending on goods and services, and $(X - M)$ is net exports. For the sake of simplicity, we can assume all tourism spending (X_t) is in X. If the import content of tourism spending is zero, then $M_\mathrm{t} = 0$ and $(X_\mathrm{t} - M_\mathrm{t})$, is equal to X_t. X_t is tourism's contribution to GDP, or tourism value-added.

Many TSAs are constructed from I–O tables. Actually, there are two types of I–O models in use. The first I–O type is the Leontief I–O model, which was initially formulated by Wassily Leontief in the 1930s (Leontief, 1936). In the Leontief model, an industry produces only one commodity. It is referred to as the industry-by-industry model. The second model was introduced by the United Nations in 1968 (United Nations, 1968). This model extends the Leontief model by allowing industries to produce

more than one commodity. This model requires the construction of a 'Make' table and a 'Use' table so that this I–O model is often referred to as the make-use model. About half the I–O models in the world are Leontief type industry-by-industry I–O models (Guo *et al.*, 2003). The UNWTO TSA account is similar to the make-use I–O model, as is the US TTSA.

Accepting the notion that simplicity is a virtue, we pick the simpler industry-by-industry I–O model to demonstrate that our (call it the direct) approach using expenditure information contained in the TSA and Smeral's (call it the indirect) approach using a second-step I–O multiplier exercise to estimate tourism's indirect effects, yield the same value-added for tourism for any given level of tourism expenditure without imports. It requires little additional effort to substantiate our claim using a more complicated make-use I–O model.

We assume the economy has two industries, and each produces a single commodity. There are no domestic business travel and imports. Since TSA starts with tourism final demand, we separate the final demand into tourist and non-tourist expenditures. In Table 23.1, Industry 1 has final demand of \$10 million of which \$2 million are attributed to 'tourists' and the remaining \$8 million are attributed to 'non-tourists'. Industry 1 also has an intermediate demand of \$5 million, making its total output of \$15 million. Likewise, Industry 2 has tourism final demand of \$2 million, total final demand of \$12 million, \$9 million in intermediate demand, and total output of \$21 million. All of these numbers are arbitrarily selected. The "value- added" in Industry 1 is \$9 million, and \$13 million in Industry 2. In this economy, total tourism final demand is \$4 million.

From Table 23.1, tourism's shares of total outputs in Industries 1 and 2 are respectively 0.133 (= \$2 million/\$15 million) and 0.095 (=\$2 million/

Table 23.1. A simple I–O model with two industries without imports (Millions of dollars).

Industry	Industry 1	Industry 2	Intermediate demand	Final demand		Total output
				Non-tourist	Tourist	
Industry 1	2	3	5	8	2	15
Industry 2	4	5	9	10	2	21
Value added	9	13				
Total Input	15	21				

$21 million). In Industry 1, the ratio of its value added to its total output is 0.6 (=$9 million/$15 million), and in Industry 2 it is 0.619 (=$13 million/$21 million). Then total value added attributable to tourism is simply $2.438 million (=$2 million × 0.6 + $2 million × 0.619). The $2.438 million figure is commonly referred to in TSAs as tourism's direct contribution to GDP, or 'direct tourism GDP'.

However, we know from national income accounting that tourism's total contribution to GDP is actually $4 million (i.e., tourism's final demand) and not $2.438 million (recall that the import content of tourism is assumed to be zero). What are missing in the $2.438 million number are the indirect effects. Smeral suggests that the indirect effects can be calculated by applying a second-step multiplier exercise. We can show that he is correct.

1. First we determine the technical coefficient matrix A as

$$A = \begin{pmatrix} 2/15 & 3/21 \\ 4/15 & 5/21 \end{pmatrix};$$

2. Next, we determine the total requirement matrix (Leontief Inverse) as

$$(I - A)^{-1} = \begin{pmatrix} 1.224 & 0.230 \\ 0.429 & 1.393 \end{pmatrix}.$$

3. Total output due to tourism demand for Industries 1 and 2 respectively would then be

$$(I - A)^{-1} \begin{pmatrix} 2 \\ 2 \end{pmatrix} = \begin{pmatrix} 2.908 \\ 3.643 \end{pmatrix}.$$

4. Finally, value-added due to tourism demand for industries 1 and 2 respectively can be calculated as $1.745 m (= 2.908 × 0.600) and $2.255 m (= 3.643 × 0.619). Or, total value-added is exactly $4 m (=$1.745 m + $ 2.255 m).

The $4 million figure for tourism value-added derived by applying I–O multipliers to tourist expenditures is exactly the same number as the $4 million figure for tourism final demand in Table 23.1. In other words, if we already know the tourists' expenditures ($4 million in our example), that is tourism's *direct and indirect* contribution to GDP (again, recall that we assumed no imports). In the absence of imports, tourism's direct and indirect contribution to GDP can be calculated from information contained in the TSA; it is unnecessary to apply I–O multipliers in a second stage to derive the indirect effects. To be sure, in real world application, knowing tourists' expenditures alone does not yield tourism value-added,

as the issue of the import content of tourist expenditures still must be addressed.

Once we introduce imports, it is no longer possible to estimate tourism's indirect contribution to GDP using the TSA. While M is known in the expenditure equation of GDP, M_t is not available from the TSA. It should be noted that total imports M includes imports for final consumption (M_f), import contents of final demand (M_d, 'direct' import contents) as well as import contents of intermediate goods and services required to deliver final demand to the economy (M_i,"indirect" import contents). Likewise, imports related to tourism expenditures, M_t, also include three components — imports consumed directly by tourists (M_{tf}), import content of goods and services consumed by tourists (M_{td}), and the import content of intermediate goods and services required to deliver the final goods and services consumed directly by the tourists (M_{ti}).[1] M_f and M_d are usually presented collectively in a TSA table, and as a result, M_{tf} and M_{td} can be derived collectively in the TSA using the import ratio of each goods and services in the economy. Unfortunately, M_{ti} cannot be uncovered from the TSA because the TSA does not show inter-industry relationships; I–O does. Thus, with imports, we are no longer able to derive the tourism GDP ($= X_t - M_{tf} - M_{td} - M_{ti}$) directly from the TSA without knowing M_{ti}. Hence, to calculate the indirect contribution of tourism to GDP, it is necessary to resort to an I–O manipulation. We illustrate this by using Hawaii as an example (below).

23.3. The Direct Contribution of Tourism to Hawaii's GDP

In this section, we develop a tourism satellite account for Hawaii (HITSA) for 2010 to derive the direct contribution of tourism to Hawaii's GDP. We begin with tourism consumption in Hawaii. Tourism consumption in HITSA includes travel related expenditures within Hawaii by its own residents as well as by out-of-state visitors. The expenditure categories for this

[1] M_{tf} refers to goods sold directly to the tourists — a souvenir coffee cup made in China and imported for direct sale to tourists. In this case, the transportation, wholesale and retail margins are allocated to the respective industries and only the FOB value is recorded in M_{tf}. M_{td} refers to the import content of the goods and services purchased directly by the tourists — an Aloha shirt with material imported from China but the shirt is made in Hawaii. Finally, M_{ti} refers to the import content of the goods and services to support the delivery of the goods and services purchased directly by the tourists — the imported oil to generate the electricity used by the garment factory for making an Aloha shirt.

study include out-of-state visitor expenditures, overseas airline spending in Hawaii, out-of-state cruise line spending in Hawaii, Hawaii residents' interisland travel for leisure, business, and visiting friends and relatives, and travel by Hawaii government employees on official business. More details are provided in Appendix A.

Although it is claimed that the TSA is an account rather than a model, building the account employs the same process as constructing the I–O table. The TSA framework recommended by the UNWTO consists of 12 tourism commodities and 10 statistical tables. The basic data for the HITSA is the Hawaii State Input–Output (I–O) table which has the production account readily available. Hawaii's Input–Output table is an industry-by-industry table; each industry produces a 'representative' commodity.

For demonstration purposes, the actual HITSA is aggregated into five tourism industries and one 'all others' sector (Table 23.2). A tourism industry is defined as one that would cease to exist without tourism or would continue to exist only at a significantly reduced level of activity. The 'all others' represents commodities produced by non-tourism industries and purchased by tourists. These commodities include groceries, gasoline, educational services, professional services, personal and laundry services, and health services. The UNWTO's TSA methodology excludes these commodities. However, both the US and Canada's TSAs include them. We include them in the tourism sector for Hawaii. It is another source of downward bias when following the UNWTO's methodology.

Table 23.2 provides more information than the typical TSA production account. It is an abridged version of the Hawaii's I–O model showing only the tourism industries. Reading across a row shows sales by the row industry to the various column industries and final consumption. Reading down a column shows the purchases by the column industry from the various row industries.

The supply and consumption relations are presented in Table 23.3. This table is the industry-based version of the TSA. Appendix B shows the standard commodity-based version of the Hawaii TSA. Since Hawaii's I–O model is an industry-by-industry table, the industry-based version of Hawaii TSA provides a more direct comparison between the I–O and TSA. In 2010, tourism consumption in Hawaii totalled $14.7 billion; of that nearly $13.1 billion can be attributed to out-of-state visitors, airlines and cruise lines. The rest comprises spending by local businesses, residents, and state and local governments on travel in Hawaii.

Table 23.2. Transaction table for Hawaii's tourism: 2010 (Millions of US dollars).

	Industry								
Industry	Transportation	Trade	Accom. and rentals	Eating & drinking	Entertainment	All others	Total intermediate demand	Final demand	Total output
Transportation	308.3	38.7	159.3	37.7	5.9	626.1	1,176.0	4,665.9	5,841.9
Trade	59.3	143.2	183.0	124.2	4.1	1,721.9	2,235.8	7,829.0	10,064.8
Accom. & rentals	136.6	933.5	1,410.0	253.8	38.9	2,831.5	5,604.4	16,390.3	21,994.7
Eating & drinking	42.2	47.2	59.8	37.6	8.0	366.0	561.0	3,026.1	3,587.1
Entertainment	0.6	—	2.4	6.7	14.2	14.9	38.9	778.9	817.8
All others	1,644.9	1,420.3	3,968.9	825.5	111.1	11,880.6	19,851.2	47,627.1	67,478.3
Total intermediate inputs	2,192.0	2,582.9	5,783.5	1,285.5	182.3	17,441.0	29,467.2	80,317.3	109,784.5
Imports	661.0	984.9	658.4	485.4	42.4	10,725.3	13,557.3	14,869.9	
Value added	2,989.0	6,497.0	15,552.8	1,816.2	593.0	39,312.0	66,760.0		
Output	5,841.9	10,064.8	21,994.7	3,587.1	817.8	67,478.3	109,784.5		

Source: Authors' estimates based on Hawaii Department of Business, Economic Development & Tourism, 2007 Hawaii State Input–Output model.

Table 23.3. Consumption table for Hawaii's TSA: 2010 (Millions of US dollars).

	Supply			Consumption								
				Tourism consumption					Non-tourism consumption			
Industry	Domestic production	Imports for intermediate use	Total	Business travel (interme-diate)	Resident household	Govern-ment	Out-of-state visitor, airline, and cruise line expenditures	Total	Inter-mediate	Final demand	Total	Total con-sumption
Transportation	5,180.9	661.0	5,841.9	260.5	495.6	29.7	2,275.3	3,061.1	915.5	1,865.3	2,780.8	5,841.9
Trade	9,079.9	984.9	10,064.8	22.2	42.6	—	1,390.0	1,454.9	2,213.6	6,396.4	8,609.9	10,064.8
Accom. & rentals	21,336.3	658.4	21,994.7	199.9	310.6	12.8	5,536.9	6,060.2	5,404.5	10,530.0	15,934.5	21,994.7
Eating & Drinking	3,101.7	485.4	3,587.1	15.3	41.9	2.3	1,336.6	1,396.0	545.7	1,645.3	2,191.1	3,587.1
Entertainment	775.3	42.4	817.8	2.1	16.1	0.2	332.4	350.8	36.7	430.3	467.0	817.8
All others	56,753.1	10,725.3	67,478.3	—	—	—	706.9	706.9	19,851.2	46,920.2	66,771.5	67,478.3
Total	96,227.2	13,557.3	109,784.5	500.0	906.8	45.0	11,578.0	13,029.8	28,967.2	67,787.6	96,754.8	109,784.5
Imports for final use					143.2		1,562.2	1,705.4		13,164.5	13,164.5	14,869.9
Total	96,227.2	13,557.3	109,784.5	500.0	1,050.0	45.0	13,140.2	14,735.2	28,967.2	80,952.0	109,919.3	124,654.5

Source: Authors' estimates based on Hawaii Department of Business, Economic Development & Tourism, 2007 Hawaii State Input–Output model.

To calculate 'direct tourism GDP', we employed the ratio of tourism consumption to total consumption for each industry (the ratio is assumed to be the same for everyone, tourists or non-tourists). The six tourism industries (including 'all others') and their tourism industry ratios for 2010 are presented in Table 23.4. The tourism industry ratio (or Column C) represents the percentage of the total sales of the industry that goes to (i.e., sold to/purchased by) tourists. For example, Table 23.4 (Column D, Row 1) shows that 52% (=$ 3,061.1 million/$5,841.9 million $\times$ 100 from Table 23.3) of air transportation industry's sales went to tourists in 2010.

The 'direct tourism GDP' or tourism's direct contribution to Hawaii's GDP is displayed in the last Column (G) of Table 23.4. It is the sum of the tourism value-added by each of the six tourism industries, or nearly $8.2 billion. Tourism value-added is the difference between tourism output and tourism intermediate consumption (Column C minus Column F). For example, Table 23.4 (Column C, Row 3) shows that the accommodations industry sold nearly $6.1 billion in rentals to tourists in Hawaii in 2010; after subtracting nearly $1.8 billion of intermediate purchases (Table 23.4, Column F, Row 3) such as utilities, etc. from other industries, the value-added of this industry was $4.3 billion. For all six tourism industries, tourism value-added in 2010 totalled nearly $8.2 billion. The important observation is that the $8.2 billion is significantly less than the total amount of money spent on tourism consumption ($14.7 billion). Much of the difference can be attributed to the exclusion of tourism's indirect contribution to GDP as we explain in the next section.

23.4. Using I–O Multipliers to Derive Indirect Contribution of Tourism

From Table 23.5, we see that total adjusted tourism spending — i.e., tourism spending after netting out business travel — is $14.235 billion (= $14.735 − $0.500 billion). Imports for tourism final consumption, M_{tf}, is $1.705 billion (Column B, Row 8). The import content of tourism final demand, M_{td}, can be calculated using the import ratios of the tourism final demand as shown in Table 23.5; M_{td} is found to be $0.950 billion.

However, we are unable to estimate M_{ti} — the import content of intermediate goods and services — from the TSA. In other words, we are able to extract M_{tf} and M_{td} from the TSA but not M_{ti}; thus, we are unable to calculate tourism's total (i.e., direct plus indirect) contribution to GDP from expenditure information contained in the TSA alone.

Table 23.4. Direct contribution of Hawaii's tourism to GDP: (2010) (Millions of US dollars).

Industry	Total consumption	Tourism consumption	Tourism ratio	Total intermediate inputs	Tourism intermediate consumption	Tourism value added
A	B: From Table 23.3	C: From Table 23.3	$D = C/B$	E: From Table 23.2	$F = D \times E$	$G = C - F$
Transportation	5,841.9	3,061.1	0.52	2,852.9	1,494.88	1,566.2
Trade	10,064.8	1,454.9	0.14	3,567.8	515.72	939.1
Accom. & rentals	21,994.7	6,060.2	0.28	6,441.8	1,774.93	4,285.3
Eating & drinking	3,587.1	1,396.0	0.39	1,770.9	689.20	706.8
Entertainment	817.8	350.8	0.43	224.8	96.40	254.4
All others	67,478.3	706.9	0.01	28,166.3	295.06	411.8
Total	109,784.5	13,029.8	0.12	43,024.5	4,866.2	8,163.6

Table 23.5. Direct import content of tourism consumption: 2010 (Millions of US dollars).

Industry	Total tourism consumption	Business travel	Adjusted tourism consumption	Import ratio	Import content
A	*B*: From Table 23.3	*C*: From Table 23.3	$D = B - C$	*E*: Calculated from Table 23.3	$F = D \times E$
Transportation	3,061.1	260.5	2,800.6	0.113	316.9
Trade	1,454.9	22.2	1,432.6	0.098	140.2
Accom. & rentals	6,060.2	199.9	5,860.3	0.030	175.4
Eating & drinking	1,396.0	15.3	1,380.8	0.135	186.8
Entertainment	350.8	2.1	348.6	0.052	18.1
All others	706.9	—	706.9	0.159	112.4
Sub-total	13,029.8	500.0	12,529.8		949.7
Imports for final use	1,705.4		1,705.4		
Total	14,735.2	500.0	14,235.2		

One way to uncover M_{ti} is to use the import multipliers available through the I–O model. Import multipliers[2] provide the direct and indirect imports necessary to deliver a dollar worth of goods and services for final consumption (final demand). Table 23.6 shows that the total (direct and indirect) imports necessary to support tourism final demand amounts to \$1.599 billion. Therefore, M_{ti} can be estimated as \$0.649 billion (=\$1.599–\$0.950 billion). Finally, tourism GDP can now be estimated as \$10.931 billion (= \$14.735b. – \$0.500b. – \$1.705b. – \$0.950b. – \$0.649b.).

Alternatively, we can derive total tourism GDP using the value-added multipliers from the I–O model. Similar to import multipliers, value-added multipliers[3] provide the direct and indirect value-added associated with

[2]Import multiplier can be derived as follows: $i\ (I-A)^{-1}$, where i is the row vector of import coefficients (ratios), i.e., the import share per unit of output; and $(I-A)^{-1}$ is the traditional Leontief total requirement matrix.

[3]Similarly, value-added multiplier can be derived as follows: $v\ (I-A)^{-1}$, where v is the row vector of value-added coefficients, i.e., the value-added share per unit of output; and $(I-A)^{-1}$ is the traditional Leontief total requirement matrix.

Table 23.6. Direct and indirect import content of tourism consumption: 2010 (Millions of US dollars).

Industry	Adjusted tourism consumption	Import multiplier	Direct and indirect import content
A	*B*: From Table 23.5	*C*: From I–O calculation	$D = B \times C$
Transportation	2,800.6	0.185	518.1
Trade	1,432.6	0.137	196.6
Accom. & rentals	5,860.3	0.075	437.3
Eating & drinking	1,380.8	0.197	271.4
Entertainment	348.6	0.089	30.9
All others	706.9	0.204	144.5
Sub-total	12,529.8		1,598.8
Imports for final use	1,705.4		1,705.4
Total	14,235.2		3,304.2

Table 23.7. Total value-added (GDP) of tourism: 2010 (Millions of US dollars).

Industry	Adjusted tourism consumption	Value-added multiplier	Direct and indirect value-added
A	*B*: From Table 23.6	*C*: From I–O calculation	$D = B \times C$
Transportation	2,800.6	0.815	2,282.4
Trade	1,432.6	0.863	1,236.1
Accom. & rentals	5,860.3	0.925	5,423.0
Eating & drinking	1,380.8	0.803	1,109.4
Entertainment	348.6	0.911	317.7
All others	706.9	0.796	562.4
Sub-total	12,529.8		10,931.0
Imports for final use	1,705.4		
Total	14,235.2		

the delivery of a dollar worth of goods and services for final consumption. Table 23.7 shows that the total value-added of tourism to GDP is \$10.931 billion, which is the same as that derived by subtracting the three tourism related imports from final tourism expenditures. This leads to an important

observation that is often overlooked; that is, the value of tourism's net exports (i.e., tourism's final expenditures minus tourism related imports) includes tourism's direct and indirect contributions to a country/region's GDP. These results also indicate that one dollar of final tourism spending generates (directly and indirectly) less than one dollar of GDP in Hawaii.

23.5. Summary of Findings and Conclusion

The TSA has been used in over 70 countries to measure the contribution of tourism to national economies (Aydin, 2008). It has also been criticised for its failure to capture fully tourism's contribution to a destination's GDP. The TSA typically only displays tourism's direct contribution to GDP and not its indirect contribution. We show that the TSA cannot be used to generate the indirect contribution of tourism to GDP when there are imports. The only practical solution is to apply input–output multipliers in a second step manipulation to generate the indirect effects. In addition, travel expenditures by local businesses within the destination, which are treated as final demand in the TSA, must first be netted out.

Using Hawaii as an example, in 2010, total tourism spending by Hawaii's residents and out-of-state visitors in Hawaii was \$14.735 billion (see Table 23.5). Subtracting domestic business travel spending of \$500 million (to exclude intermediate goods) yields tourism final demand in Hawaii of \$14.235 billion. Tourism related imports were \$3.304 billion, (see Table 23.5) or about 23 cents for every dollar of final tourism expenditure in Hawaii. The difference between the two figures (\$14.235 billion minus \$3.304 billion) yields tourism's direct and indirect contribution of \$10.931 billion to Hawaii's 2010 GDP (valued at \$66.760 billion). From these numbers, it is clear that making the two adjustments suggested by Smeral — one to exclude resident business travel spending and the other to estimate tourism's indirect contributions to GDP — yields a more comprehensive measure of tourism's contribution to Hawaii's economy. Tourism's direct contribution to Hawaii's GDP in 2010 was \$8.2 billion; but a more accurate picture of its contribution was \$10.931 billion, a difference of 33%. In 2010, tourism — which in our study includes both inbound and domestic tourism — (directly and indirectly) comprised 16.4% of Hawaii's gross domestic product. If we include the induced effects, the percentage rises to 22%, or slightly more than half of Laney's estimate of 40% even though our number includes domestic (i.e., Hawaii resident) spending on travel and tourism within the state and Laney's does not.

Finally, one of the things we learned from this exercise is that if a destination already has an I–O table, it does not need a TSA to estimate the contribution of tourism to GDP.

Appendix A

Data for Hawaii TSA

Expenditures of tourists are the principal data used in calculating tourism consumption in the HITSA. Expenditures represent the amount of money paid to purchase consumption goods and services before, during, and after a trip; this includes valuables for personal use or gifts. Additionally, expenditures by tourists themselves as well as expenses that are paid for or reimbursed by others are counted as expenditures. The expenditure categories for this study include: out-of-state visitor expenditures; overseas airline spending in Hawaii; out-of-state cruise line spending in Hawaii; Hawaii residents travelling interisland for leisure, business, and visiting friends and relatives; and Hawaii government employees travelling on government business.

Data on out-of-state visitor expenditures are collected by the State of Hawaii through intercept surveys at all the passenger airports in Hawaii for air visitors, and on-board surveys for all cruise ships touring the Hawaiians islands. For visitors arriving by air, trans-Pacific airfare is not included in the visitor expenditures survey. For cruise visitors arriving on non-US flagged ships, the price of the cruise package (which usually covers airfare, room and board, entertainment, and activities on-board) is not included in visitor spending. Only their spending on-shore is counted.

Cruise line spending in Hawaii is included. Cruise lines purchase food, fuel, entertainment, and maintenance services, etc. Cruise lines also hire shipping agents in Hawaii to manage their ship operations. Shipping agents are included in the sector of travel arrangement services in this study. Out-of-state cruise line spending was estimated based on the cruise line surveys conducted in 2008 by Hawaii Tourism Authority (HTA).

By contrast, spending by domestic cruise lines is not separately added because the price of the cruise and on-ship spending is taxed by the state and therefore included in the visitor expenditure numbers collected by the State. Similarly, interisland airfares are already included in visitor expenditures so that the spending by interisland airlines is not listed as a separate category to avoid double counting.

Overseas airline spending in Hawaii is included in tourism consumption. Overseas airlines include all the airlines that do not have a hub centre in Hawaii such as Japan Airlines, Northwest, and United Airlines. These airlines have offices in Hawaii, purchase supplies in Hawaii, and hire Hawaii residents as employees. Overseas airline operations accounted for more than one third of the air transportation sector in Hawaii. For the purpose of this study, overseas airline spending is assumed to be equivalent to half of the price of a round trip ticket. This assumption effectively divides the cost

of providing air transportation evenly between Hawaii and the originating destination.

Following the framework of TSA, interisland spending on travel by Hawaii residents for the purpose of leisure and business are included as part of tourism consumption. This includes residents' travel on vacation, visiting friends and relatives, and on private and government business. Travel spending by residents commuting interisland for work and resident spending on their own island of residence are not included as tourism consumption. Interisland spending by residents is estimated based on the interisland resident passenger count derived from the Hawaii Department of Transportation report, the HTA/DBEDT interisland visitor survey, and the Hawaii State Input-Output models.

Appendix B

Commodity-Based Hawaii TSA

Table 23.B1. Production of commodities by industry: Hawaii 2010 (Millions of US dollars).

	Industry						
Commodity	Transpor-tation	Trade	Accom. & rentals	Eating & drinking	Entertain-ment	All others	Total
Transpor -tation	5,180.9						5,180.9
Trade margins		9,079.9					9,079.9
Accom. & rentals			21,336.3				21,336.3
Eating & Drinking				3,101.7			3,101.7
Entertain -ment					775.3		775.3
All others						56,753.1	56,753.1
Industry output	5,180.9	9,079.9	21,336.3	3,101.7	775.3	56,753.1	96,227.2
Intermediate purchase	2,192.0	2,582.9	5,783.5	1,285.5	182.3	17,441.0	29,467.2
Value Added	2,989.0	6,497.0	15,552.8	1,816.2	593.0	39,312.0	66,760.0

Source: Authors' Estimates based on Hawaii Department of Business, Economic Development & Tourism, 2007 Hawaii State Input–Output model.

Table 23.B2. Supply and consumption of commodities: Hawaii 2010 (Millions of US dollars).

	Supply	Consumption								
		Tourism consumption					Non-tourism consumption			
Commodity	Domestic production	Business travel (interme-diate)	Resident household	Govern-ment	Out-of-state visitor, airline, and cruise line expenditures	Total	Inter-mediate	Final demand	Total	Total con-sumption
Transpor-tation	5,180.9	231.0	439.5	26.3	2,017.9	2,714.7	811.9	1,654.2	2,466.2	5,180.9
Trade marings	9,079.9	20.0	38.4		1,254.0	1,312.4	1,997.0	5,770.5	7,767.5	9,079.9
Accom. & rentals	21,336.3	193.9	301.3	12.4	5,371.2	5,878.8	5,242.7	10,214.8	15,457.5	21,336.3
Eating & Drinking	3,101.7	13.2	36.2	2.0	1,155.7	1,207.2	471.9	1,422.7	1,894.5	3,101.7
Enter-tainment	775.3	2.0	15.3	0.2	315.2	332.6	34.8	408.0	442.8	775.4
All others	56,753.1				594.5	594.5	16,696.0	39,462.5	56,158.5	56,753.1
Total	87,147.3	460.2	830.8	40.9	10,708.4	12,040.3	25,254.2	58,932.7	84,186.9	96,227.2

Source: Authors' Estimates based on Hawaii Department of Business, Economic Development & Tourism, 2007 Hawaii State Input–Output model.

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Chapter 24

THE ECONOMIC IMPACT OF TOURISM IN THE CENTRAL REGION OF PORTUGAL: A REGIONAL ECONOMIC IMPACT STUDY WITH MARKETING IMPLICATIONS

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Abstract: This study presents an integrated model to estimate the economic impact of tourism in the Central Region of Portugal. In order to accomplish this objective a visitor survey was undertaken and 2,876 responses were collected to measure tourist expenditures. The tourist multipliers (output, household income and employment) were obtained through a regional input–output model. The model developed in this study was used to estimate the different types of economic impacts (direct, indirect and induced) and to identify the segments of greatest economic value to Central Region of Portugal. The results obtained provide useful information for the definition of marketing and development strategies in the region.

Keywords: Employment multipliers; expenditure pattern; household income multipliers; input–output model; output multipliers; regional economy; segmentation.

24.1. Introduction

Research undertaken on regional development suggests, in many cases, that tourism is an economic activity with a large potential for enhancing this development. The understanding of this potential should be based on economic impact studies for destination regions. Despite the relevance of this topic, already visible in the literature on tourism economics, this area of research may still be considered incipient, with the first studies undertaken in the 1970s (Mathieson and Wall, 1982; Eusébio, 2006).

This chapter aims to analyse the impacts of tourism for one of the regions within Portugal — the Central Region — by applying an innovative methodological approach that integrates two disciplinary fields that both play an important role in sustainable development of tourist destinations — marketing and economics.

The connection between the economic and marketing approaches will help answer crucial questions in tourism development of destination regions, by identifying those economic variables that are subject to transformations resulting from changes in tourism demand and by quantifying these changes according to the type of visitor being analysed. The integrated approach that will be presented in this chapter may help fill some gaps in the literature referring to this topic. As Wall (1996) states, despite an already considerable knowledge existing on the consequences of tourism for destination regions in general, little is still known on the type of tourists that trigger these impacts. It is in this context that, in this study, an integrated model is presented that permits us to quantify the total economic impact (output, household income and employment) of each visitor to the Central Region of Portugal. Based on this information, in order to identify the segments of visitors with the highest economic impact in this destination, a segmentation model was developed. The results obtained in this research provide relevant information for the definition of marketing and development strategies in the region under analysis.

The chapter is organised in four sections. The first section corresponds to the introduction of the chapter. The second section presents a brief literature review concerning the economic impact of tourism and the most important method used to quantify tourist multiplier effects. The third section includes the methods used to quantify tourist expenditure, multiplier effects, the total economic impact of each visitor to the Central Region of Portugal and to segment the market based on the total economic impact of the visitors. The fourth section presents the results obtained in this research in terms of segments identified and the characteristics of each segment. Finally, the chapter ends with a discussion of results and some implications for development of the Central Region of Portugal.

24.2. Literature Review

Although there is a general consensus about the fact that tourism is nowadays one of the most economically dynamic activities worldwide (Mathieson and Wall, 1982; West, 1993; Fletcher and Archer, 1991; Dwyer *et al.*, 2005), there are still many doubts about the role that it actually plays in economic development. It is due to these doubts that the activity suffers, in most countries and specifically in Portugal, from a certain marginalisation in economic policies.

According to Mathieson and Wall (1982), the first studies that were undertaken regarding the evaluation of the economic impacts of tourism,

namely studies undertaken by Ogilvie (1933), Alexander (1953) and Waugh (1962), did not evaluate the totality of economic effects that the activity may produce in destination areas. Later, several studies were undertaken that sought to quantify the economic effects of tourism, with an emphasis on benefits, on national economies (e.g., Liu *et al.,* 1984; Lee and Kwon, 1995; Hansen and Jensen, 1996; Lee and Kwon, 1997; Pearce, 1999; Lejárraga and Waskenhorts, 2010) as well as on island destinations (e.g., Archer, 1995; Biçak and Altinary, 1996; Archer and Fletcher, 1996; Narayan, 2004; Steenge and Van De Steeg, 2010). As a result of the increasing relevance of tourism, a considerable increase in studies that aim to evaluate the economic effects of tourism, both on regional economies (e.g., Johnson *et al.,* 1989; Fresenmair *et al.,* 1989; Bergstrom *et al.,* 1990; Fleischer and Freeman, 1997; Wagner, 1997; Leones *et al.,* 1998; Manente, 1999; Erikson and Ahmt, 1999) and on local economies (e.g., Garrison, 1974; Lichty and Steines, 1982; Liu and Var, 1983; Uysal *et al.,* 1992; Braun, 1992; West and Gamage, 1997; Wood, 2005; Bowitz and Ibenholt, 2009) were completed.

The evaluation of the economic impacts of tourism on regional economies implies the quantification of tourism demand. According to the recommendations of tourism satellite account (WTO, 1999), tourist demand of a particular destination integrates tourist consumption and collective tourist consumption as well as investment. In this approach, the quantification of the total tourism impact for the destination regions would imply undertaking studies of the economic impact that integrate all components of tourism demand. However, the substantial difficulty in quantifying all such components has essentially given rise to studies that consider only one of its components. A literature review reveals that the majority of studies seek to evaluate the effect of expenditure made by visitors to the destination. In this study, it is the approach used, and only expenditure undertaken by visitors to the Central Region of Portugal was estimated.

The consumption of goods and services by visitors typically brings both positive and negative impacts on the economy of tourism destinations. Several authors have reflected on this topic (e.g., Sawamiphakdi, 1989; Mathieson and Wall, 1982; Dwyer and Forsyth, 1997; Cooper *et al.*, 1998; Page *et al.*, 2001). Some of the most cited economic benefits are: increasing opportunities for local commerce and industries, possible development of new industries, the diversification of the regional productive structure, creation of employment, income generation and increase of public revenues. On the other hand, frequently identified negative externalities related to tourism are: in the first place, inflation, but opportunity costs and excessive dependence of regional economies on tourism (Eusébio, 2006)

are also suggested. The present study focuses only on economic benefits, more precisely on the total impact that visitor expenditure may generate on destination regions in terms of production, household income and employment. The quantification of these total effects implies the measure of both primary (direct) and secondary (indirect plus induced) effects of tourism.

The direct economic benefits, also designated primary benefits, result directly from expenditure made by visitors when consuming goods and services at the destination. This expenditure will contribute to an increase in: receipts of those industry units that sell goods and services to visitors; the income of those who are employed in these industries; the income of those who own and invest in these industries; the income of those who hire or rent equipment and/or installations for the production of these goods and services; the income of the financial sector due to capital remuneration; the level of employment, both in the public and private sector and, last but not least, taxes paid to the Government resulting from consumption of local goods and services by visitors. Related to the direct economic benefits caused by the increase of tourist expenditure at the destination, indirect benefits do occur, as a consequence of interdependencies that exist between economic activities at a destination, as well as induced benefits, as a result from the economic effects caused through the increase of household income, related to the direct and indirect effects of tourist expenditure. The evaluation of total economic benefits (direct, indirect and induced) of tourist expenditure for tourism destination regions implies the quantification of the total value of expenditure plus the tourism multipliers.

The multiplier assumes, indeed, a central position in economic impact studies in tourism (Hughes, 1994). This concept is based on the recognition of the interdependency amongst diverse sectors within an economy, with a cycle of interdependencies occurring whenever there is an increase in the final demand for a specific product (Fletcher and Archer, 1991). The multiplier concept has been studied, for more than 100 years now, beginning with Bagehot (1882) analysing the adverse effects of the reduction of one industry caused on others within the same economic system. According to Fletcher and Archer (1991), even though many researchers (e.g., Pigou, 1929; Mund, 1939; Giblin, 1930; Warming, 1930) have explored several of the essential elements of multiplier analysis during the 1930s, it was particularly the seminal work by R. F. Kahn and J. M. Keynes, establishing the theory of macro-models, that provided the basis for all modern multiplier models. It was in the same decade that Leontief's input–output

model set another decisive basis for the development of quantification studies concerning tourism multipliers.

Although Kahn's multiplier model had already been presented in the decade of the 1930s and Leontief's input–output model had found its first practical application in the 1940s, the first multiplier studies in the field of tourism were undertaken only in the 1970s, namely by Archer and colleagues. In 1971, Archer and Owen developed a model for calculating the tourism multiplier ('Tourist Regional Multiplier Model'), which was later improved, with contributions by Henderson and Cousins (1975) and by Wheeller (1974) (as cited by Archer, 1976). From then on, many other researches have been using multipliers to estimate the economic impacts of tourism.

Of the various types of multipliers used in economic impact studies (the multiplier of sales or transactions; the multiplier of output; the multiplier of Government revenues; the multiplier of income and the multiplier of employment), the most frequently used in economic impact studies in tourism are output multipliers (Licthty and Steines, 1982; Liu and Var, 1983; Liu *et al.*, 1984; Fesenmair *et al.*, 1989; Bergstrom *et al.*, 1990; Braun, 1992; Biçak and Altinary, 1996; Fleischer and Freeman, 1997; Gest and Gamage, 1997; Freeman and Sultan, 1997; Raguraman, 1997; Dwyer *et al.*, 2005; Lee and Taylor, 2005; Eusébio, 2006), income multipliers (Liu *et al.*, 1984; Bergstrom *et al.*, 1990; Braun, 1992; Liu and Var, 1983; Archer, 1995; Archer and Fletcher, 1996; Lee and Kwon, 1997; Fleischer and Freeman, 1997; West and Gamage, 1997; Freeman and Sultan, 1997; Raguraman, 1997; Daniels *et al.*, 2004; Dwyer *et al.*, 2005; Lee and Taylor, 2005; Eusébio, 2006; Mayer *et al.*, 2010; Steenge and Steeg, 2010) as well as employment multipliers (Bergstrom *et al.*, 1990; Braun, 1992; Lee and Kwon, 1995; Archer and Fletcher, 1996; Gest and Gamage, 1997; Freeman and Sultan, 1997; Manente, 2000; Dwyer *et al.*, 2005; Lee and Taylor, 2005; Eusébio, 2006).

The input–ouput model is, according to several authors (e.g., Bull, 1996; Mathieson and Wall, 1982; Archer and Fletcher, 1996), the most often used in studies evaluating the economic impacts of tourism, since it is the one that permits one to obtain, in a rigorous and clear form, its secondary effects. Apart from this, it allows a comparison of the economic impact of tourism with that of other sectors. Several studies published in international journals have used this kind of model for evaluating economic impacts (e.g., Lichty and Steinnes, 1982; Liu *et al.*, 1984; Fresenmair *et al.,* 1989; Johnson *et al.,* 1989; Bergstrom *et al.,* 1990; Braun, 1992; Acher, 1995; Lee and Kwon, 1995; Archer and Fletcher, 1996; Biçak and Altinary, 1996; Freeman and Sultan,

1997; Raguraman, 1997; Lee and Kwon, 1997; West and Gamage, 1997; Zhou *et al.*, 1997; Leones *et al.*, 1998; Erikson and Ahmt, 1999; Frechtling and Horváth, 1999; Manente, 2000; Daniels *et al.*, 2004; Dwyer *et al.*, 2005; Eusébio, 2006; Hjerpe and Kim, 2007; Porter and Fletcher, 2008; Bonn and Harrington, 2008; Leeuwen *et al.*, 2009; Mayer *et al.*, 2010). The relevance of this type of model to estimate tourist multipliers effects is highlighted by several authors (e.g., Frechtling and Horváth, 1999; Fletcher and Archer, 1991; Archer, 1995; Liu and Var, 1983). Baaijens *et al.* (1998) reinforce this idea, suggesting that input–output models provide very detailed and relevant information on the consequences of tourist expenditure for destination economies. Based on this evidence, input–output model were selected to quantify tourist multipliers in this research. Most of the studies published using input–output models were developed by public and private institutions and by other researchers. There are only a few studies referred to in the literature that created a specific input–ouput model for quantifying tourism multipliers.

Despite the large number of studies quantifying the total economic benefits of tourism for a destination, a limited number of these studies examined the marketing implications of their analysis. In order to use tourism economic impact studies to define marketing strategies for destinations, it is crucial to analyse the economic impact of each visitor. Based on this information, segmentation approaches can be used to identify the groups of visitors with the highest economic value to the destination. However, the literature is this field is scarce. The studies of segmentation undertaken in this domain have used only the visitor expenditure as variable of segmentation (e.g., Pizam and Reichel, 1979; Spotts and Mahoney, 1991; Mudambi and Baum, 1997; Agarwal and Yochum, 1999; Mok and Iverson, 2000; Perez and Sampol, 2000; Díaz-Pérez *et al.*, 2005; Legohérel and Wong, 2006; Wang *et al.*, 2006; Laesser and Crouch, 2006; Lima *et al.*, 2010). This study extends the literature in this field by presenting an integrated model that provides information about the groups of visitors that generate the highest economic benefits (direct, indirect and induced) to the destination. The model used and the results obtained will be presented in the next sections.

24.3. Empirical Research

The region analysed in this chapter is located in the centre of Portugal, and accounts for about 30% of Portugal's surface area and about 23% of the total population of the country (INE, 2010). In terms of tourism, although this region offers very interesting natural and cultural tourism resources

(beaches, mountains, protected areas, forests, rivers, caves and thermal spas, historic villages, museums, cathedrals, castles, churches, monasteries, handicraft) and a rich regional gastronomy where cheese and wine stand out, tourism is not very important yet. At the moment, this region contributes only 23% of the country's accommodation capacity (existing on the mainland), and accounts for approximately 12% of bednights registered in all accommodations units, despite corresponding to about 30% of the country's territory. The domestic market is the most important tourist market of this region. Domestic tourists comprise about 66% of total hotel demand (nights spent). Only about 34% of the hotel demand of this region corresponds to the foreign market. The most important foreign markets are, in decreasing order of relevance: Spain, France, Italy, Germany, Britain, USA, Netherlands, Brazil, Belgium, and Japan (INE, 2010). In this context, in order to develop tourism in this region of Portugal, it is crucial to implement strategies to achieve sustainable development. In this section, an integrated model designed to identify the segments of the highest economic value to the Central Region of Portugal is proposed (Fig. 24.1). The results obtained from this model will be important contributions for defining these sustainable development strategies.

For the purpose of implementing the model presented in Fig. 24.1, a triangulation of methods was used: (i) A visitor survey to estimate visitor expenditure; (ii) An input–output model to quantify multiplier effects; (iii) mathematical equations to quantify total economic impacts; and (iv) A segmentation model to identify homogenous groups of visitors in terms of their total economic impact on the Central Region of Portugal.

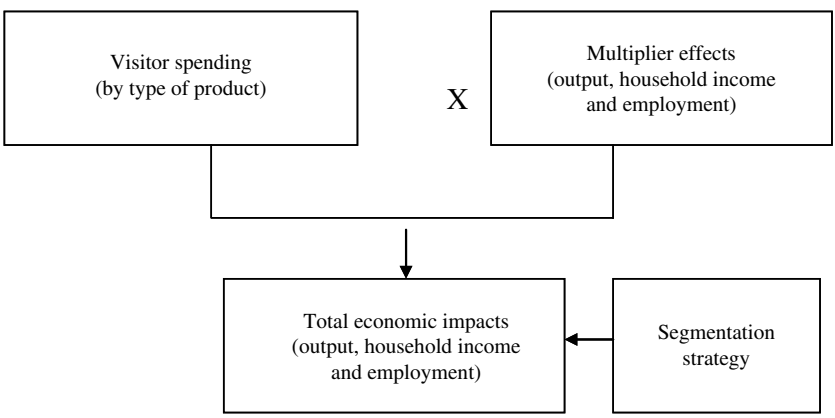


Fig. 24.1. Integrated model used.

24.3.1. *Visitor Survey — to quantify tourism expenditure*

With a view to quantifying visitor expenditure in the Central Region of Portugal, a visitor survey was undertaken. As it was not possible to quantify the total dimension of the population under study before the application of the survey and without any sampling framework available, the multistage cluster sampling technique (Davis, 1996) was used. This type of sampling technique is particularly useful when trying to survey visitors to a region with a considerable spatial dimension (Kastenholz, 2005; Eusébio, 2006), as is the case here. The application of multistage cluster sampling consisted of the division of the region into three sub-regions, in a way reflecting the heterogeneity of the spatial distribution of tourism demand and the type of tourism products offered, the division of the year into three seasons, as a way to account for the temporal variability of tourism demand, and finally the distinction of three groups of tourism supply to account for distinct types of tourism demand in terms of motivation and length of stay.

The survey was applied via direct methods (with qualified and trained interviewers). The dimension of the sample was determined based on the sampling process used in this study and considering that the most important variable of the survey was a continuous variable (tourist expenditure) the dimension of the sample was obtained using the following equation:

$$n = \frac{\left(Z\frac{\alpha}{2}\right)^2 S^2}{D^2}, \tag{24.1}$$

where:

n — dimension of sample; D — amplitude of confidence interval; S — estimation of standard deviation of the population; Z — confidence interval.

Without any prior data available that might have helped identify the amplitude of the confidence interval and the estimation of the standard deviation, it was considered most adequate to define an initial sample dimension of 2,000 responses. During the one-year-long surveying process this value was re-evaluated in order to verify its appropriateness. This process resulted in a total number of 2,876 valid responses from visitors to the Central Region of Portugal.

The questionnaire applied in this research includes questions about: The visitor profile and travel behaviour, including specific question related to length of stay and expenditure pattern. The domestic visitors were asked about expenditure made before the trip, using for this purpose the respective WTO recommendations on the quantification of tourism expenditure (WTO, 1995), and the expenditure made during the trip. Those visitors from other Portuguese regions and from other countries were only asked about

expenditure made during their stay within the Central Region. The questions about this expenditure were based on the categorisation of tourist expenditure suggested by WTO (WTO, 1995) and on the recommendations of Yuan (2001). Based on these recommendations, individual respondents were asked to respond for the travel group about their daily expenditure, choosing for the purpose one specific day of their trip. The description of daily expenditure made was given with the help of a table which classified 43 types of expenditure, according to recommendations of the tourism satellite account, into seven categories (tour package, accommodation, food and drinks, transport, recreation, cultural and sports activities, shopping and others). The expenditure made in the context of package tours was later disaggregated, allowing an estimation of the expenditure made that stayed within the region under analysis. After collecting data on tourist expenditure from visitors, a categorisation of this expenditure was carried out, based on a classification of the products (31) used in the construction of Portuguese National input-output tables (Table 24.1).

24.3.2. *Regional input–output model — to quantify tourism multipliers*

Considering the different methodologies available for calculating tourism multipliers, and considering the reasons explained in the literature review section, the input–output model was selected to quantify the multiplier effects of tourism expenditure in the Central Region of Portugal. The development of this model occurred in three phases. First, since there are no input–output tables for Portuguese regions, an input–output table for the Central Region of Portugal had to be created. For this purpose, a top-down approach was used, based on the national 'make and use tables' for the year 2003, and further considering the indicators published by National Statistical Institute of Portugal (INE) for the Central Region of Portugal and with a view to creating a make and use input–output table for this region. Secondly, based on the regional make and use input–output table created in the first phase of this research, an open input–output model was developed. Finally, for the purpose of quantifying the total impacts of tourism expenditure (direct, indirect, and induced) a closed input–output model was constructed based on the make and use input-output table presented in Table 24.2. The closed input–output model developed in this research was further used to quantify the total normal multipliers also designated as Keynesian multipliers (output, household income and employment), as indicated in Table 24.3.

Table 24.1. Classification of the products (31) used in the construction of input–output matrices.

AA	**Agriculture, farming of animals, hunting and forestry**
BB	**Fishing**
CA	Mining and quarrying of energy producing materials
CB	Mining and quarrying, except of energy producing materials
DA	**Manufacture of food products, beverages and tobacco**
DB	**Manufacture of textiles and textiles products**
DC	**Manufacture of leather and leather products**
DD	Manufacture of wood and wood products
DE	**Manufacture of pulp, paper and paper products; publishing and printing**
DF	**Manufacture of coke, refined petroleum products and nuclear fuel**
DG	**Manufacture of chemicals, chemical products and man-made fibres**
DH	Manufacture of rubber and plastic products
DI	**Manufacture of other non-metallic mineral products**
DJ	Manufacture of basic metals and fabricated metal products
DK	Manufacture of machinery and equipment, n.e.c
DL	**Manufacture of electrical and optical equipment**
DM	**Manufacture of transport equipment**
DN	**Manufacturing, n.e.c**
EE	Production of electricity, of gas and of water supply
FF	Construction
GG	**Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods**
HH	**Hotels and restaurants**
II	**Transport, storage and communication**
JJ	**Financial intermediation**
KK	**Real estate, renting and business activities**
LL	Public administration and defence; compulsory social security
MM	Education
NN	**Health and social work**
OO	**Other community, social and personal service activities**
PP	Activities of households as employers of domestic staff and production activities of households for own use

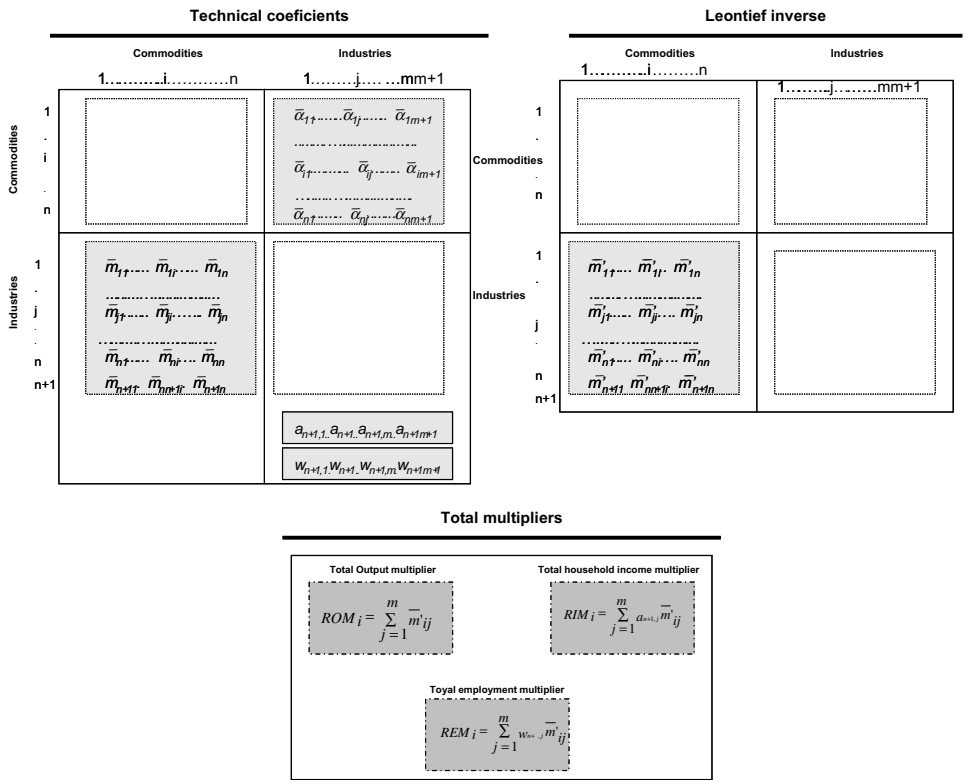
Legend: Those products that visitors typically spent money on are presented in **bold.**

Normal multipliers provide a direct account of output, income, employment or other economic variables analysed generated per visitor euro spent. These are the multipliers analysed in this research, as suggested by Liu *et al.* (1984). Normal multipliers are a better measure of overall benefits when

Table 24.2. Structure of the input-output table of the Central Region of Portugal.

	Commodities	Industries		Final demand Government	FBCF	Exports		Total Outputs
Commodities		*Use*	Personal consumption expenditures	Government purchases of good and services	Gross private domestic investment	other countries	other regions	
Industries	*Make*							
		Household income						
Imports	Other countries Other regions							
Value Added		Except household income						
Total inputs								
Employees		Number ofemployees						

Table 24.3. Structure of input–output model used to calculate the total multipliers (output, household income and employment) of tourism expenditure carried out in the Central Region of Portugal.



compared with ratio multipliers, since this type of multiplier gives only the extent of secondary effects generated relative to the direct effect obtained.

24.3.3. *Mathematical equations: to quantify total economic benefits of each visitor*

With a view to quantifying the total economic impact, in terms of output, household income and employment, of each visitor interviewed in this research in the Central Region of Portugal, the equations presented in the Table 24.4 were used.

Table 24.4. Methodology used to quantify total economic impacts of individual visitors to the central region of Portugal.

Economic impacts of individual visitors to the central region of Portugal	Mathematical formalisation
Household income impact (THII)	$THII_j = \sum_{i=1}^{n} TVE_{j,i} \times CRHIM_i$
Employment impact (TEI)	$TEI_j = \sum_{i=1}^{n} TVE_{j,i} \times CREM_i$
Output impact (TOI)	$TOI_j = \sum_{i=1}^{n} TVE_{j,i} \times CROM_i$

Where:
$j = 1, \ldots, n$ — number of visitors interviewed; $i = 1, \ldots, n$ –> products consumed by visitors;
TVE–> total visitor expenditure; $CRHIM$–> regional household income multiplier;
$CREM$–> regional employment multiplier; $CROM$–> regional output multiplier.

24.3.4. *Segmentation model: to identify the segments of greatest economic value*

In order to segment the visitors to the Central Region of Portugal interviewed in this research, a segmentation strategy based on the total economic impact of each visitor (total impact on household income, total impact on output and total impact on employment) was used. For this purpose, a hierarchical cluster analysis was carried out. Ward's method and the Squared Euclidean distance were adopted in this analysis. Finally, the clusters were compared using Chi-square tests and ANOVAs, in order to identify the statistically significant differences existing among them, regarding: expenditure, multiplier effects, total economic impacts, socio-demographic profile and travel behaviour. All the assumptions of Chi-square tests and ANOVAs were tested. When the assumptions of the ANOVA test were not verified the Kruskall–Wallis test was used.

24.4. Discussion of Results

24.4.1. *Segments of visitors based on their total economic impact on the central region of Portugal*

Data of the agglomeration schedule provide by hierarchical cluster analysis carried out in this research revealed that it was appropriate to consider the three-cluster solution. Clusters were then labelled in the following way: cluster 1 — *the least attractive*; cluster 2 — *attractive*; and cluster 3 — *the most attractive*.

The results obtained in this study show clearly that the economic relevance for the Central Region of Portugal of the three clusters identified are very heterogeneous. Although visitors from cluster 1 (*the least attractive*, those with the least expenditure) represent 56.5% of total visitors, they generate lower economic benefits to the destination, not only in terms of output and household income but also in terms of employment, when compared with visitors from cluster 2 (*attractive*) and cluster 3 (*the most attractive*, those with the highest expenditure). Each visitor from *The most attractive* segment has a total economic impact in the Central Region equivalent to ten visitors from cluster 1 (*the least attractive*) and two visitors from cluster 2 (*attractive*) (Table 24.5). These results show clearly that cluster 3 is the segment of greatest interest to economic growth of this region. However, this segment represents only 10.7% of the total visitors to this region. Consequently, the marketing strategies developed for this destination should give a preferential treatment to this segment.

When looking at expenditure per visitor, the daily average expenditure at the destination was 55.88€ and the total expenditure was 236.89€. However, visitors from cluster 3 (*the most attractive*) have the highest expenditure while visitors from cluster 1 (*the least attractive*) have the lowest expenditure. One visitor from cluster 3 spends daily in the Central Region three times what one visitor from cluster 1 spends. This difference is higher when the total expenditure per visitor is analysed, requiring almost ten visitors from cluster 1 to have the same total expenditure in the destination of a visitor from cluster 3 (Table 24.5).

Regarding multiplier effects of tourism expenditure, Table 24.5 shows that each euro spent by the various tourists visiting the Central Region of Portugal results in about 2.11€ of output and 0.56€ of income to residents. Regarding employment multipliers, for each thousand euros of tourist expenditure in the Central Region a total increase in employment of 0.05 (direct, indirect and induced) occurs. However, significant differences among

Table 24.5. Segments identified according to economic benefits generated in the central region of Portugal.

Economic variables	Segments identified: Cluster 1 The least attractive $N = 1{,}445$ (56.5%)	Cluster 2 Attractive $N = 839$ (32.8%)	Cluster 3 The most attractive $N = 243$ (10.7%)	Total $N = 2{,}527$ (100.0%)	Type of test	Test value	p-value
Expenditures per visitor (€)							
Total	81.65[a]	334.76[b]	757.77[c]	236.89	*ANOVA*	6,166.075	0.000
Per day	35.526[a]	75.922[b]	102.01[c]	55.88	*ANOVA*	603.687	0.000
Expenditures pattern (%)							
AA	**0.25**	0.10	0.10	0.23	*Kruskall–Wallis*	18.470	0.000
BB	0.04	0.01	**0.35**	0.03	*Kruskall–Wallis*	18.500	0.000
DA	**1.28**	0.89	0.96	5.07	*Kruskall–Wallis*	17.040	0.000
DB	3.61	3.57	**5.42**	3.8	*Kruskall–Wallis*	14.540	0.001
DC	1.45	0.85	1.18	1.15	*Kruskall–Wallis*	3.850	0.146
DE	1.74	0.69	0.97	1.15	*Kruskall–Wallis*	3.200	0.202
DF	**15.21**	8.60	8.12	11.06	*Kruskall–Wallis*	9.800	0.007
DG	0.57	0.29	0.33	0.50	*Kruskall–Wallis*	3.150	0.207
DI	**0.74**	0.52	0.23	0.62	*Kruskall–Wallis*	6.370	0.041
DL	1.36	0.94	1.18	1.08	*Kruskall–Wallis*	3.710	0.157
DN	0.34	0.17	0.14	0.28	*Kruskall–Wallis*	0.850	0.652
DM	0.13	0.08	0.13	0.12	*Kruskall–Wallis*	1.070	0.587
GG	0.26	0.28	0.20	0.20	*Kruskall–Wallis*	1.000	0.606
HH	61.18	**69.18**	63.70	61.81	*Kruskall–Wallis*	16.400	0.000

(*Continued*)

Table 24.5. (*Continued*)

Economic variables	Segments identified: Cluster 1 The least attractive $N = 1{,}445$ (56.5%)	Cluster 2 Attractive $N = 839$ (32.8%)	Cluster 3 The most attractive $N = 243$ (10.7%)	Total $N = 2{,}527$ (100.0%)	Type of test	Test value	p-value
II	5.90	5.88	**6.00**	5.58	*Kruskall–Wallis*	30.700	0.000
KK	0.79	3.07	**4.09**	1.86	*Kruskall–Wallis*	123.000	0.000
OO	5.10	4.26	4.14	4.66	*Kruskall–Wallis*	20.450	0.000
NN	0.01	0.59	2.98	0.76	*Kruskall–Wallis*	160.850	0.000
JJ	0.00	0.01	0.00	0.02	*Kruskall–Wallis*	2.050	0.359
Total	100	100.	100	100			
Total Keynesian multipliers							
Output	2.078	2.156	2.193	2.120	*Kruskall–Wallis*	26.500	0.000
Household income	0.552	0.574	0.589	0.563	*Kruskall–Wallis*	50.070	0.000
Employment	0.050	0.053	0.053	0.051	*Kruskall–Wallis*	8.820	0.012
Total impact							
Total impact on output (€)	169.23^{a}	712.38^{b}	$1{,}643.09^{c}$	504.81	*ANOVA*	7,795.593	0.000
Total impact on household income (€)	44.94^{a}	189.83^{b}	441.17^{c}	134.79	*ANOVA*	7,735.731	0.000
Total impact on employment (number)	0.004^{a}	0.0174^{b}	0.039^{c}	0.012	*ANOVA*	7,463.404	0.000

Note: Means with different superscripts are significantly different according to the Scheffe test.

segments identified concerning multiplier effects were observed (Table 24.5). Visitors from cluster 3 (*the most attractive*) have higher multipliers (output, household income and employment) when compared with the visitors from cluster 1 (*the least attractive*). These differences can be explained by the variations in spending patterns which indicate that visitors from cluster 3 spend more on products with higher multipliers (e.g., health products). Furthermore, the total normal multipliers (output, household income and employment) presented in Table 24.6 show substantial differences in the multiplier effects according to the type of product consumed by the visitors. Considering those products evaluated in this study, the largest multiplier effects are observable for non-specific products of the tourism industry (e.g., retail trade and health products). On the other hand, tourist expenditure undertaken when purchasing fuel caused the lowest multiplier effects (Table 24.6).

24.4.2. *Characteristics of segments: socio-demographic profile and travel behaviour*

To seek more economic earnings, tourism destinations need to understand not only which visitors have the highest economic benefits to the destination, but also which traveller characteristics contribute to explaining higher economic benefits. Destination marketers should formulate marketing strategies to attract the visitors that generate more economic benefits to the destinations based on the characteristics of these visitors. For this purpose, and in the particular case of the Central Region of Portugal, the results presented in the Tables 24.7 and 24.8 reveal significant statistical differences in terms of socio-demographic profile and travel behaviour between the clusters identified.

Regarding socio-demographic profile significant differences in terms of household life-cycle, place of residence, education level, economic status, age and income were observed between the segments identified (see Table 24.7). However, no significant differences were found in gender. The most attractive segment (cluster 3) comprises visitors with a higher level of income, who are foreign, have a higher level of education and are older. In contrast, cluster 1 (*the least attractive*) is formed by those with lower income, Portuguese, younger, with a lower education level and unemployed.

In terms of travel behaviour, the most attractive visitors (cluster 3) differed from the other clusters identified concerning information sources used, type of accommodation used, purpose of visit, type and number of tourism activities carried out in the destination, season of the trip, type of

tourism practised, number of tourism attractions visited, average number of persons per party and length of stay (Table 24.8). The characteristics that differentiate cluster 3 from the other clusters are summarised as follows: (i) They tend to use more commercial information sources (e.g., travel agencies, internet and catalogues of companies/organisations); (ii) They are more likely to use hotels and rented rooms in family houses; (iii) They visit this destination mainly for health treatment, business and professional purposes or for visiting friends and relatives; (iv) They also tend to visit more attractions and carry out more tourism activities (e.g., cultural activities, recreation activities, health treatments and attending meetings, conferences or congresses); (v) They are more likely to visit the region in high season; (vi) They visit the countryside more and the coast less; and (vii) They tend to travel in a small group but stay more days in the destination (about 10 days).

Table 24.6. Total Keynesian multipliers (output, household income andemployment).

Type of products consumed by visitors	Output multiplier	Household income multiplier	Employment multiplier
AA	2.70	0.72	0.11
BB	2.25	0.70	0.05
DA	2.92	0.68	0.07
DB	2.71	0.75	0.05
DC	1.59	0.43	0.03
DE	2.90	0.69	0.05
DF	0.89	0.26	0.02
DG	1.22	0.29	0.02
DI	3.09	0.73	0.05
DL	1.87	0.48	0.03
DN	1.09	0.23	0.02
DM	2.90	0.76	0.05
GG	3.39	0.99	0.07
HH	2.24	0.59	0.06
II	1.75	0.43	0.03
KK	2.59	0.66	0.04
OO	1.98	0.61	0.03
NN	3.52	1.08	0.07
JJ	3.13	0.89	0.06

Table 24.7. Statistical differences among the clusters identified according to socio-demographic profile.

Socio-demographic profile	Segments identified: Cluster 1 The least attractive $N = 1{,}445$ (56.5%)	Cluster 2 Attractive $N = 839$ (32.8%)	Cluster 3 The most attractive $N = 243$ (10.7%)	Total $N = 2{,}527$ (100.0%)	Type of test	Test value	p-value
Household Life-cycle							
Single — living alone	11.1%	15.6%	**16.7%**	13.1%			
Single — living with parents	20.7%	19.2%	**22.7%**	20.4%			
Married, no children	15.6%	**19.5%**	13.4%	16.6%			
Married, child under age six (full nest I)	**22.8%**	15.8%	9.3%	19.1%	*Chi-square*	88.012	0.000
Married, child age six or older (full nest II)	**9.3%**	9.0%	5.6%	8.8%			
Empty nest I	**9.3%**	7.8%	8.9%	8.8%			
Empty nest II	5.9%	7.3%	**12.3%**	7.0%			
Retired	1.7%	2.8%	**6.3%**	2.5%			
Other situation	3.7%	3.2%	**4.8%**	3.7%			
Place of residence							
Central Region of Portugal	**17.6%**	7.0%	6.2%	12.9%			
Other region of Portugal	**34.8%**	23.1%	19.4%	29.3%	*Chi-square*	152.211	0.000
Other country	47.5%	69.8%	**74.4%**	57.7%			
Education level							
No education or pre-primary education	**8.4%**	4.5%	6.4%	7.0%			

(*Continued*)

Table 24.7. (*Continued*)

Socio-demographic profile	Segments identified: Cluster 1 The least attractive $N = 1{,}445$ (56.5%)	Cluster 2 Attractive $N = 839$ (32.8%)	Cluster 3 The most attractive $N = 243$ (10.7%)	Total $N = 2{,}527$ (100.0%)	Type of test	Test value	p-value
First level or primary education	**6.9%**	3.4%	3.8%	5.4%			
Lower secondary education	6.4%	6.0%	6.4%	6.3%	*Chi-square*	46.072	0.000
Upper secondary education	25.7%	20.5%	24.2%	23.9%			
Higher or Post-secondary education	52.5%	**65.6%**	**59.1%**	57.4%			
Economic status							
Homemaker	1.8%	1.6%	**4.1%**	2.0%			
Unemployed	**4.1%**	2.8%	2.5%	3.5%			
Student	12.5%	11.7%	**16.8%**	12.7%			
Retired	8.5%	9.9%	**16.4%**	9.8%	*Chi-square*	84.491	0.000
Employed	67.8%	68.8%	57.8%	67.1%			
Businessperson	**5.2%**	**5.2%**	2.5%	4.9%			
Age	37.86	38.97	41.28	38.59	*Kruskall–Wallis*	7.251	0.027
Net income per-capita (€)	1059.65	1465.17	1501.44	1246.25	*Kruskall–Wallis*	108.411	0.000

Table 24.8. Statistical differences among the clusters identified according to travel behaviour.

Travel behaviour	Segments identified: Cluster 1 The least attractive $N = 1{,}445$ (56.5%)	Cluster 2 Attractive $N = 839$ (32.8%)	Cluster 3 The most attractive $N = 243$ (10.7%)	Total $N = 2{,}527$ (100.0%)	Type of test	Test value	p-value
Information sources used							
Travel agencies	8.6%	**15.3%**	**15.8%**	11.5%	*Chi-square*	28.490	0.000
Books/newspaper and TV	17.3%	**21.6%**	18.3%	18.8%	*Chi-square*	6.393	0.041
Internet	18.3%	**32.8%**	**32.6%**	24.6%	*Chi-square*	70.958	0.000
Catalogues of companies/organisations	5.1%	9.9%	**11.4%**	7.4%	*Chi-square*	24.932	0.000
Type of accommodation used							
Hotels	45.6%	**63.9%**	**62.4%**	55.7%			
Camping	**24.3%**	12.9%	7.7%	17.2%			
Rural Tourism	3.1%	**4.9%**	2.6%	3.8%			
Youth Hostels	**4.6%**	2.8%	**4.4%**	3.8%	*Chi-square*	136.127	0.000
Rented rooms in family house	2.5%	4.9%	**10.0%**	4.5%			
Accommodation provided by friends and relatives	**15.2%**	8.5%	9.2%	11.5%			
Second homes	**4.8%**	2.2%	3.7%	3.5%			
Purpose of the visit							
Leisure, recreation and/or holiday	**87.4%**	84.5%	69.6%	84.6%			

(*Continued*)

Table 24.8. (*Continued*)

Travel behaviour	Segments identified: Cluster 1 The least attractive $N = 1{,}445$ (56.5%)	Cluster 2 Attractive $N = 839$ (32.8%)	Cluster 3 The most attractive $N = 243$ (10.7%)	Total $N = 2{,}527$ (100.0%)	Type of test	Test value	*p*-value
Visiting friends and relatives	**8.0%**	7.3%	**8.4%**	7.8%	*Chi-square*	123.595	0.000
Business and professional	3.2%	**5.1%**	**9.2%**	4.5%			
Health treatment and other	1.4%	3.1%	**12.8%**	3.2%			
Activities carried out							
Visiting museums	44.6%	**52.4%**	**59.3%**	49.1%	*Chi-square*	29.172	0.000
Visiting monuments	67.3%	**75.3%**	**75.8%**	70.8%	*Chi-square*	20.390	0.000
Going to the beach	30.2%	**39.1%**	**46.5%**	34.9%	*Chi-square*	36.526	0.000
Attending cultural and recreation events	12.6%	17.5%	**25.6%**	15.6%	*Chi-square*	33.158	0.000
Visiting recreation facilities	8.8%	10.1%	**13.6%**	9.7%	*Chi-square*	6.149	0.046
Practising sports	11.3%	14.4%	**20.1%**	13.3%	*Chi-square*	16.784	0.000
Shopping	37.4%	40.8%	**46.2%**	39.5%	*Chi-square*	8.186	0.017
Visit historic sites	49.8%	**63.1%**	54.9%	54.7%	*Chi-square*	37.860	0.000
For health treatment	1.9%	4.3%	**13.6%**	3.9%	*Chi-square*	82.038	0.000
Attending meetings, conferences or congresses	**10.2%**	3.6%	4.4%	2.3%	*Chi-square*	18.176	0.000

(*Continued*)

Table 24.8. (*Continued*)

Travel behaviour	Segments identified: *Cluster 1 The least attractive* $N = 1{,}445$ (56.5%)	*Cluster 2 Attractive* $N = 839$ (32.8%)	*Cluster 3 The most attractive* $N = 243$ (10.7%)	Total $N = 2{,}527$ (100.0%)	Type of test	Test value	*p*-value
Season							
Low	**23.5%**	17.4%	13.2%	20.4%			
Medium	**28.5%**	26.9%	25.6%	27.7%	*Chi-square*	29.228	0.000
High	48.0%	55.7%	**61.2%**	51.9%			
Type of destination in Central Region							
Coast	15.4%	15.7%	15.0%	15.5%			
Cities	50.7%	**57.1%**	52.7%	53.0%	*Chi-square*	11.912	0.018
Countryside	**33.9%**	27.2%	**32.2%**	31.5%			
Number of attractions visited	2.12	2.40	2.43	2.24	*Kruskall–Wallis*	28.360	0.000
Number of tourist activities carried out	3.44	4.11	4.52	3.77	*Kruskall–Wallis*	106.150	0.000
Length of stay	1.67	5.11	9.85	3.67	*Kruskall–Wallis*	1032.690	0.000
Travel group (number)	2.25	1.93	1.67	2.08	*Kruskall–Wallis*	48.300	0.000

24.5. Implications and Conclusions

Tourism economic impact studies are performed for a variety of reasons and uses. The results of these studies are important to educate private and public agents responsible for tourism development of the destinations and the general public about tourism benefits. These studies are also important as a policy and planning tool and for defining marketing strategies for the destination. Considering the importance of this kind of studies, the study presented here aims at developing an integrated model for estimating the total economic benefits for destination regions and uses this model to identify the visitors who generate the highest economic impacts for the destination. The model integrated two sub-models, one for estimating total expenditure of each visitor and the other for quantifying tourism multipliers. It was also our objective to show the relevance of the suggested model for segmenting the tourist market of a specific destination. Although tourism providers can use various segmentation criteria and techniques to understand and to learn about visitors, a limited number of studies have used the results of an economic impact model to segment the market. This research aimed to extend the literature in this field using as segmentation criteria the total economic benefits in terms of production, household income and employment that each visitor generates in the destination.

To validate the model, it was applied to a region in Portugal. As stated by Liu *et al.* (1984) the importance of regional studies needs to be stressed, particularly in a country like Portugal where this kind of research is very scarce. One of the motives that contributed to the choice of the Central Region for applying the model for evaluating the economic benefits of tourism was the absence of studies and relevant information for planning and policy definition regarding tourism development. If, at the national level, there is a substantial lack of relevant data for tourism purposes, at the regional level this difficulty increases, principally when regions are studied that, despite revealing important potential for tourism development still show little dynamism. However, as Seetanah (2011) highlights at the regional level for the Portuguese case, tourism can be considered as an alternative solution for enhancing regional growth in Portugal. As a matter of fact, and in agreement with many researchers, tourism is a regional/local phenomenon that requires studies undertaken on the same territorial scale (Garrison, 1974; Liu *et al.*, 1984; Leones *et al.*, 1998).

The estimation of total economic effects of individual visitors provides very useful information for those responsible for tourist destination development. The identification of visitors who generate the highest economic

impacts for the destination is a fundamental input for the definition and implementation of adequate marketing strategies. More specifically, by understanding the impact that different tourist groups or segments have on the economy of a region, distinct marketing approaches may be used, adapting to each segment and investing in each one, according to the benefits expected. In tourism, this discussion has been published, based on empirical evidence, elsewhere (e.g., Kastenholz, 2005; Downward and Lumsdon, 2002; Mudambi and Baum, 1997). In this context, the findings of this research suggest some important marketing implications and challenges both to the tourist destinations and industry practitioners. Thus, we consider that more efforts should be made to find out what the *the most attractive* visitors like and dislike about the Central Region of Portugal.

This study is novel in permitting a deeper understanding of economic benefits of specific tourist groups, by not only looking at expenditure level (e.g., daily expenditure), but also total impact in terms of output, household income and employment generated by each visitor to the destination under analysis. The results of this study reveal clearly that the most attractive visitors to the Central Region of Portugal in terms of economic value represent only about 10% of the whole market. In this context, the agents responsible for the development of this destination may have the objective of attracting visitors from cluster 3 (*the most attractive*) and simultaneously develop products in order to stimulate the expenditure of cluster 1 (*the least attractive*) and cluster 2 (*attractive*). The length of stay is a key issue for increasing tourist spending of visitors from cluster 1 and cluster 2. Furthermore, those responsible for marketing strategies for this destination should also take into account the cost of marketing strategies necessary to increase the number of tourists who will have a higher regional economic impact. Therefore, the agent responsible for management of the Central Region of Portugal and industry practitioners have to combine different approaches (e.g., development of new tourism products, promoting health tourism) in order to motivate the travellers from these cluster to stay longer in this destination. In addition, the visitors that carried out health treatments also reveal a higher contribution to the economic growth of this region. There is a great potential in this region to develop health tourism due to the strong concentration of thermal spas.

Furthermore, the study makes a significant contribution to the academic literature because it presents an integrated model that comprises an economic model to measure the economic impact of individual visitors and a segmentation model to identify the segments of greater economic value

to the destination. In this context, this research provides a methodological approach that could be applied to other tourism destinations.

Even though this study was oriented by rigorous and well-founded methodologies, any research project shows limitations, as a consequence, on the one hand, of the fragmented nature of tourist activity, whose complete economic evaluation presents some difficulties, and on the other hand due to the lack of statistical information needed for undertaking this kind of study. In this context, future studies are suggested to collect and analyse data for long periods of time. In addition, although the results that emerge from this study provide important guidelines for a regional policy on product innovation, in order to increase the role of tourism on regional development, future research needs to be carried out to validate the findings of this research. Moreover, complementary studies are also considered most relevant, namely those that consider, apart from economic benefits generated through tourist expenditure, the associated costs of tourism.

Finally, apart from the economic benefits analysed, other consequences that are sometimes more difficult to quantify, such as social and cultural impacts, but also ecological impacts, should be considered for a full picture. These aspects may also be introduced in a survey, although its resulting complexity would naturally condition the number and validity of responses. However, other complementary approaches might help gain further insights into the complex nature of tourism impacts, considering also the cost side, and which might depend on the type of tourist group being analysed, as was visible in this case and also other studies. Based on this differential understanding, a marketing approach characterised by an active 'management of demand' aiming at more sustainable tourism development at the destination (Kastenholz, 2004), may be put into practice. Thus, to improve the level of competitiveness of tourism production in the Central Region of Portugal continuous research is necessary to identify which segments should be targeted by marketing strategies.

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PART VII

INTERNATIONAL ECONOMIC ISSUES AND TOURISM

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Chapter 25

GLOBALISATION IN TOURISM: A THEORETICAL AND EMPIRICAL TRADE EXAMINATION

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Abstract: An important facet of globalisation is the international fragmentation of production. This phenomenon has been studied for goods and many services but has so far been neglected in tourism studies. In this chapter, we attempt to rectify that by providing theoretical and empirical evidence of various aspects of the international division of tourism production (IDTP). In the theoretical section, we use the traditional Ricardian paradigm to show that the IDTP is a conceivable possibility for tourism and may even be highly likely in a context of rapidly decreasing costs of transport, trade and communications. The three theoretical cases shown here can be interpreted, in a historical perspective, as describing the gradual opening of tourism to international trade in Europe. The empirical section is based on the revealed comparative advantage index of Balassa to study the pattern of specialisation of 36 countries (18 OECD countries and 18 developing countries) in two segments of the tourism product system. Our results confirm that tourism production has been globally fragmented over the period 1980–2006, but that the pattern of specialisation of the two groups of countries evolved differently over time.

Keywords: Comparative advantage; international fragmentation of production; tourism production process; tourism specialisation; transaction costs.

25.1. Introduction

It is widely acknowledged that the ongoing wave of globalisation has had an impact on tourism for a long time already, on both the supply and demand sides. According to Smeral (1998, 2001) for example, tourism supply factors are mainly affected through the emergence of worldwide acting suppliers with computerised information and reservation systems, decreasing transportation and communication costs, and the development of new destinations. On the demand side, due to tourism's character as a luxury good (with high

income elasticity), increasing income and wealth induced by globalisation have expanded the number of more experienced and knowledgeable international tourists. All these factors have resulted in a massive expansion and diversification of tourism source and host markets: A growing pool of international tourists from an increasing number of originating countries are able to visit a larger number of destinations, which in turn are increasingly competing with each other. The impressive growth rate of international tourism during the second half of the last century and the dramatic dispersion of international market shares across a broader variety of receiving countries[1] can be interpreted as the results of this phenomenon.

Except for these quantitative aspects, however, tourism is generally not viewed as being influenced very much by the process of globalisation. Hjalager (2007), for example pointed out how little the literature has studied the manifestations of globalisation in tourism, on the assumption shared by many practitioners that this industry is immune from its effects, being thus an 'exception' (p. 439).[2] The UNCTAD (2007) asserts that tourism is 'one of the least globalised' industries (p. 13) and a 'relatively unglobalised activity' (p. 19). This conclusion has been drawn on the consideration of foreign direct investment (FDI) only. And indeed FDI in tourism, in the traditional form of equity ownership — appears to be very low compared to other activities, including services (e.g., telecommunications or finance): According to UNCTAD (2007), tourism-related FDI accounts for no more than 1% or 2% of total outward FDI stocks from the largest source countries, and even less of total inward FDI stocks for the largest host countries.

However, these results are likely to underestimate the true extent of FDI as, in a broader sense, new forms of foreign investment (leasing agreement, management contract, franchise agreement) also have to be taken into consideration. And in tourism, these non-equity forms seem even more common than the traditional equity forms (major or minor equity and joint venture) (Endo, 2006). Second, and more importantly, the process of globalisation cannot be reduced to foreign investment. For some decades already, one of the most prominent forms of globalisation has been the splitting up of firms' production process into various components which are then produced in different countries. Thanks to revolutionary advances in transportation and communications technology, goods and services are produced

[1]In 1950, the top 15 destinations accounted for 97% of the international arrivals, but only 56% in 2009 (UNWTO, 2011).

[2]On the links between tourism and globalisation, see also Knowles *et al.* (2001), Wahab and Cooper (2001), Fayed and Fletcher (2002), Cornelissen (2005).

in multiple stages across multiple countries with each country specialising in particular steps of the production sequence. Goods in process are thus exported and imported, giving rise to trade in intermediate goods (parts and components, semi-finished goods). This phenomenon has been extensively studied in the literature (Arndt, 1997; Jones and Kierzkowski, 2001; Hummels *et al.*, 2001, among many others) and equally labelled as "slicing up the value chain', 'vertical specialisation', 'offshore outsourcing', 'disintegration of production', 'international fragmentation' or 'international division of production processes'. According to Jones *et al.* (2004), it has even become a symbol of globalisation, and Baldwin (2006) argues that globalisation can be thought of as the 'unbundling of things'. Following an early paper by Krugman (1996) and Blinder (2006) talks of a third Industrial Revolution while Grossman and Rossi-Hansberg (2008) assert that this stage of globalisation is so different that it requires a 'new paradigm' in international trade theory (sometimes called the 'Princeton paradigm'; see Baldwin, 2006).

While this phenomenon has first been observed for manufactured goods, empirical evidence is strongly suggestive of increasing offshore outsourcing in services (Amiti and Wei, 2005; WTO, 2005), for both low-skilled labour tasks (call centre support, data entry and handling, coding ... usually designated as 'Business Processing Outsourcing' services) and high-skilled labour tasks (consulting, software design, architecture, R&D ... grouped together into the category of 'Knowledge Process Outsourcing' services). Tourism has not been included so far, either by international organisations or by trade economists, in the list of services potentially concerned by international fragmentation. 'Tourism cannot be outsourced', as stated in an emblematic way by the two practitioners reported in Hjalager (2007, p. 439). This is certainly due to the prevailing view of tourism as a single-stage activity necessarily performed by the host country, whose geographic and spatial dimension prevents from any possibility of delocalisation (e.g., vacation in Egypt cannot be delocalised in another country). So, has tourism truly stood apart from the 'great unbundling', as Baldarin (2006) mentioned it?

If tourism is more relevantly seen as a composite product involving multiple sequential stages, as it has been recognised at least since Burkart and Medlik (1974), there is no reason to think that the same dramatic reductions of costs in transaction, transport and telecommunications as those which have occurred in manufacturing and other services could not cause the same result of an internationally fragmentation of production. Hjalager (2007) suggested that the fragmentation of the value chain could be the third of four stages in a model of globalisation in tourism. Usually defined

as an 'amalgam' (Dunning and McQueen, 1981; Gilbert, 1990), tourism is namely made up of technologically separate and independent components which are sequentially linked into a value added chain whose final product is the tourism product itself. The tourism satellite account framework (Eurostat/OECD/WTO/UN, 2001) for example, distinguishes twelve categories of services[3] as making up the tourism product. These services have to be assembled in order to create the final product and the assembler can be a tour operator, a travel agency, the accommodation sector or the individual tourists themselves. It is, therefore, quite appropriate to describe tourism as a composite product (see also Sinclair and Stabler, 1997) or a 'product-system' which can be broken down into many segments of production. Since all these segments are quite different from each other — requiring different technologies and/or factors of production — it is highly unlikely, *in a situation where costs of transaction and communication are sufficiently low*, that a country can be competitive for all segments and can specialise in the whole 'product-system'. It seems more reasonable to assume that tourism's value added chain will be internationally split up by private firms across different countries according to varying factors (technological levels; factor endowments; level of transport, transaction and communication costs . . .). A country may have a comparative advantage in one segment of the tourism production process and a disadvantage in another segment. If segments do indeed take place in production units located in different countries, we would then be in the presence of an international division of tourism production (IDTP).

The aim of this chapter is twofold. Firstly, it demonstrates, using a simple analytical framework, that from a theoretical point of view, the international division of production is a conceivable possibility for tourism and may even be highly likely in a context of rapidly decreasing costs of transport, trade and communications. The theoretical possibility thus exists that tourism may be party to the 'great unbundling' as well. Secondly, using a methodology based on Lemoine and Ünal-Kesenci (2002), this chapter investigates the empirical reality of such possibility for two selected groups of countries by considering their comparative advantages in different segments of the tourism product-system. The international splitting up of the tourism's

[3](1) Hotels and similar, (2) second home ownership, (3) restaurants and similar, (4) railway passenger transport services, (5) road passenger transport services, (6) water passenger transport services, (7) air passenger transport services, (8) transport supporting services, (9) transport equipment rental, (10) travel agencies and similar, (11) cultural services, (12) sporting and other recreational services.

value added chain is thus studied by assessing trade specialisation in different segments of this chain.

The remaining part of this chapter is organised as follows. Section one provides the theoretical framework around which the issue of international fragmentation of tourism production is discussed. Section two describes the revealed comparative advantage (RCA) index used to measure countries' specialisation for some segments of the tourism product system, and presents the main findings of our empirical investigation of the IDTP phenomenon. The chapter ends with concluding remarks.

25.2. The Theoretical Framework

The phenomenon of the international division of production processes has been studied now for nearly three decades and a large variety of models have been developed, mainly based on two different approaches: the presence of trade in intermediate inputs (for example, in Jones and Kierzkowski, 1990, 2001; Arndt, 1997; Deardorff, 2001, 2005; Markusen, 2005) or a final good production structure involving a continuum of strict complementary intermediate stages (as introduced first by Dixit and Grossman, 1982, and subsequently used by, among others, Feenstra and Hanson, 1996; Yi, 2003; Kohler, 2004; Grossman and Rossi-Hansberg, 2008). All available frameworks in international trade theory have been utilised: Ricardian or Heckscher–Ohlin type models, 'new trade theory' and 'new economic geography'.

The aim of this section is not to build a new theoretical model of international fragmentation. It is rather to provide a simple and rigorous illustration of the theoretical possibility and relevance of this aspect of globalisation for tourism, which can also be used as a guide for an empirical investigation. For this reason, although the complexity of the tourism phenomenon could well necessitate a combination of many of these theories, we choose the simplest — namely the Ricardian model — to describe a general formulation of the concept of IDTP.[4] More precisely, we consider the first of the two approaches mentioned above: the presence of trade in intermediate inputs, in a Ricardian framework in a similar way to Deardorff (2001, 2005). However, in accordance with Grossman and Rossi-Hansberg (2008) and unlike Nowak *et al.* (2010) and Sahli (1999), we explicitly take into account the existence

[4]Despite its simplicity, the Ricardian model has proved powerful and performed quite well in explaining recent trends in international trade. Yi (2003) for example used a Ricardian (dynamic) model to show that international fragmentation could be the main cause of the world trade growth from the late seventies onwards.

of transaction and communication costs for each intermediate input and the final goods as well. This allows for the existence of non-traded goods and leads to an enriched model with a wider range of possibilities.

As stated in the introduction, tourism can be appropriately described as a composite product, or a 'product-system', that is made up of technologically separate components which are sequentially linked into a value added chain whose final product is sold to the tourist. The Eurostat/OECD/WTO/UN classification (2001) distinguishes five main segments: (1) the attraction/entertainment sector: museums, wildlife parks, theme parks, all kinds of man-made and natural attractions, as well as other attractions; (2) the accommodation sector: including hotels, bed and breakfast, campsites, etc.; (3) the transport sector: airlines, railways, car rental operators, etc. (4) the destination organisation sector: national/local tourist offices, tourism associations; (5) the travel organiser sector: tour operators, travel agents, etc. This official classification is however incomplete as it does not take into account all goods and services used as inputs by these five segments: food, beverages, furniture, laundry, accounting, management, outdoor clothing, sunglasses, tents, etc. Entering into the production function of these five segments as intermediate inputs, they actually form an additional sequential segment of production. Let us call it the U-segment.

The services produced by some of these segments have to be assembled in order to create the final product, and we have already seen that the assembler can be a tour operator, a travel agency, the accommodation sector or the individual tourists themselves. For the purpose of this illustration, let us consider the case where the assembler is a tour operator. The final tourism product is thus an all-inclusive pre-paid package tour (called V) whose sequential production process involves all six segments distributed among three separate stages of production: upstream, middle and downstream stages (see Fig. 25.1).

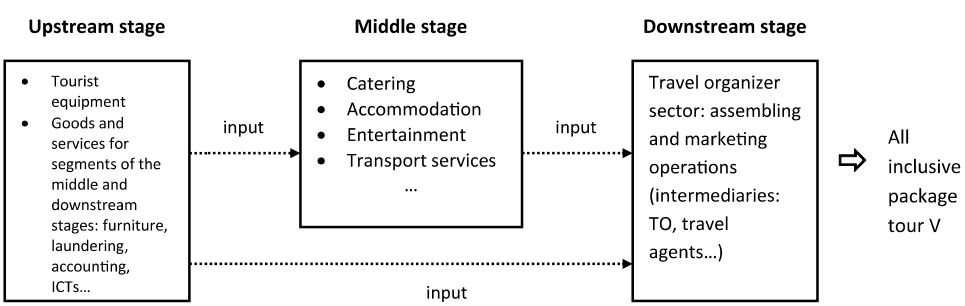

Fig. 25.1. The tourism production process of a package tour.

The upstream stage consists of the goods and services produced by the U-segment that are used by all other segments as intermediate inputs. The middle stage is made up of accommodation, catering, entertainment and passenger transportation services. These services are in turn intermediate inputs for the downstream stage, i.e., the assembling and marketing operations completed by intermediaries in the distribution channels (by the tour operator in the present case). Their role is to package the middle stage segments' services into a single aggregated tourism product (V) that will be sold to the tourists.

Let us now describe the theoretical model. We consider a two-country world, Home and Foreign (with the latter's variables being asterisked), satisfying the usual assumptions of a Ricardian framework. There are three final goods: an aggregated tourism product (V), a manufactured good (M) and an agricultural good (N). Goods M and N do not require any intermediate input while the tourism good V is produced in the manner just described above. However, to keep the theoretical framework simple and without any loss of generality, let us leave the upstream stage (segment U) aside and consider just three segments, distributed among the middle and downstream stages: accommodation (segment A, belonging to the middle stage), transport of passengers (segment T, belonging to the middle stage) and the tour operators (segment I, belonging to the downstream stage). Intermediate segments A and T are therefore combined with segment I by the tour operators to produce the aggregated tourism product V.[5] More precisely, in each country the production of one unit of V needs one unit of tour operators' services I, plus one unit of accommodation services A, plus one unit of transport services T if the all-inclusive package tour V concerns holidays in another country, but less than one unit of transport services (say α unit, with $\alpha < 1$) if it concerns holidays in the tourist's country of residence.[6] This difference in the amount of T required to produce one unit of V according to the place of holiday has been introduced to reflect the

[5]Note that in this chapter, we leave aside any industrial organisation consideration, like the 'hold-up problem' of underinvestment which may arise in transactions involving intermediate goods. A domestic downstream firm and a foreign upstream firm bargain under symmetric information over the terms of trade of a specialized component. As efficiency in the bargaining process ensures ex post efficiency in production, contract incompleteness can imply inefficient ex ante relationship-specific investments by the upstream firm (see Tirole, 1988, and for example Ornelas and Turner, 2008, for an extension to an international context).

[6]That is $1V = 1I + 1A + 1T$ for a holiday abroad and $1V = 1I + 1A + \alpha.T$ for a holiday at home.

fact that foreign destinations are usually more distant than domestic destinations and that travelling abroad thus normally requires more transport than travelling at home.

It is also highly important to introduce transport, transaction and communication (TC) costs for each intermediate input and final good as it is now widely recognised that dramatic reductions in these costs have been the main engine of the different waves of globalisation (Baldwin, 2006; Grossman and Rossi-Hansberg, 2008). While these costs concern both national and international operations, only costs related or due to the crossing of international borders are considered here: tariffs and quantitative restrictions; legal and regulatory barriers; legislation and administrative restrictions on entry visas, foreign currency, transfer of funds and repatriation of profits; restrictions on foreign ownership and investment; obstacles to hiring foreign personnel; differences in national administrative regulations; long-distance telecommunications, etc. (see for example Fletcher *et al.*, 2002). These TC costs are modelled as being of the iceberg type (Samuelson, 1954) and are parametrised by $d_j > 1$ for Home and $d_j^* > 1$ for Foreign, with $j = \mathrm{M, N, A, T, I}$. For example, when d_j units of good j are exported by Home to Foreign, only 1 unit reaches its destination, $d_j - 1$ units being lost when travelling to Foreign. However, to simplify the exposition, we assume that these costs are identical for each final good and intermediate segment, and across countries: $d_j = d_j^* = d$ with $j = \mathrm{M, N, A, T, I}$.[7]

The two non-tourism final goods (M and N) and the tourism intermediate segments (A, T, I) are produced using labour only, which is the sole direct factor of production in the economy. Let a_{Lj} (a_{Lj}^*) be the constant amount of labour needed in Domestic (Foreign) to produce one unit of good or service j ($j = \mathrm{M, N, A, T, I}$). This labour coefficient depends on the country's level of technological development in sector j only and its inverse ($1/a_{Lj}$) represents the marginal (or average) product of labour in j.

Taking the manufactured good M as an example, let us now examine how the presence of TC costs (d) may prevent a good from being exported or imported, making it a non-traded one. Under perfect competition, good M's domestic price is $P_M = a_{Lj} \cdot w$ in Home and $P_M^* = a_{Lj}^* \cdot w^* \cdot e$ in Foreign (in Homes's currency). w (w^*) denotes the wage rate in Home (Foreign) and e the exchange rate (1 unit of Foreign's currency = e units of Home's currency). Home will be competitive on Foreign's domestic market only if

[7]See Petit (2010) for the general case where the TC costs differ across goods, segments and countries, and for non-unit intermediate input coefficients for V (amounts of A or T required to produce one unit of V).

its export price (including the TC costs) is lower than Foreign's domestic price: $P_M \cdot d < P_M^*$, that is $(a_{LM} \cdot w) \cdot d < a_{LM}^* \cdot w^* \cdot e$, or

$$\left(\frac{w}{w^* \cdot e}\right) \cdot d < \frac{a_{LM}^*}{a_{LM}}. \tag{25.1}$$

a_{LM}^*/a_{LM} is the international differential of marginal products of labour in sector M, reflecting the technology gap between the two countries in this sector, while $w/(w^* \cdot e)$ denotes the international ratio of wage rates.[8] If condition (1) is not fulfilled ($\frac{a_{LM}^*}{a_{LM}} < \frac{w \cdot d}{w^* \cdot e}$): Home's good M is too expensive on Foreign's market), Foreign will not import M from Home and will only consume domestically produced good M. But will it be able to export good M on Home's domestic market? It will if its export price (including the TC costs) is lower than Home's domestic price: $P_M^* \cdot d < P_M$, that is $(a_{LM}^* \cdot w^* \cdot e) \cdot d < a_{LM} \cdot w$, or

$$\frac{a_{LM}^*}{a_{LM}} < \left(\frac{w}{w^* \cdot e}\right) \cdot \frac{1}{d}. \tag{25.2}$$

If this condition is not fulfilled ($\frac{w}{w^* \cdot e \cdot d} < \frac{a_{LM}^*}{a_{LM}}$): Foreign's good M is too expensive on Home's market), Home will not import M from Foreign and will only consume domestically produced good M.

Therefore, if neither condition (25.1) nor condition (25.2) is fulfilled, no country will export or import good M. This good will be only produced and consumed locally, thus being an internationally non-traded good. Figure 25.2 sums up these results.

These results apply to any good or intermediate segment as well. The international ratio of wage rates (denoted from now on by W, with $\mathrm{W} \equiv \frac{w}{w^* \cdot e}$), adjusted for TC costs ($W \cdot \frac{1}{d}$ and $W \cdot d$), defines an interval of values

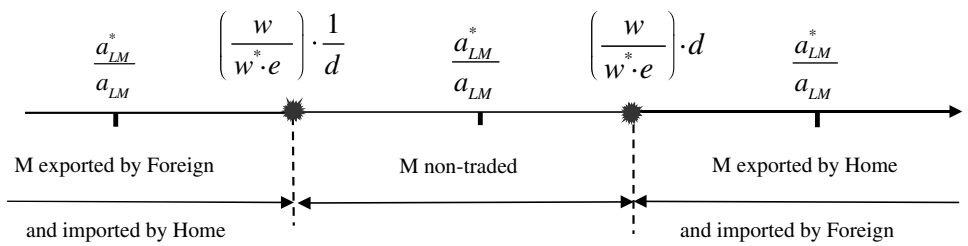

Fig. 25.2. Conditions for good M to be traded and non-traded.

[8] In a Ricardian model, this relative wage rate depends on the relative sizes of countries and demand for goods. The exact determination of this rate is of no consequence for our analysis.

for the international technology gap of good j (a^*_{Lj}/a_{Lj}) within which j is internationally non-traded. (TC costs are too high to make any country competitive for this good.)

We are now in position to expound the principle of an international division of tourism production process (IDTP). First, all sectors' technology gaps, a^*_{Lj}/a_{Lj} $(j = \mathrm{M, N, A, T, I})$, have to be ranked in order to determine the chain of comparative advantages between the two countries (Dornbusch *et al.*, 1977). Three tourism segments and two final non-tourism goods give $5! = 120$ possibilities of ranking. However, considering three cases is sufficient to draw interesting conclusions. These three cases correspond to decreasing values for d, the TC costs parameter, and could well be interpreted, in a historical perspective, as describing the gradual opening of tourism to international trade in Europe since the end of World War II.

For the purpose of illustration, we assume that the manufactured good M and the agricultural good N are always internationally traded, Home having a comparative advantage for good M $(W \cdot d < a^*_{LM}/a_{LM})$ and Foreign for good N $(a^*_{LN}/a_{LN} < W \cdot \frac{1}{d})$.

25.2.1. *Case A*

In this first case, described by the chain of comparative advantages on Fig. 25.3, the TC costs (d_1) are so high that the three tourism intermediate segments are internationally non-traded. Therefore, this will also be true of the tourism product-system V: in both Home and Foreign, tourists spend their holiday in their own country only, buying all-inclusive package tours from local tour operators and using local transport companies to travel. This case may roughly depict the situation of tourism in Europe until the fifties. International trade here is exclusively based on the exchange of final non-tourism goods: Home exports good M towards Foreign and imports good N from it.

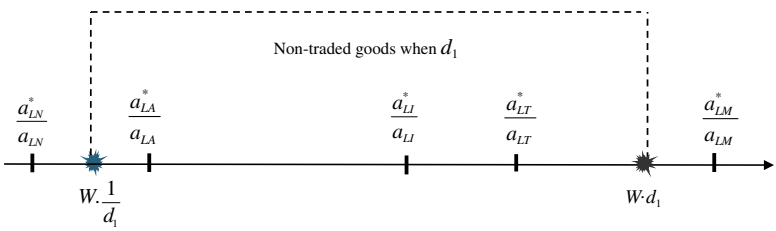

Fig. 25.3. Case A: the three tourism intermediate segments are non-traded.

25.2.2. *Case B*

In this second case, the TC costs are supposed to have decreased sufficiently ($d_2 < d_1$) to let segments A and T become internationally tradable. This may have arisen because of a trade liberalisation process, the removal of many of the above-mentioned impediments (restrictions on entry visas, on foreign currency, on foreign ownership and investment, etc.) and technological progress in transport and telecommunications.[9] However, the travel organiser segment I, still remains non-traded and national tour operators are allowed to sell their products to local tourists only. This evolution between Case A and Case B roughly fits the historical observation of the difference of the speed of liberalisation between tourism segments: In the sixties and seventies, many countries opened up to inbound tourism while the air transport sector benefited from substantial technological improvements (diffusion of jet engines) and fundamental changes in the regulation set-up (US Airline Deregulation Act of 1978, Open Skies Agreements, etc.). On the contrary, the sector of intermediaries, I, continued to be highly regulated, thus enjoying a strong protection against external competition (Sinclair and Stabler, 1997).

Let us consider the situation depicted by Fig. 25.4.[10]

Foreign displays a comparative advantage for segment A and Home for segment T. Foreign will now export accommodation services, in addition

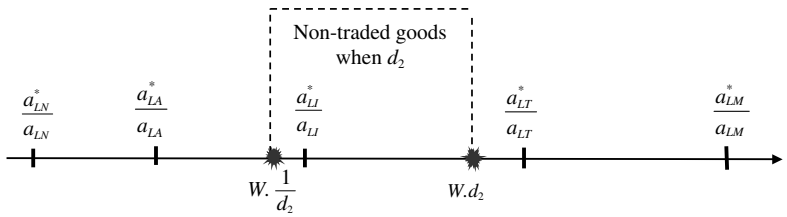

Fig. 25.4. Case B: Comparative advantage of Foreign for segment A and of Home for segment T (with segment I non-traded).

[9]For a discussion of the different ways to reach tradability for tourism services, see for example Nowak *et al.* (2010).

[10]In a general equilibrium model, any change in the TC costs d should modify W, the international ratio of wage rates, so that the two bounds defining the interval of non-traded goods should vary. However, this does not change the fundamental mechanisms explained in the text. Note also that this model could easily be extended in a framework with a *continuum* of intermediate goods, adapted from Dornbusch *et al.* (1977).

to good N, and import transport services, while Home will export transport services, in addition of good M, and import accommodation services.[11] In other words, Foreign has become a host country, accommodating Home's tourists coming with Home's carriers in its own hotels. Home is a tourism origin country that transports its residents to Foreign to spend their holiday. These residents buy the all-inclusive pre-paid package tours exclusively from Home's TOs since, in both countries, TOs are allowed to operate only in their domestic market. Despite the tradability of accommodation and transport, the final product-system V therefore remains non-traded because of the non-tradability of segment I.

More precisely, Home's TOs assemble accommodation services, food services and entertainment services bought (imported) from Foreign's firms with passenger transport services provided by national carriers to make up all-inclusive package tours V (to be sold to Home's residents only). Foreign's TOs buy (import) transport services from Home's carriers and join them with accommodation services, etc. provided by Foreign's firms to make up the final tourism product system V for Foreign's residents only. These residents spend their holiday in their own country, still travelling with Home's carriers.[12]

To sum up, each country needs the other to produce the final aggregated tourism product for its own residents. Unlike in Case A, no one is able to produce the whole package tour by themselves. The value-added chain in tourism has thus been split up. The tourism activity has been internationally fragmented and the delocalisation by Foreign of segment T to Home, and by Home of segment A to Foreign, has given rise to an IDTP. This IDTP can be detected by the existence of international trade (and therefore specialisation) in different tourism intermediate segments.

[11]Note that the tradability of T does not ensure that Foreign will be able to export its accommodation services. Home's technological efficiency in T ($1/a_{LT}$) has to be sufficiently high to reduce the total cost of holiday in Foreign of Home's residents below the cost of holiday at home. The formal conditions are available from the authors on request.

[12]This case is usually referred to as 'cabotage'. The European Union provides a good illustration of this concept of cabotage in the airline sector. It is nowadays a single market in air transport, and any airline registered within the Union is able to offer commercial services within any other part of the Union, whether between member countries or within an individual country. Of course, in the sixties and seventies, the situation was not so extreme in Europe.

25.2.3. *Case C*

Let us assume that the TC costs have decreased further ($d_3 < d_2 < d_1$), so that the travel organiser segment I, has now become traded. This could be the result of a deepened liberalisation process and the development of information communication technologies (ICTs), such as the World Wide Web and e-tourism. Because of the initial technology gap in favour of Foreign, this country wins that segment. However, let us also assume that, thanks to a technological progress in the transport segment T ($\Delta a^*_{LT} < 0$), Foreign now displays a comparative advantage in T, a sector previously owned by Home. This new situation is illustrated by Fig. 25.5.

Foreign displays a comparative advantage for all tourism segments, A, T and I, while Home displays a comparative disadvantage for all of them. Foreign is therefore able to produce the whole final tourism product system (V) by itself. Its TOs buy accommodation services, food services and entertainment services from local firms, assemble them to make up all-inclusive package tours V, and finally sell these products V to residents of both countries. The role of Home is exclusively limited to being a source country for Foreign, with all its residents going on holiday overseas.

Home will export the manufactured good M and import both the aggregated tourism product V and the agricultural good. In this highly liberalised world and with this configuration of comparative advantages, there is no trade in tourism segments here and no international division of the tourism production process. International trade is made up of exchanges of final products only (V and N for M).[13]

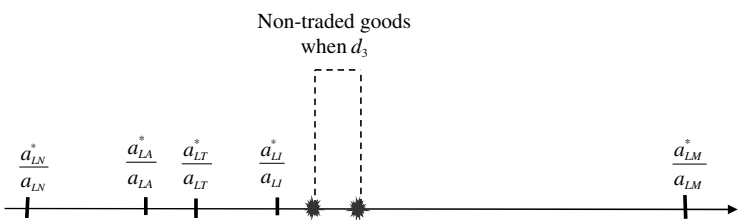

Fig. 25.5. Case C: Comparative advantage of Foreign for the three tourism intermediate segments.

[13]Of course, this case is not the only one that can arise in such a highly liberalized world. See Nowak *et al.* (2010) for other cases giving rise to many phenomenon, like for example 'inward processing imports', 'outward processing exports' or vertical specialization (Hummels *et al.*, 2001).

Finally, Cases B and C reveal two different types of tourism specialisation. If a country displays comparative advantages in *all* stages of production of the tourism product, from upstream to downstream production (like Foreign in Case C), this country is said to have a (positive) 'integrated' tourism specialisation: it produces and exports the *aggregated* tourism product. If this country has comparative disadvantages in all stages of the tourism production process (like Home in Case C), it has to import the whole tourism product-system, and we are in a situation of a negative 'integrated' tourism specialisation.

If comparative advantages can be found in some stages of production only (Case B), we observe 'partial' tourism specialisation. Countries are specialised in *different segments* of the tourism product system. An international trade in tourism segments arises from this IDTP.

25.3. The Empirical Measurement of the International Division of Tourism Production

In the international trade literature several indexes have been used to examine the overall pattern of comparative advantages and disadvantages of a national economy. In this chapter, we use the 'revealed comparative advantage' (RCA) index developed by Balassa (1965) to investigate long-term patterns of IDTP. Although pros and cons of the Balassa index are still debated in the literature, it stands as one of the most widely used indexes of international trade specialisation.[14] *The RCA index* shows the share of sector i's exports in total exports of a country j relative to the share of i's exports in total exports of a reference group of countries. It is measured by this formula:

$$RCA_{ij}^{t} = \frac{X_{ij}^{t}/X_{.j}^{t}}{X_{i.}^{t}/X_{..}^{t}} \times 100 \tag{25.3}$$

with X_{ij}^{t} and $X_{i.}^{t}$ the exports of products belonging to sector i respectively by the country j and the reference group of countries in year t; $X_{.j}^{t}$ and $X_{..}^{t}$ are the total exports of goods and services respectively of the country j and the reference group in year t.

[14]Balassa suggested that the comparative advantage is 'revealed' by observed commodity pattern of trade which reflects relative costs as well as difference in non-price factors. De Benedictis and Tamberi (2001), after describing the pros and cons of the RCA index, have concluded that it does provide *very interesting information about the state and dynamics of country advantages in international trade*, despite its shortcomings (problem of variability and asymmetry).

A value of RCA_{ij}^{t} above 100 indicates a comparative advantage of country j for sector i in year t whereas a value below 100 indicates a comparative disadvantage. Consequently, the greater the value of RCA_{ij}^{t}, the better country j's export performance in sector i.

In this empirical section the identification of any IDTP involves the measurement of RCAs for different segments of the tourism product-system. In compliance with our theoretical framework described above, the Balassa index should ideally be computed for all segments of the three-stage sequential production process of the tourism product system (described in section one). According to our theoretical framework, if RCA_{ij}^{t} is always above 100 (below 100) in country j, then we conclude that this country has a positive (negative) 'integrated' specialisation in tourism: country j exports (imports) the *aggregated* tourism product and is not affected by any IDTP. But if one RCA_{ij}^{t} is above 100 and at least one of the other ones is below 100, then we conclude that country j has a '*partial*' specialisation. It simultaneously displays comparative advantages and comparative disadvantages for different tourism segments and is thus involved in IDTP.

Unfortunately the lack of statistical data at the international level for some segments of the tourism product system prevents an assessment of the global value added chain in tourism. The only reliable tourism services data available are provided by 'Travel' and 'Transport of passengers' items of each country's balance of payments.[15] Such data clearly bring out the limitations of the estimation of travel services in international trade. Nevertheless as the 'Travel' item 'covers primarily the goods and services acquired from an economy by travellers during visits of less than one year in that economy' (IMF, 1993, Chapter XII, Travel: Paragraph 242), it can reasonably be regarded as a good proxy for accommodation, catering and entertainment services. Let us thus redefine segment A as to include accommodation, catering and entertainment segments (instead of the accommodation sector alone as in

[15]Note that only three of the four modes of supply for trade in services defined in the General Agreement on Trade in Services are considered in this study. As data on the balance of payments measures transactions between resident and non-resident entities, only 'cross-border supply' (mode 1), 'consumption abroad' (mode 2) and 'the presence of physical persons' (mode 4) for the considered tourism segments are covered by our empirical analysis. All transactions in services implied by 'commercial presence' (or foreign affiliates sales to host-country consumers; mode 3) are excluded from the balance of payments. Since no harmonised data for a large sample of countries could be found, we could not include this category of transactions in tourism services into our analysis.

our theoretical conceptualisation of international tourism trade). On the other hand, the 'Transport of passengers' item covers international carriage of travellers, which corresponds to segment T as in the previous section.[16]

RCA_{ij}^{t} for segments A and T were calculated by considering country j's trade in 'Travel' and 'Transport passenger' services with the rest of the world (i.e., *with all its partners altogether*) over a 27 year period spanning 1980–2006. The analysis has been carried out on data for a large sample of 36 countries of which 18 are OECD (and/or EU) member countries (sub-sample 1) and 18 developing countries (sub-sample 2). All data belong to the CHELEM databases (CEPII, 2006, 2011).

25.3.1. *The dynamics of the international division of tourism production*

RCA indexes for segments A and T of each country belonging to the above two sub-samples are shown in Tables 25.1 and 25.2 respectively. These indexes have been calculated over intervals of three years to provide a clearer picture of the nature and trend of international fragmentation of tourism production over the long term and to eliminate short-term fluctuations.[17]

The first point to be drawn from these tables is that only 12 of the 36 selected developed and developing countries studied are exclusively involved in *integrated* tourism specialisation (either negative or positive) for the whole period 1980–2006.[18] Seven of these are from sub-sample 1

[16]Concerning the assembling and marketing operations completed by tour operators or travel agencies (component I), the IMF Balance of Payments Manual (fifth edition) states that services of TO/travel agencies *that are residents in the country visited* are included in the 'Travel' item, but are indistinguishable (Chapter XII, Travel: Paragraph 242). Transactions of commission agents are recorded in the 'Other trade-related services' item of the BOP. The current treatment of statistics does not provide any solution for the case we are interested in, i.e., when the provider of the travel service (segments A, T) and the intermediary (segment I) are not residents of the same economy (for more details, see for example IMF BOPCOM-05/16).

[17]Even by taking intervals of three years, RCA indexes still show a great deal of fluctuation across countries for both segments A and T, especially in the case of developing countries. This fluctuation is partly due to the smaller size and less diversified economic structure of countries belonging to sub-sample 2. They seem to be more strongly affected by, and more vulnerable to, changes in the international economic environment than countries from sub-sample 1.

[18]This situation corresponds to Case C of our theoretical framework when segment I is traded.

Table 25.1. Dynamics of revealed comparative advantages in segment *A* (1980–2006).

Country	1980–1982	1983–1985	1986–1988	1989–1991	1992–1994	1995–1997	1998–2000	2001–2003	2004–2006
Sub-sample 1									
Australia	112.2	109.5	128.3	139.1	149.8	186.0	186.1	205.8	229.9
Canada	81.2	73.6	71.4	70.7	59.1	57.6	56.8	57.5	61.4
Cyprus	529.3	632.9	661.3	669.7	673.5	593.8	615.9	606.8	545.6
Finland	92.7	69.6	63.5	66.0	64.3	54.8	48.5	48.3	49.3
Germany	58.2	55.3	51.4	50.1	48.1	47.4	47.7	46.1	48.5
Greece	485.4	394.4	405.7	312.4	373.0	408.1	527.1	524.8	487.8
Israel	263.3	244.7	169.7	140.9	154.8	168.4	160.8	94.2	87.2
Italy	198.6	192.2	145.3	127.5	152.7	153.9	153.5	144.8	145.5
Japan	10.3	11.9	13.9	15.6	13.1	13.0	12.0	18.1	29.7
Malta	681.3	473.7	499.8	431.8	369.4	358.0	315.5	303.0	297.7
Poland	22.3	16.0	21.1	22.1	59.3	110.3	164.9	125.7	106.1
Portugal	379.0	297.8	297.0	276.9	250.2	234.9	253.7	266.3	269.2
South Korea	44.8	49.5	75.6	70.0	46.3	50.8	62.7	50.6	33.0
Spain	497.0	457.6	466.9	372.0	320.8	292.0	294.8	292.9	305.8
Sweden	63.9	68.9	67.8	67.2	62.5	57.8	62.9	71.8	79.8
Switzerland	155.6	160.8	139.6	128.9	120.3	115.0	95.3	93.7	95.2
United-Kingdom	103.8	109.7	111.4	105.5	94.0	97.8	93.6	82.8	96.0
United-States	112.0	137.5	147.8	155.0	154.9	150.7	148.3	145.6	147.6
Sub-sample 2									
Argentina	107.1	104.2	119.1	101.8	150.9	144.4	157.8	110.6	110.5
Botswana	104.0	88.5	56.7	82.1	89.8	80.5	122.8	184.5	210.9
Brazil	14.2	4.4	6.2	56.0	34.3	26.0	43.1	47.6	53.8
Columbia	232.1	108.2	110.4	80.0	107.8	113.0	108.1	116.1	100.0
Costa Rica	209.8	223.8	186.9	231.2	283.9	234.1	234.9	278.6	312.7
Jamaica	513.1	715.3	663.2	561.0	557.8	521.0	589.6	639.1	721.9
Jordan	696.9	569.8	489.1	315.6	286.1	325.3	357.6	360.4	410.8
Malaysia	69.5	75.1	65.9	75.4	69.5	72.7	59.9	103.2	106.2
Morocco	318.6	360.9	380.5	312.4	267.8	250.3	298.9	381.9	477.0
Myanmar	53.8	63.2	88.0	73.6	194.7	186.2	150.8	55.5	32.5
Peru	147.2	115.1	113.8	90.3	73.6	135.6	175.3	148.3	122.5
Philippines	120.4	137.8	110.6	71.6	93.6	78.3	86.1	77.5	103.7
South Africa	137.3	137.8	95.8	112.6	99.4	113.9	128.0	153.4	203.2
Sri Lanka	202.9	134.0	79.4	88.1	92.8	64.6	69.0	92.6	108.0
Tanzania	66.9	76.7	118.3	145.0	247.5	544.9	561.9	555.3	535.1
Thailand	268.0	274.9	247.0	236.4	176.1	185.2	152.8	154.9	153.1
Tunisia	463.9	433.3	443.8	304.3	308.2	307.0	322.6	275.8	276.3
Uruguay	336.2	289.8	250.7	207.1	252.8	288.4	294.9	242.9	210.8

Source: CHELEM database (CEPII, 2006, 2011), authors' calculations.

Table 25.2. Dynamics of revealed comparative advantages in segment T (1980–2006).

Country	1980–1982	1983–1985	1986–1988	1989–1991	1992–1994	1995–1997	1998–2000	2001–2003	2004–2006
Sub-sample 1									
Australia	209.2	187.4	226.9	194.6	259.5	454.0	429.4	469.8	503.2
Canada	89.4	60.1	64.0	56.1	45.7	52.3	60.2	64.7	64.1
Cyprus	767.4	718.5	688.3	530.2	522.7	393.9	375.3	413.5	482.9
Finland	163.8	150.3	151.6	152.5	149.8	133.8	125.3	130.4	140.9
Germany	110.4	105.4	83.2	87.8	89.9	91.6	101.6	98.7	94.6
Greece	3.4	7.9	21.3	18.7	37.9	19.5	16.5	25.8	23.9
Israel	294.0	249.2	218.1	172.4	165.0	136.0	113.2	79.3	108.1
Italy	125.6	109.6	80.6	66.6	59.3	49.2	40.0	40.8	77.0
Japan	41.0	32.8	29.9	28.5	27.1	31.1	43.6	56.9	55.2
Malta	612.6	563.6	425.3	413.5	446.2	459.6	451.5	436.8	462.3
Poland	65.0	62.7	62.8	130.2	95.4	76.8	88.1	106.7	85.3
Portugal	150.8	116.6	91.9	49.2	142.0	212.7	223.2	240.6	305.3
South Korea	188.5	144.9	103.8	94.4	93.5	84.6	77.7	86.6	88.6
Spain	174.5	297.1	247.2	166.7	107.1	139.9	146.7	200.4	225.7
Sweden	149.5	121.8	119.0	114.8	103.1	63.6	68.4	99.5	91.8
Switzerland	245.3	222.6	168.1	141.3	128.7	138.3	172.0	163.4	118.3
United-Kingdom	232.9	227.1	206.8	183.7	185.7	185.8	188.8	189.8	181.8
United-States	209.2	187.4	226.9	194.6	259.5	454.0	429.4	469.8	503.2
Sub-sample 2									
Argentina	158.0	162.3	223.5	221.9	176.0	108.1	90.3	67.9	126.9
Botswana	71.7	49.7	36.2	37.7	40.0	35.2	15.6	14.1	3.3
Brazil	27.8	20.5	31.3	9.4	40.6	9.9	17.1	21.8	22.3
Columbia	306.4	223.8	223.7	165.1	209.1	161.4	185.4	198.4	188.2
Costa Rica	217.4	274.1	182.1	180.0	196.8	168.3	183.5	207.1	176.0
Jamaica	494.8	578.3	590.3	422.0	334.3	352.5	556.8	847.9	738.8
Jordan	1514.6	1508.5	1063.9	740.4	728.9	711.4	567.2	483.2	588.0
Malaysia	147.7	145.0	146.7	120.2	106.4	112.4	80.1	85.3	110.0
Morocco	296.1	164.0	100.3	64.9	132.5	170.2	194.8	418.4	499.9
Myanmar	30.9	38.2	53.2	42.5	61.4	161.8	147.9	64.8	44.7
Peru	90.6	79.3	117.2	87.7	91.1	113.2	55.8	51.8	83.7
Philippines	24.1	15.3	42.1	27.4	25.4	1.4	21.4	77.5	119.8
South Africa	120.6	104.2	74.6	90.3	94.8	131.0	159.7	216.4	200.8
Sri Lanka	32.9	97.5	180.1	290.5	269.2	229.8	218.3	366.7	474.5
Tanzania	20.6	36.0	43.8	40.0	32.5	23.8	30.3	40.0	87.7
Thailand	68.9	36.5	110.0	143.3	182.8	156.4	276.9	314.6	273.1
Tunisia	533.6	543.1	334.3	276.9	345.2	329.2	321.4	345.3	513.2
Uruguay	23.7	225.3	143.3	196.1	257.4	291.8	269.6	259.9	255.4

Source: CHELEM database (CEPII, 2006, 2011), authors' calculations.

(developed economies) and five from sub-sample 2 (developing countries). Some of these countries have comparative disadvantages in both segments of tourism production and, as a result, import their entire tourism product system (Canada, Japan, and Brazil). Others display a comparative advantage in the entire tourism product system (United States, Spain, Cyprus, Malta, Australia, Costa Rica, Jamaica, Tunisia and Jordan). These countries account for one third of the large sample, meaning that two thirds (or 24 out of 36 selected countries) have been involved at least once in a form of IDTP.[19]

Two of these 24 countries are permanently involved in IDTP (Greece which specialises only in segment A, and Finland which specialises only in segment T). Seven countries displayed some form of temporary partial specialisation on an occasional basis during 1980–2006: the United Kingdom, Sweden, Malaysia and Sri Lanka displayed specialisation in segment T while Italy, Peru and Tanzania displayed comparative advantages in segment A. The second point that deserves mention is that IDTP is a dynamic rather than static phenomenon. In seeking a possible explanation for this dynamic of tourism specialisation patterns, one can rely on at least two main potential reasons: (a) The decline of TC costs, particularly in the transport and communications sectors, which suggests that tourism segments that were previously considered as non-traded became traded when TC costs fall; and (b) The changes of countries' comparative advantages arising from differences in technology, as in Ricardo or/and from differences in relative factor endowments, as in Hecksher–Ohlin.

Of the 36 countries, 10 (or 28% of the entire sample of countries), saw a definitive change in the nature of tourism specialisation. Five countries moved from a form of integrated specialisation to some kind of partial specialisation. The United Kingdom and Switzerland recorded a comparative advantage in both segments of tourism production but moved to a form of IDTP while specialising only in passenger transport services. Italy has been through a similar process, but as a result has emerged with comparative advantage in the accommodation segment. Tanzania has moved from a situation of comparative disadvantage in both segments to a comparative advantage in segment A. Botswana has seen a similar evolution, showing, at the end of the study period a specialisation in segment A.

[19]This means that 66% of the selected countries have been involved at least once in Case B of our theoretical framework when segment I is non-traded.

Four countries went from partial specialisation to positive (or negative) integrated specialisation. Uruguay and Thailand were involved in IDTP while specialising uniquely in segment A. These countries are now specialised in both tourism segments. Two further countries had specialised in a single segment (Sweden and South Korea in segment T) and by the end of the period under consideration displayed comparative disadvantages in both tourism segments.

Finally, we can see that nine countries are involved in IDTP on an occasional basis: Germany showed a partial tourism specialisation in segment T and subsequently experienced a comparative disadvantage in both segments (however, between 1998 and 2002 Germany again recorded partial specialisation); Portugal has specialised in both segments of tourism production, except between 1986 et 1991, when it specialised only in segment A; Israel displayed positive integrated tourism specialisation but between 2001 and 2003 recorded a negative integrated tourism specialisation, before going on, in the last three years studied, to specialise uniquely in the transport segment; Poland has a rather complex profile, beginning the period with a negative integrated tourism specialisation, then displaying three years of partial specialisation in segment T, before alternating between periods of positive integrated specialisation and partial specialisation in the accommodation segment; South Africa exhibits positive integrated tourism specialisation for most of the period under investigation, with the exception of two separate three year periods (1986–1988; 1992–1994) when negative integrated specialisation held sway, and, a further period, between 1989–1991, when the country displayed a unique specialisation in Segment A; Argentina displays some positive integrated tourism specialisation with the exception of the years 1998–2003 which saw a comparative disadvantage in segment T; Morocco has a similar profile with a three year period (1989–1991) of partial tourism specialisation in segment A; Columbia overall shows positive integrated specialisation but with one period (1989–1991) of comparative disadvantage in the accommodation sector; finally Myanmar also shows a complex profile with negative integrated tourism specialisation for most of the study, but with, between 1992 to 1994, a specialisation in Segment A only, and in the following six years specialisation in the entire tourism production process.

It is important to note that this evolution can sometimes seem complex (see, for example, the case of Poland, South Africa, Myanmar and Peru). These shifts between integrated and partial specialisation confirm the dynamic nature of IDTP, which seems to have been facilitated in recent years by advances in the transport and communications technologies, such as

computer reservation system (CRS) global distribution system (GDS) and the internet, all of which have greatly reduced the search costs of potential travellers as well as the cost of coordinating tourism production tasks around the globe. This dynamic of a country's comparative advantage patterns shows that globalisation in tourism has increased the interdependence between destinations and has led to the creation of this globalised tourism production where countries, which are expected to compete, nowadays function interactively thanks to the fall in TC costs and the changes arising from technology differences and factor cost differences.

25.3.2. *The impact of the IDTP in international tourism trade*

In order to examine the impact of IDTP in international tourism trade, a more detailed analysis of the frequency and weighting of each form of tourism specialisation in total international tourism trade is presented below.

As shown in Tables 25.3 and 25.4, the proportion of cases of partial specialisation represent on average 32.1% of possible cases (country-year) of specialisation for the entire period 1980–2006 for selected industrialised economies and 30.2% for developing countries. In other words, almost a third of the selected countries, regardless of which sub-sample they belonged to, did not import or export the entire system of tourism production during the 1980–2006 period. These countries must import some segments of tourism production in exchange for others which they produce and export. This high frequency of IDTP cases observed highlights once again the importance of this globalised fragmentation of tourism production processes. Interestingly,

Table 25.3. Significance of IDTP cases observed, 1980–2006 (%).

	Average share of each form of specialisation in sub-sample 1	1980–1989	1990–1999	2000–2006	1980–2006
Integrated specialisation	2 *segments*	50.0%	42.8%	34.9%	43.4%
	0 *segment*	20.6%	26.7%	27.0%	24.5%
Partial specialisation (IDTP)	1 *segment*	29.4%	30.6%	38.1%	32.1%

Note: Average share represents the percentage of observed cases of each kind of specialisation in total aggregated flows.
Source: CHELEM database (CEPII, 2006, 2011), authors' calculations.

Table 25.4. Significance of IDTP cases observed, 1980–2006 (%).

	Average share of each form of specialisation in sub-sample 2	1980–1989	1990–1999	2000–2006	1980–2006
Integrated specialisation	2 *segments*	45.0%	53.3%	57.1%	51.2%
	0 *segment*	20.6%	18.3%	15.9%	18.5%
Partial specialisation (IDTP)	1 *segment*	34.4%	28.3%	27.0%	30.2%

Note: Average share represents the percentage of observed cases of each kind of specialisation in total aggregated flows.
Source: CHELEM database (CEPII, 2006, 2011), authors' calculations.

there is a substantial difference in terms of overall pattern of tourism specialisation between both groups of countries as shown in the following tables and figures.

A more detailed examination of the evolution of integrated and partial specialisation in each group of countries shows that IDTP is not a recent phenomenon, as the frequency of cases observed was already high at the beginning of the 1980s. In fact, the proportion of cases of partial specialisation in selected developed countries was around 29% during 1980–1989 (see Table 25.3 and Fig. 25.6). After several periods of fluctuation, that proportion seems to have strongly increased since the end of the 1990s, with IDTP becoming the most frequently observed form of tourism specialisation from early-2000s onwards (an average of 38.8% of cases in sub-sample 1 during the period 2000–2006). However, an analysis of the dynamics of tourism specialisation in developing countries revealed different patterns from those found in developed countries. While the relative importance of partial specialisation in sub-sample 2 was around 35% during the 1980s, its frequency fell in the following two decades to represent less than 20% of all cases observed by the end of the period under investigation (see Table 25.4 and Fig. 25.7). For this sub-sample 2, the corresponding decline in IDTP over the period 1980–2006 has been accompanied by an increase in the proportion of cases of positive integrated specialisation (comparative advantages in both segments) and a decline in the frequency of negative integrated specialisation (comparative disadvantages in both segments). This rise in positive integrated specialisation seems to be related to these countries that were relatively successful in building new comparative advantages within the tourism industry (especially in segment T). This is partly due to the development of ICT and land and air transport infrastructure in developing

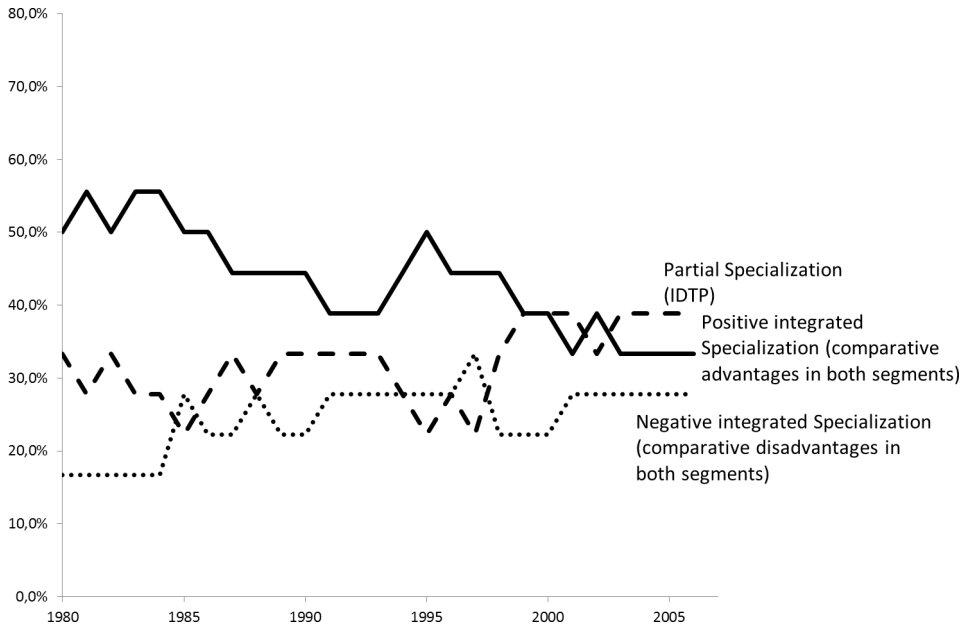

Fig. 25.6. Evolution of integrated and partial specialisation, 1980–2006 (%) (Sub-sample 1).
Note: Share represents the percentage of observed cases of each kind of specialisation in total aggregated flows.
Source: CHELEM database (CEPII, 2006, 2011), authors' calculation.

countries that have followed a variety of restructuring strategies to improve their competitiveness (including the introduction of competition, privatisation, deregulation, and liberalisation of the transport and ICT sectors). Such increased specialisation in passenger transport is most pronounced for developing countries, such as South Africa and Thailand. On the contrary, several advanced countries from sub-sample 1 seem to have abandoned their specialisation in segment T (Germany, Italy, Sweden, South Korea), thereby contrasting strongly with the situation of developing countries that have accelerated their degree of specialisation in transportation (Jamaica, Malaysia, Morocco, Uruguay, Sri Lanka, South Africa, and Thailand). In short, several developing countries with significant competencies and rapidly developing ICT and transportation infrastructure appear nowadays to be serious players in the whole tourism production process.

However, examining the frequency of countries displaying a partial tourism specialisation is an insufficient basis for assessing the importance of IDTP since their trade flows in segments A and T might be small. The

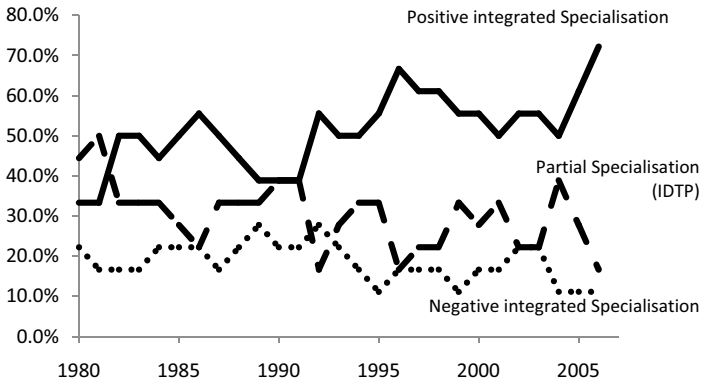

Fig. 25.7. Evolution of integrated and partial specialisation, 1980–2006 (%) (Sub-sample 2).
Note: Share represents the percentage of observed cases of each kind of specialisation in total aggregated flows.
Source: CHELEM database (CEPII, 2006, 2011), authors' calculations.

latter remark leads us to examine further the phenomenon of IDTP in international tourism trade.

Results in Tables 25.5 and 25.6 show the weighting of each form of tourism specialisation in total international tourism trade.[20] Between 1980 and 2006, countries involved in IDTP represented on average, 26.5% of total tourism exports in sub-sample 1 and 21.1% in the second sub-sample. These

Table 25.5. Weighting of IDTP in total tourism exports, 1980–2006 (%).

	Average share of each form of specialisation in sub-sample 1	1980–1989	1990–1999	2000–2006	1980–2006
Integrated specialisation	2 *segments*	68.2%	58.0%	52.5%	57.1%
	0 *segment*	12.6%	16.3%	17.1%	16.3%
Partial specialisation (IDTP)	1 *segment*	19.1%	25.7%	30.3%	26.5%

Note: Exports of segments A and T by developed countries involved in IDTP in their total exports of A and T.
Source: CHELEM database (CEPII, 2006, 2011), authors' calculations.

[20]The weighting of each form of tourism specialisation is defined as the sum of exports of segment A and T by countries involved in positive (negative) integrated specialisation or IDTP over the whole group's sum of exports of A and T.

Table 25.6. Weighting of IDTP in total tourism exports, 1980–2006 (%).

	Average share of each form of specialisation in sub-sample 2	1980–1989	1990–1999	2000–2006	1980–2006
Integrated specialisation	2 *segments*	57.3%	63.7%	68.7%	66.9%
	0 *segment*	7.8%	12.8%	13.6%	12.1%
Partial specialisation (IDTP)	1 *segment*	34.9%	23.5%	17.7%	21.1%

Note: Exports of segments A and T by developed countries involved in IDTP in their total exports of A and T.
Source: CHELEM database (CEPII, 2006, 2011), authors' calculations.

results seem also to confirm the upward trend in industrialised economies and the downward trend in developing countries. In the first group, the weighting of tourism exports from countries with a partial specialisation went from 19.1% during the 1980s to 30.3% over the period 2000–2006. In contrast with developed economies, the weighting of IDTP in developing countries fell almost continuously from 34.9% at the start of the period (80–89) to less than 18% during 2000–2006. This period was also characterised by an increase (decrease) of the weighting of positive integrated tourism specialisation in developing countries (developed countries). The above results confirm our previous findings which show that, unlike developed countries, developing countries seem to become more specialised in performing different segments in the production of tourism products. In these countries, travel services seem to be provided more efficiently by local tourism and travel providers that take care of both segments A and T of the tourism product. Much of this has been facilitated in recent years by the advent of the internet and its impact on the intermediation role of tour operators in the tourism product system as well as the development of hotel chains and low cost carriers in developing countries (Thailand, Malaysia, Morocco, etc).

In contrast, the weighting of IDTP in selected industrialised economies increased from 19.1% in the early years (1980–1989) to 30.3% in the final few years (2000–2006). This finding suggests that tourism production in these countries no longer require all the segments that go into its making to be performed locally. Some countries *have* a comparative *advantage* at producing segment A while others rely on exporting segment T, leading to a more globalised tourism production process.

25.4. Concluding Remarks

This chapter has attempted to examine the IDTP phenomenon by developing a simple two country model of international trade that assumes the existence of transport, transaction and communication costs for both intermediate inputs and final goods. In this respect, the IDTP phenomenon refers to the breaking-up of tourism production processes into various components, which can be produced in different locations around the globe. As discussed above, this analytical framework illustrates not only the process of international fragmentation of tourism production, but also the impact of technological and transportation improvements on the global tourism industry. From an empirical point of view, our findings demonstrate that the model's empirical predictions of the IDTP phenomenon in two segments of the tourism industry do hold up. This is compatible with the underlying assumptions of the theoretical framework. RCA indexes for segments A and T have shown that tourism specialisation is a dynamic process, and the scale of partial specialisation is relatively high for both sub-samples of countries. However, there seem to be differences in the patterns of tourism specialisation between these two groups of countries over the period 1980–2006. Finally, this trade approach to tourism research offered a compelling opportunity to highlight the importance of the multi-task global tourism production process, while also contradicting the widespread assumption that tourism is an industry where globalisation and 'the great unbundling' do not come into play.

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Chapter 26

INTERNATIONAL TOURISM: ITS COSTS AND BENEFITS TO HOST COUNTRIES

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Abstract: An expansion of inbound tourism increases the demand for locally produced non-traded goods and services, thereby raising the relative prices of them. In the short run, the increase in tourism can bring benefits in terms of raising tax revenues, increasing sectoral employment and improving environmental quality. Nonetheless, in the long run, costs for the increase in tourism may arise. A tourism boom can cause 'Dutch Disease' in lowering capital formation of the non-tourism sectors. Moreover, the expansion of tourism can reduce foreign reserves of the economy. Therefore, how to balance the short-run benefits versus long-run costs is of concern to policy makers in attracting international tourists to the economy.

Keywords: Capital formation and inbound tourism; Dutch disease; employment; environmental quality and inbound tourism; foreign resources and inbound tourism; international tourism; policy; taxation; tourism costs and benefits; welfare.

26.1. Introduction

As the world expands and connects globally, international tourism has become a fast growing industry in many advanced and emerging economies. The number of international tourist arrivals in 1990 was 435 million, while it had reached 983 million by 2011.[1] Besides earnings of foreign exchanges, international tourism contributes significantly to national income and employment in many economies.[2]

Foreign tourists visit the countries by consuming a bundle of locally produced goods and services with unique destination features. As noted

[1]See p. 4, *UNWTO Tourism Highlights*, 2012 edition.
[2]For example, the tourism industry is one of the four pillars of the economy of Hong Kong. In 2009, it contributed to 3.3% of Hong Kong's GDP and 5.5% of her employment.

by Copeland (1991) and Hazari and Sgro (2004), tourism transforms these formally non-traded goods and services into exportables. An increase in tourism raises the prices of them, thereby yielding an improvement in the terms of trade and hence enhancing the welfare of the economies.

In addition to the major means of earning foreign exchange, this chapter uses a unified framework to discuss various short- and long-run benefits and costs of tourism for the host economies. In the short run, an increase in tourism can bring benefits in terms of raising tax revenues, increasing sectoral employment and improving environmental quality. Nonetheless, in the long run, costs for the increase in tourism may arise.[3] For instances, a tourism boom can cause so-called 'Dutch Disease' in lowering capital formation of the non-tourism sectors. Moreover, contrary to the conventional belief, an expansion of tourism can reduce foreign reserves of the economy. Therefore, how to balance the short-run benefits versus long-run costs is a concern in policy makings for attracting international tourists to the economy.[4]

The organisation of this chapter is, as follows. Section 26.2 provides analyses of inbound tourism on tax revenue, sectoral employment and environmental quality in the short run, while Sec. 26.3 offers some considerations for examining the effects of tourism on capital formation and foreign reserves in the long run. Section 26.4 provides conclusions.

26.2. Short-run Effects of Tourism

Following Copeland (1991), we lay out a benchmark model of tourism in the short run.[5] Suppose that the host economy produces two goods, a traded manufacturing good X and a non-traded service good Y by using labour, capital and land. The production technologies that apply are under constant returns to scale with diminishing productivities of factors. Choosing good X as numeraire, the relative price of good Y is denoted by p. Since good Y is non-tradable, its price p is endogenously determined in the economy.

[3]Also see Mohan *et al.* (2007) for the discussion on congestion costs caused by tourists in small island tourism economies (SITEs).

[4]An earlier paper by Tisdell (1983) sets out a series of policy instruments for appropriating national gains from tourists. These include, inter alia, taxes on tourist facilities, entry and departure taxes and charges for tourist visas.

[5]By using a general-equilibrium framework, Copeland (1991) analyses the effects of tourism on welfare and income distribution of the host economy.

The production side of the economy can be represented by the revenue function: $R(1,p) = \max\{X + pY\colon (X,Y) \in \Gamma(L,K,V)\}$, where $\Gamma(\cdot)$ denotes the production set and L, K and V are respectively the supplies of labour, capital and land in the economy. Using the subscripts as the partial derivatives, we have the outputs: $R_1 = X$ and $R_p = Y$, with $R_{1p} < 0$ when goods X and Y are substitutes in production and $R_{pp} > 0$ for the positive supply function of good Y. It is noted that in the short run, accumulation of capital is ignored.

As for the demand side, there are two types of consumers in the economy — domestic residents and foreign tourists. Domestic residents consume both goods, denoted respectively by C_X and C_Y, and their demand can be expressed by the expenditure function: $E(1,p,u) = \min\{C_X + pC_Y\colon u(C_X,C_Y) = u\}$, where $u(\cdot)$ represents the utility function and u is the level of utility. By the envelope property, we have $E_1 = C_X$ and $E_p = C_Y$, with $E_{1p} > 0$ for the substitutes in consumption between the two goods and $E_{pp} < 0$ by the downward sloping demand function of good Y. While foreign tourists demand the non-traded good Y only, denoted by $D_Y(p,\alpha)$, where α represents a shift parameter for inward tourism, such as international visitor arrivals, with $\partial D_Y/\partial p < 0$ and $\partial D_Y/\partial \alpha > 0$.

In the benchmark model, we assume away sectoral externalities and market distortions or market failures in the economy. In addition, the government levies no taxes. The host country's budget constraint therefore becomes

$$E(1,p,u) = R(1,p), \tag{26.1}$$

in which total expenditure by domestic residents is equal to the revenue from production of the two goods. Moreover, in equilibrium, the market of the non-traded good needs to be cleared:

$$E_p(1,p,u) + D_Y(p,\alpha) = R_p(1,p). \tag{26.2}$$

Equations (26.1) and (26.2) consist of two unknowns, u and p, with an exogenous parameter α for inward tourism. Since $E(\cdot)$ and $R(\cdot)$ are homogenous of degree zero in goods prices, trade is balanced in the sense that $E_1 - R_1 = pD_Y$. That is, the value of excess demand for imports of good X is equal to the revenue from exporting tourism. Hence, inbound tourism transforms the formally non-traded good Y into the exportable.

Solving (26.1) and (26.2), the effect of an increase in tourism on the non-tradable price of good Y can be obtained as

$$dp/d\alpha = -(\partial D_Y/\partial \alpha)/\Delta > 0, \tag{26.3}$$

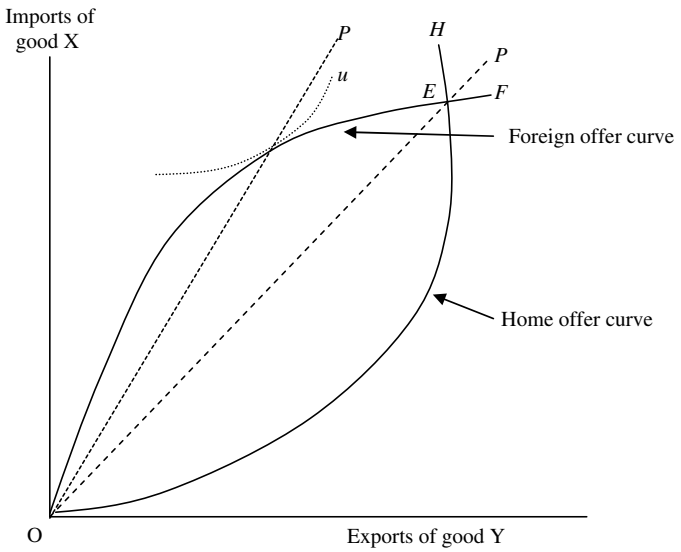

Fig. 26.1. Offer curves used to consider the price and welfare effects of increased inbound tourism.

where $\Delta = (E_{pp} + \partial D_Y/\partial p - R_{pp}) + (m_Y/p)D_Y < 0$ by the stability condition and $m_Y = pE_{pu}/E_u$ is the marginal propensity to consume good Y.[6] The increase in tourism raises the demand for the non-traded good Y and hence its price. This improves the terms of trade because the country exports tourism. By differentiating (26.1) and then using (26.2), the welfare effect of tourism can be derived:

$$E_u(du/d\alpha) = D_Y(dp/d\alpha), \tag{26.4}$$

where $E_u(= \partial E/\partial u) > 0$, being the inverse of marginal utility of income. The expansion of tourism thus increases domestic welfare via the improvement in the terms of trade, as follows: $E_u(du/d\alpha) = -D_Y(\partial D_Y/\partial\alpha)/\Delta > 0$.

We can depict the above price and welfare effects of increased tourism in Fig. 26.1, in which the home and foreign offer curves, OH and OF, intersect at point E. The relative price of the non-traded good Y is then determined

[6]To consider the stability requirements of the model, we assume that the price adjustment of the non-traded good Y is, as follows: $\dot{p} = \rho H(p)$, where a dot over variables denotes the time derivative and ρ is the positive adjustment coefficient. Note that H expresses excess demand for good Y, i.e., $H = E_p(1, p, u) + D_Y(p, \alpha) - R_p(1, p)$. The necessary and sufficient condition for stability of the economy requires: $dH/dp < 0$. By solving (1) and (2), we obtain: $dp/dH = 1/\Delta$. Hence, stability requires $\Delta < 0$.

by line OP, which gives the welfare of the host economy (not drawn). The increase in tourism rotates the price line northwest and hence raises welfare of the host economy.

Turning to the output effect of tourism on the manufacturing good X, we have:

$$dX/d\alpha = R_{1p}(dp/d\alpha) < 0, \tag{26.5}$$

where recalling $R_{1p} < 0$ since goods X and Y are substitutes in production. This is noted in Copeland (1991) that the expansion of tourism may result in the so-called 'Dutch disease' effect of de-industrialisation in manufacturing.[7]

The key feature in the above analysis is that international tourism transforms the non-traded goods into exportables. In summary, despite the cost of de-industrialisation in manufacturing, an expansion of inward tourism benefits the small open economy through the improvement in the terms of trade.

We now examine further the costs and benefits of tourism by extending the above benchmark model via the introduction of policy instruments, such as taxes/subsidies, and considerations of market distortions or failures in the economy.

26.2.1. *Tourism tax (export tax)*

As shown in (26.4), the presence of tourism generates a demand distortion because foreign tourists push up the price of the non-traded good. To correct this distortion, a tax on them would be the first-best policy.[8] Letting τ be a specific tax on tourists for purchasing good Y, the equilibrium conditions in (26.1) and (26.2) are accordingly modified as

$$E(1, p, u) = R(1, p) + \tau D_Y(p + \tau, \alpha), \tag{26.6}$$

$$E_p(1, p, u) + D_Y(p + \tau, \alpha) = R_p(1, p). \tag{26.7}$$

It is noted that revenue from tourism taxation in (26.6) is returned to domestic residents in a lump-sum fashion. Solving (26.6) and (26.7), we obtain the welfare effect of the tourism tax:

$$du/d\tau = (E_{pp} - R_{pp})[D_Y + \tau(\partial D_Y/\partial p)]/\Delta_\tau, \tag{26.8}$$

where $\Delta_\tau = (E_{pp} + \partial D_Y/\partial p - R_{pp}) + (m_Y/p)[D_Y + \tau(\partial D_Y/\partial p)] < 0$ for stability of the economy. Since $\partial D_Y/\partial p < 0$, we have $du/d\tau > (<)0$ when

[7]The literature on the 'Dutch disease' can be found in Corden and Neary (1982).
[8]For example, visitors to France need to pay a tourism tax, varying from €0.15 to €1.07.

$\tau/p < (>)1/\varepsilon^*$, where $\varepsilon^*[= -(\partial D_Y/\partial p)(p/D_Y)]$ denotes the price elasticity of tourists' demand for good Y. Hence, an introduction of a tourism tax raises domestic welfare, and the welfare is maximised when the tax is levied at $\tau/p = 1/\varepsilon^*$. This is the optimal tax rate on tourists. In Fig. 26.1, the increase in taxes on tourism rotates the home offer curve OH northwest. The highest domestic welfare attainable is then at the non-tradable good price OP', which yields the optimal tourism tax.[9]

Consider next the welfare effect of tourism in the presence of tourist taxation. Totally differentiating (26.6) and using (26.7), we have the change in welfare:

$$E_u(du/d\alpha) = D_Y(dp/d\alpha) + \tau(dD_Y/d\alpha), \tag{26.9}$$

in which the last term in (26.9) captures the change in tax revenue, contributing to the welfare of the host economy. Since the change in tax base, i.e., the amount of tourist demand for good Y, consists of the direct and the priced-induced change: $dD_Y/d\alpha = \partial D_Y/\partial\alpha + (\partial D_Y/\partial p)(dp/d\alpha)$, we need to examine the price effect of tourism. Solving (26.6) and (26.7), we obtain

$$dp/d\alpha = -[1 + \tau(m_Y/p)](\partial D_Y/\partial\alpha)/\Delta_\tau > 0. \tag{26.10}$$

Compared with (3), tax revenue from tourism enhances the increase in the price of the non-traded good Y. By substituting (26.10) into (26.9), the welfare effect of tourism is given by

$$du/d\alpha = -[D_Y + \tau(R_{pp} - E_{pp})](\partial D_Y/\partial\alpha)/\Delta_\tau > 0. \tag{26.11}$$

Hence, the benefit of tourism is enlarged when tourism taxation is present in the economy. This lends support to the levying of taxes on inbound tourists.[10]

26.2.2. *Import tariff*

Import tariffs have been a major trade policy in most countries. Consider a specific tariff t levied on the imports of good X, and its domestic tariff-included price is $1 + t$. The equilibrium conditions of the host economy described in (26.1) and (26.2) become

$$E(1 + t, p, u) = R(1 + t, p) + t[E_1(1 + t, p, u) - R_1(1 + t, p)], \tag{26.12}$$

$$E_p(1 + t, p, u) + D_Y(p, \alpha) = R_p(1 + t, p). \tag{26.13}$$

[9]This optimal tax on tourists resembles the optimum tariff on imports of goods for a large country that can affect the world price of the importable goods.

[10]See Gooroochurn and Sinclair (2008) on commodity taxation in the presence of foreign tourists.

Tariff revenue in (26.12) is returned to domestic residents. Differentiating (26.12) and using (26.13), we can solve the welfare effect of tourism for the economy with import tariffs:

$$E_u[1-m_x t/(1+t)](du/dT) = D_Y(dp/dT)+t(E_{1p}-R_{1p})(dp/dT), \quad (26.14)$$

where $E_{1p} > 0$ and $R_{1p} < 0$ since goods X and Y are substitutes in consumption and production. It is noted that $1 - m_x t/(1 + t) > 0$ because $m_Y < 1$. The higher price of the non-traded good Y caused by a tourism boom increases the imports of good X and hence the tariff revenue is shown by the last term of (26.14). This revenue contributes to domestic welfare, in addition to the gain in the terms of trade.

26.2.3. *Unemployment*

Job creation is an important consideration for policy making. Does tourism create jobs? To address this question, we need to relax the assumption of full employment in the economy.

Assuming constant returns-to-scale technologies with diminishing productivities, the production functions of goods X and Y are:

$$X = X(L_X, K), \quad (26.15)$$

$$Y = Y(L_Y, V), \quad (26.16)$$

where L_i is labour employed in sector i, and K and V are capital and land specific to sector X and Y respectively. Workers are hired according to their value marginal productivities:

$$w_X = X_L(L_X, K), \quad (26.17)$$

$$w_Y = pY_L(L_Y, V). \quad (26.18)$$

Following Harris and Todaro (1970), a minimum wage rate (w_X) is institutionally set in the manufacturing sector X while flexible wage (w_Y) prevails in the non-traded service sector Y. Due to the above-market minimum wage, unemployment (L_u) exists in sector X. The chance to get a job in sector X is hence: $L_X/(L_X + L_u) = 1/(1 + \mu)$, where $\mu = L_u/L_X$ denotes the unemployment ratio in sector X. Equilibrium in the labour market requires that the expected wage rate in sector X is equal to the actual wage in sector Y:

$$w_X/(1 + \mu) = w_Y. \quad (26.19)$$

In addition, the condition of labour employments in sectors X and Y satisfy

$$(1 + \mu)L_X + L_Y = L, \quad (26.20)$$

where L is the endowment of labour in the economy.

Equations (26.17)–(26.20) consist of four unknowns, L_X, L_Y, w_Y and μ, for a given p. A rise in the non-tradable price p raises the production of good Y and hence its labour employment L_Y. Consequently, sector Y's wage rate w_Y increases and the unemployment ratio μ lowers by (26.19). Mathematically, solving (26.17)–(26.20) gives this price-induced employment effect:

$$d\mu/dp = -(1+\mu)Y_L/p[Y_L - (1+\mu)Y_{LL}L_X] < 0. \tag{26.21}$$

To see the welfare implication of tourism, we consider the constrained revenue function: $R(1,p,\mu) = \max\{X(L_X,K) + pY(L_Y,V)\colon (1+\mu)L_X + L_Y = L\}$ under the given endowments of capital K and land V. Using the envelope property, we have $R_\mu = -w_Y L_X$, signifying the cost of unemployment to the economy. The economy is then described as

$$E(1,p,u) = R(1,p,\mu), \tag{26.22}$$

$$E_p(1,p,u) + D_Y(p,\alpha) = R_p(1,p,\mu). \tag{26.23}$$

Differentiating (26.22) and using (26.23), we have the effect of tourism on domestic welfare:

$$E_u(du/d\alpha) = D_Y(dp/d\alpha) - w_Y L_X(d\mu/d\alpha), \tag{26.24}$$

where $d\mu/d\alpha = (d\mu/dp)(dp/d\alpha) < 0$. The last term in (26.24) captures the unemployment distortion in the welfare expression. A boom in tourism creates more jobs, which further enhances the welfare of the economy.

26.2.4. *The Environment*

Due to accelerating degradation of the environment, living quality has become a major concern in the development of sustainable economies. The impact of tourism on the environment therefore cannot be ignored. We examine this issue by considering a by-product, pollution Z, is generated in the production of the manufacturing good X. Since pollution harms consumers, emission taxes s are levied on the producers. Following Copeland (1994), the net revenue function of the economy is thus defined as: $R(1,p,s) = \max\{X + pY - sZ\colon (X,Y,Z) \in \Gamma(L,K,V)\}$, with $R_s = -Z$, being the (negative) level of pollution emissions. Hence, we have: $R_{sp} = -\partial Z/\partial p[= (dZ/dX)(\partial X/\partial p)] > 0$ and $R_{ss} = -\partial Z/\partial s > 0$.

On the demand side of the economy, pollution yields negative utility to domestic consumers and, accordingly, the expenditure function is modified as: $E(1,p,Z,u) = \min\{C_X + pC_Y\colon u = u(C_X,C_Y) - \nu(Z)\}$, where $\nu'(\cdot) > 0$.

It is noted that $E_Z > 0$, the marginal damage of pollution, measures the willingness to pay by domestic residents for reductions in pollution. In addition, $E_{pZ} = 0$ by assuming that pollution and goods consumption are separable in the utility function.

In the presence of production-generated pollution, the equilibrium conditions of the economy can be described as

$$E(1, p, Z, u) = R(1, p, s) + sZ, \tag{26.25}$$

$$E_p(1, p, Z, u) + D_Y(p, \alpha) = R_p(1, p, s), \tag{26.26}$$

$$Z = -R_s(1, p, s), \tag{26.27}$$

where in (26.25), sZ is the emission tax revenue returned to domestic consumers.

Totally differentiating (26.25), the change in domestic welfare can be represented by

$$E_u du = D_Y dp - (E_Z - s)dZ. \tag{26.28}$$

Besides the terms-of-trade effect, the second term of $(E_Z - s)$ in (26.28) measures the degree of pollution distortion in the welfare expression. This distortion can be corrected by taxes on emissions. To derive the first-best rate of emission taxes, we need to solve its impact on domestic welfare. From the differentiations of (26.25)–(26.27), we obtain

$$du/ds = \{(E_Z - s)[R_{ss}(E_{pp} + \partial D_Y/\partial p) - A] + R_{ps}D_Y\}/\Delta_Z, \tag{26.29}$$

where $\Delta_Z = (E_{pp} + \partial D_Y/\partial p - R_{pp}) + (m_Y/p)[D_Y + (E_Z - s)R_{ps}] < 0$ for stability. Note that $A = R_{pp}R_{ss} - R_{ps}^2 > 0$ in (26.29) because the net revenue function is convex in prices p and s. By setting $du/ds = 0$ in (26.29), we obtain the first-best rate of emission taxes, denoted by s^{o}, as

$$s^{\mathrm{o}} = E_Z - D_Y R_{ps}/[A - R_{ss}(E_{pp} + \partial D_Y/\partial p)]. \tag{26.30}$$

Since $R_{ps} > 0$, the optimal emission tax, s^{o}, is smaller than its Pigouvian rate, E_Z, of the direct marginal damage of pollution when tourism presents in the economy, i.e., $D_Y > 0$ in (26.30). That is, emission taxes should not be set too high to benefit the production of good Y too much. Otherwise, the tourism-induced gain from the terms-of-trade improvement will be offset.

We turn next to the effects of tourism. Solving (26.25)–(26.27), the positive effect of tourism on the price of good Y is confirmed for the economy:

$$dp/d\alpha = -(\partial D_Y/\partial \alpha)/\Delta_Z > 0, \tag{26.31}$$

and consequently the higher price of the non-traded good Y lower pollution emissions generated in sector X:

$$dZ/d\alpha = -R_{sp}(dp/d\alpha) < 0. \tag{26.32}$$

Using (26.31) and (26.32), the welfare effect of tourism is expressed as

$$E_u(du/d\alpha) = D_Y(dp/d\alpha) - (E_Z - s)(dZ/d\alpha). \tag{26.33}$$

When emission taxes are set below its first-best rate, s^o, in (26.30), we have $E_Z > s$ according to (26.33). In this case, reductions in pollution emissions enhance the gain in welfare induced by the increase in tourism.

26.3. Long-run Effects of Tourism

This section examines the effects of tourism on capital accumulation and foreign reserves in the long run.

26.3.1. *Capital accumulation*

We consider an economy with capital accumulation. The production functions of the traded and non-traded goods are: $X = X(L_X, K)$ and $Y = Y(L_Y, V)$, where L_i is labour employed in sector i, and K and V are capital and land specific to sector X and Y respectively. All production factors are fully employed. The revenue function is given by: $R(1, p, K) = \max\{X(L_X, K) + pY(L_Y, V)\colon L_X + L_Y = L\}$, where $R_K(= \partial R/\partial K) > 0$, signifying the rate of return to capital, with $R_{pK} < 0$ and $R_{KK} < 0$.

There are domestic residents and foreign tourists in the economy. Domestic residents consume two goods with a quasi-linear utility function: $u = C_X + u(C_Y)$. Accordingly, the expenditure function of them is: $E(1, p, u) = \min\{C_X + pC_Y\colon u = C_X + u(C_Y)\}$, with $E_u = 1$ and $E_{pu} = 0$. That is, the income effect falls completely on the demand for the numeraire good X. Domestic savings are then used for capital accumulation, as follows:

$$\dot{K} = R(1, p, K) - E(1, p, u), \tag{26.34}$$

where a dot over a variable represents its time derivative. Note that in the dynamic model, trade may not be balanced instantaneously.

As for foreign tourists, they only demand the non-traded good, denoted by $D_Y(p, \alpha)$, where α expresses a shift parameter of tourism. The market-clearing condition for good Y is therefore:

$$E_p(1, p, u) + D_Y(p, \alpha) = R_p(1, p, K). \tag{26.35}$$

This equation determines the relative price p of the non-traded good Y.

Domestic residents maximise the present value of their instantaneous utility u,

$$W = \int_0^\infty u e^{-\rho t} dt \tag{26.36}$$

subject to the budget constraint given in (26.34), where W denotes the intertemporal welfare of domestic residents and ρ is the rate of time preference. Letting λ be the shadow price of domestic capital, the necessary condition with respect to u for welfare maximisation is:

$$1 = \lambda E_u, \tag{26.37}$$

and the dynamics of the capital shadow price is:

$$\dot{\lambda} = \lambda[\rho - R_K(1, p, K)]. \tag{26.38}$$

That is, the shadow price of capital depends on the difference between the rates of time preference and capital returns. Nonetheless, under quasi-linear preference, we have $E_u = 1$ and hence $\lambda = 1$ by (26.37). This gives $\dot{\lambda} = 0$ in (26.38) and hence $R_K(1, p, K) = \rho$ for determining the level of capital in the economy.

In steady-state equilibrium, we have $\dot{K} = 0$ in (26.34). We then use (26.34), (26.35) and (26.38) to solve the effect of tourism on the price of good Y:

$$dp/d\alpha = R_{KK}(\partial D_Y/\partial\alpha)/\Delta_K > 0, \tag{26.39}$$

where $\Delta_K = -R_{KK}(E_{pp} + \partial D_Y/\partial p - R_{pp}) < 0$. An increase in tourism raises the non-tradable price p through higher demand for good Y. This reduces the production of good X and hence the demand for capital specific to sector X, as follows:

$$dK/d\alpha = -(R_{pK}/R_{KK})(dp/d\alpha) < 0. \tag{26.40}$$

Using (26.31) and (26.32), we can obtain the effect of tourism on instantaneous utility:

$$du/d\alpha = D_Y(dp/d\alpha) + R_K(dK/d\alpha). \tag{26.41}$$

Thus, in a dynamic model, the reduction of capital led by the tourist boom can mitigate the gain of tourism from the improvement in the terms of trade.[11]

[11]Numerical simulations on the welfare effect of tourism can be found in Chao *et al.* (2006).

26.3.2. *Foreign reserves*

Another aspect of the long-run consideration of tourism is the accumulation of foreign reserves. Suppose foreign tourists demand only the non-traded good only with the amount $D_Y(p, \alpha)$. On the other hand, domestic residents demand for both goods, C_X and C_Y, but face a cash-in-advance constraint in consumption[12]:

$$C_X + pC_Y = H + F, \tag{26.42}$$

where H represents domestic credit and F is foreign exchange. For a given domestic credit, welfare maximisation yields the demand for goods by domestic residents: $C_X = C_X(1, p, F)$ and $C_Y = C_Y(1, p, F)$.

Since the host country exports tourism and imports the traded good X, foreign exchange is accumulated from the trade balance:

$$\dot{F} = pD_y(p, \alpha) - M(1, p, F), \tag{26.43}$$

where the imports of good X is defined as: $M = C_X(1, p, F) - R_1(1, p)$.

Since good Y is non-tradable, its market clearing condition requires

$$C_Y(1, p, F) + D_Y(p, \alpha) = R_p(1, p). \tag{26.44}$$

Consider the steady-state equilibrium, in which we have $\dot{F} = 0$. Solving (26.43) and (26.44), we obtain the positive effect of tourism on the price of good Y as

$$dp/d\alpha = -[\partial C_X/\partial F + p(\partial C_Y/\partial F)](\partial D_Y/\partial \alpha)/\Delta_F > 0. \tag{26.45}$$

where $\Delta_F = (\partial C_Y/\partial p + \partial D_Y/\partial p - R_{pp})(\partial C_X/\partial F) + [D_Y + p(\partial D_Y/\partial p) - \partial M/\partial p](\partial C_Y/\partial F) < 0$ for stability. However, the higher non-tradable good price lowers the tourists' demand for good Y but increase the imports of good X by domestic residents. This price-induced unfavourable effect mitigates the direct gain from tourism. This can be seen from (26.43):

$$dF/d\alpha = -\{D_Y + [p(\partial D_Y/\partial p) - \partial M/\partial p]\}(\partial D_Y/\partial \alpha)/\Delta_F, \tag{26.46}$$

where $\partial D_Y/\partial p < 0$ and $\partial M/\partial p > 0$.

26.4. Conclusions

For the last decade, international tourism has become a fast growing industry in many advanced and emerging economies. Using a unified general-equilibrium framework, this chapter has discussed various short-

[12]See Chao *et al.* (2012) for the cash-in-advance constraint in demand.

and long-run benefits and costs of tourism for the host economies, in addition to the major means of earning foreign exchange. In the short run, an increase in tourism can bring benefits in terms of raising tax revenues, increasing sectoral employment and improving environmental quality. While in the long run, the costs of increased tourism may arise. For instances, a tourism boom can cause the so-called 'Dutch disease' in lowering capital formation of the non-tourism sectors. Moreover, contrary to the conventional belief, an expansion of tourism can reduce foreign reserves of the economy. Therefore, how to balance the short-run benefits versus long-run costs is a concern to policy makers in attracting international tourists to the economy.

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Chapter 27

INBOUND TOURISM AND ECONOMIC GROWTH: A REVIEW OF THEORY AND EMPIRICS*

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Abstract: This chapter examines the existing studies of the relationship between inbound tourism and economic growth. After a brief discussion of general economic growth theory and the reasons why a positive causal relationship may exist between export sectors and economic growth, it then delves into the theoretical basis for an inbound tourism-led growth relationship. Following this, the relatively new empirical literature on the causal relationship between tourism and growth is examined in detail. Both theoretical and empirical evidence to date suggest that there is good reason to believe that inbound tourism promotion can lead to increased economic growth, but the literature is still relatively narrow. Deeper research into the specific mechanisms behind this relationship is needed to inform our understanding of the true growth impacts of export tourism expansion.

Keywords: Causality; economic growth; export-led growth; exports; tourism; tourism-led growth.

27.1. Introduction

It is widely accepted among economists that economic growth is a complex process, which depends on many variables; including human and physical capital, trade, technological change, political conditions and the quality of institutions. Over the past 40 years, the relationship between trade and economic growth has been one of the main topics under consideration in the field of economic development and growth. The export-led growth (ELG) hypothesis postulates that export expansion can perform as an engine of economic growth. This relationship between exports and growth is often attributed

*The views, opinions, findings and conclusions expressed in this chapter are strictly those of the author, and do not necessarily reflect the views of the New Zealand Treasury.

to the possible positive externalities for the domestic economy arising from participation in international trade, such as economies of scale, better allocation of existing resources and stronger competition. More recently, a number of tourism economists have investigated the relationship between inbound tourism and economic growth more directly. Their suggestion that tourism can cause long-run economic growth is known in the literature as the tourism-led growth (TLG) hypothesis. The aim of this chapter is to provide an overview of the current state of the literature regarding the impact of inbound tourism on economic growth. It opens with two sections that examine in detail the theoretical literature on economic growth. The third section highlights some of the key theoretical studies examining the mechanisms by which inbound tourism affects economic growth. The fourth turns to the empirical evidence on ELG hypothesis, followed by a more detailed discussion of the empirical literature on TLG, and then in the final section some concluding remarks are made.

27.2. A General Overview of Economic Growth Theory

The study of economic growth is perhaps the most fundamental pursuit in all macroeconomics, since the achievement of sustained growth is undoubtedly an essential underlying force for improvements in worldwide living standards. Although economic growth in the wider economy is not in itself *sufficient* to universally raise living standards, it does provide the resources necessary to eliminate extreme poverty, increase education, improve health and provide the standard of living which many consider to be a basic human right. In one respect it is difficult for macroeconomics not to contribute to the study of economic growth, but the centrality of economic growth in new economic research has been far from consistent over the years.

Solow (1956) and Swan (1956) are responsible for the neoclassical form of the production function used in many modern economic growth models, although modern growth theory finds its roots in the seminal work of Ramsey (1928), who applied mathematical techniques to the study of consumer optimisation. However, it was not until the 1980s when such authors as Romer (1986) and Lucas (1988) popularised the idea of *endogenous* growth models. In these models the long-run rate of growth is determined without reliance on factors exogenous to the model itself. Although we are not constructing an economic growth model for tourism in this chapter *per se*, the foundations laid by this and subsequent economic growth research provide an important context for this chapter and are worth exploring first.

Since the late 1980s a number of possible determinants of growth have found their place within the framework of various economic growth models. *Capital* and *labour* have long been included as the two fundamental inputs to the production process, comprising the core of the original Solow–Swan model, along with technology. The importance of *human capital* in the production process was highlighted as early as Smith (1937), but it was Alfred Marshall (1920)[1] in his volume on the *Principles of Economics* that prompted widespread acceptance of the view of human capital as a distinct input in the production process. Economists such as Schultz (1961) argued strongly for the inclusion of human capital explicitly when modelling growth, and as such the exclusion of human capital from any comprehensive growth model would now be considered unusual. An example of a neoclassical growth model augmented with human — as well as physical — capital can be found in Mankiw *et al.* (1992). Many models of economic growth were subsequently adapted to account for an open economy, recognising the importance of international trade and the world market in the growth process. We shall discuss the role of exports, and specifically tourism, in more detail later. Of course, there are many other possible determinants of long-run economic growth that have been included in these models. Other factors which are believed to be highly important have proved very difficult to account for explicitly — a key example being *institutional quality*, which brings to the forefront the importance of governance and the institutional environment to the growth process. The significance of institutions has been stressed by economists like Douglass North (1989) and the strong correlation between institutions and economic growth has been emphasised by major global development organisations such as the IMF (2003). However, the inclusion of institutions in time-series economic growth models remains problematic due to the dearth of useful time series metrics around institutional quality.

27.3. The Role of Exports in Economic Growth

It is worth exploring in more detail the ways in which exports are believed to influence economic growth in the long run. Of course, in one sense exports will always contribute to aggregate output since they are one component of it, but it is very plausible that they stimulate growth in aggregate output beyond their own direct contribution. One of the earliest comprehensive accounts of these possible externalities is Emery (1967), who separates the impacts of exports into primary and secondary effects. One thing that is clear

[1]http://www.econlib.org/library/Marshall/marPCover.html.

from this discussion is that there are a variety of strong reasons to believe that exports may have a strong positive relationship on aggregate output.

The first of these is the increased capacity to purchase imported goods that export earnings provide (often known as a loosening of the foreign exchange constraint). In this sense, exports allow a country to make the most of the international division of labour to purchase imported goods using a lower input of labour and capital than they would otherwise be able to — and in some cases even purchase goods which are not available domestically. The impact is even more pronounced where the imports are capital goods that directly impact on domestic production, and Krueger (1998) suggests that growth in developing countries may even be contingent upon greater access to these goods.[2] Secondly, productivity increases as a rise in exports allow the economy to specialise in sectors where it enjoys a comparative advantage and trade for other goods it requires. Thirdly, increased exports effectively enlarge the market in which domestic firms operate, allowing them to take advantage of economies of scale. Again, Krueger proposes that the benefits of access to a larger market can be more pronounced in developing countries because of significantly lower domestic incomes. Fourthly — relating to trade in general — increased exposure to foreign competition breeds efficiency in domestic firms as they strive to compete in world markets. A fifth direct effect, which Emery excludes but can be found in Balassa (1977), is a contribution to increased employment in countries with surplus labour. In themselves, these direct benefits may be significant.

Emery also suggests that the less obvious *secondary* benefits are substantial. The first of these is an increased investment in export industries as well as the ancillary and supporting industries that are closely associated with them. This investment may be domestic or foreign, the latter being more likely with the presence of large multinational firms. The second is increased consumption due to what Emery terms the *demonstration effect*. Through increased trade, consumers are exposed to a world market with a greater variety (and possibly quality) of goods, which encourages them to consume more and consequently stimulates demand. The final less direct effect is that as the export sector expands it encourages a flow of technological and market innovations, which eventually improve productivity and efficiency. This final notion is not given much attention in Emery's study, but was subsequently adopted in the literature by economists such as Romer. Romer

[2]This argument is based in the two-gap model (Chenery and Bruno, 1962; McKinnon, 1964; Chenery and Strout, 1966; Bacha, 1990).

(1993) coined the term *idea gaps* to describe the difference in technological knowledge between the developed and developing countries and emphasised that, through trade, knowledge spillovers can facilitate significant economic growth. Overall, Balassa (1977) suggests that some of these effects — such as increased employment — will have a one-off impact on output, while others — such as technological improvements — can have an ongoing impact. So the literature provides a strong theoretical basis for the export-led growth hypothesis.

However, it is widely believed that there is a reciprocal relationship whereby output growth also causes export growth. Bhagwati (1988) was quick to point out that unless economic growth leads to a reduction in the propensity to trade, economic growth from other factors will naturally lead to export growth in line with the growth in output. Giles and Williams (2000a, 2000b) also note that economic growth may lead to export growth through improvements in skills and technology and the export-inclined comparative advantage this provides the economy. This notion has become known as the growth-led exports (GLE) hypothesis.

27.4. The Role of Tourism Exports in Economic Growth

Tourism has been considered by many countries around the world as an alternative to the export of traded goods. Its contribution to a country's economy is often assessed by its positive impacts on foreign exchange earnings, employment and income, that stimulate the level of economic activity in the host-country. While the short-term economic benefits produced by tourism are well-documented in the economics literature, there are very few analytical growth models which include tourism as a sector and examine the impacts of changes in inbound tourism on the long-run economic growth of the host-country. As we will discuss below, most of the studies on the relationship between tourism exports and economic growth are empirical, rather than theoretical. Exceptions do exist, however, and among them are Lanza and Pigliaru (1994); Hazari and Sgro (1995); Hazari *et al.* (2003); Nowak *et al.* (2007); Valente (2008); Ivarez-Albelo and Hernandez-Martin (2009) and Schubert *et al.* (2011). Most of these theoretical contributions have been developed since the mid-1990s to highlight the importance of terms-of-trade effects on the economic growth of tourism based economies.

Hazari and Sgro (1995), for instance, show the benefits of tourism in a dynamic model in which the long-run economic growth of the host economy is driven by the expansion of tourism, captured by an increase in the

consumption of non-traded goods and services by tourists. These benefits arise because tourism can substitute for domestic saving by acting as a time-saving device for the domestic population. Since foreign tourists must visit the host country to purchase and consume tourist goods and services — such as scenery, heritage and culture, climate, restaurant meals and shopping opportunities — these products become partially exportable due to the international mobility of consumers. Therefore, tourists' consumption of non-traded goods and services has an impact on their relative price which amounts to a terms-of-trade movement.[3]

By using a simple endogenous growth framework based on Lucas' two sector model (1988), Lanza and Pigliaru (1994) examined the relationship between tourism and economic growth in a two-country setting. Their results showed that a small open economy completely specialised in a 'less progressive sector' like tourism (as defined by the rate at which human capital is accumulated through the learning-by-doing process) could experience faster growth of real income than a country specialised in a 'more progressive sector' like manufacturing. This will happen only if the change in the terms-of-trade between tourism and manufacturing goods more than balances the technological gap of the tourism sector. In other words, the country specialised in tourism has a higher economic growth rate than the manufacturing economy provided that its terms-of-trade permanently improves to offset the difference in sectoral productivity growth.[4] This condition holds if the elasticity of substitution between both sectors is low enough. In this framework, the sign of the long-run growth differential is then determined by the preference-elasticity of substitution between both traded goods. For this to happen, the two goods must be perceived as complements.

Valente (2008) tackled the dynamics of terms-of-trade from the perspective of 'relative demand effects'. His analytical framework is slightly different from Lanza and Pigliaru's model, which is based on 'structural gaps view'. The author puts forward two models of specialised trade where at least

[3]The terms-of-trade effect of tourism has been largely discussed in the tourism and international trade literatures to examine the impact of increased tourism on resident welfare in static frameworks. Most of these studies in this field support Copeland's view (1991) that the main mechanism by which an inbound tourism boom changes national welfare is through a variation in the relative price of non-trade goods and services that foreign tourists consume in the host destination country.

[4]Their model does not assume either physical capital accumulation or factor allocation within country.

one country displays transitional dynamics. In this situation terms-of-trade movements are the result of dynamic changes in the growth gap between consumption expenditures in both countries. Relative price fluctuations are then closely related to individual inter-temporal saving choices and dynamic increases in the relative foreign demand for tourism services. Both models show that during transition to the steady state terms-of-trade effects always dominate, leading to a positive growth differential in favour of tourism specialised economies despite a persisting technological gap vis-à-vis developed economies.

More recently, Schubert *et al.* (2011) provide theoretical and empirical evidence for the impacts of an increase in foreign income on inbound tourism demand and the economic growth of a small economy that is specialised in the production of tourism products by means of an AK technology.[5] In their study, the authors show that an increase in the growth rate of foreign income initiates a tourism boom in the host economy that leads to a higher capital accumulation rate, increased tourism and an improvement of the terms-of-trade. Their empirical analysis for the case of Antigua and Barbuda from 1970–2008 also supports their theoretical findings, as it supports the assumption of a positive long-run relationship linking real GDP per capita in the USA, real GDP per capita in Antigua and Barbuda and the relative price between the two countries.

Another set of theoretical studies rooted in the neoclassical growth theory has looked at the mechanisms linking tourism exports, imports of capital goods and economic growth (Hazari *et al.* (2003); Nowak *et al.* (2007)). The main argument behind the theoretical findings of these authors is based on the Export Capital Good Imports Growth hypothesis (or EKIG hypothesis). According to this hypothesis, if a country suffers from a foreign exchange constraint then any export expansion alleviates this constraint and allows more imports of capital and intermediate goods, which leads to higher capital accumulation and thus to higher economic growth. Authors like Krueger (1998) have suggested that this may be particularly important for developing countries, where the domestic capacity to produce such capital and intermediate goods may not exist.

[5]The main characteristic of AK endogenous-growth models is the absence of diminishing returns to capital. Instead of the diminishing returns to capital implied by the usual Cobb–Douglas production function, the AK model uses a linear model where output in a linear function of capital. Unfortunately, Schubert *et al.* (2011) suggest in their paper an AK technology model for a small economy that relies on tourism without providing a realistic economic justification of their choice.

Hazari *et al.* (2003) and Nowak *et al.*'s (2007) findings highlighted a new mechanism for the international transmission of economic growth from a foreign country (a tourism services importer) to a host economy (a tourism services exporter), through trade and terms-of-trade movements without any technological progress, R&D activity or accumulation of human capital. Their theoretical investigation demonstrates how an economy specialised in tourism can sustain growth if its terms-of-trade improve continuously over time and inbound tourism receipts are used to import capital goods. The necessary conditions to reach long-run economic growth are that the possession of some monopoly power in the trade of tourism products is in the host economy and that tourism demand grows fast enough. The authors also demonstrate that the more differentiated tourism services are, the faster the host country grows. Therefore, an important policy recommendation for a host destination is to increase the degree of differentiation of its tourism products.

In another theoretical study, Ivarez-Albelo and Hernandez-Martin (2009) obtain similar results. They find that the luxury good nature of tourism products amplifies the growth differential between a rich country (the tourism services importer) and a smaller, poorer economy (the tourism services exporter). The reason lies in the fact that tourism imports of the rich economy increase much faster than its income. This improves the terms-of-trade, and hence the growth rate of the poor economy. Furthermore, since the level of investment in this country is determined by its tourism receipts, this increases the growth of capital per capita.

It is worth noting that the above theoretical studies on tourism and economic growth have some limitations. Firstly, the results obtained in the above papers are suitable for tourism-dependent countries that rely heavily on tourism exports, but we cannot generalise the conclusions to countries that have more diversified economies. Secondly, certain authors assume from the outset that tourism can lead to endogenous growth without actually exploring the economic mechanisms that cause this. This assumption needs to be shown in a formal model, rather than assuming that tourism causes economic growth through the same channels as other economic sectors, such as manufacturing. The method by which tourism may impact economic growth is an essential question that tourism economists should explore from the outset. It is too easy to assume that a sector is a source of economic growth just to allow for an examination of the transitional dynamics of the economy. A study of the transitional adjustment effects is meaningless if the basic mechanisms that define the steady-state equilibrium are not explicit and pertinent. Thirdly, these models do not take into consideration some

of the externalities associated with tourism growth, such as environmental impacts. To overcome this issue, other authors such as Cerina (2007); León *et al.* (2007); Gómez *et al.* (2008); Lozano *et al.* (2008) have used dynamic general equilibrium models to examine the relationship between tourism and environmental variables in a dynamic framework following the environmental-economic growth literature. Finally, the conditional relationships between tourism and economic growth need to be further investigated by examining how institutions can influence tourism development and economic growth.

27.5. Empirical Export-led Growth Literature

We have discussed the theoretical reasons why exports — and tourism more specifically — may encourage economic growth. Now we move on to look at the empirical literature which has tested the validity of this claim. The literature is expansive — literally hundreds of studies have tested the ELG hypothesis across different countries and time periods, using various data transformations, disaggregations and methodologies. Only a concise overview is possible here, but after a brief background discussion we will look at some of the specific studies of tourism and economic growth in more detail.

The earliest empirical literature to explicitly test the relationship between exports and output used cross-sectional data and generally examined rank correlation coefficients. It soon moved on to simple cross-sectional regressions, where export and output data were included for a multitude of countries. The results of these early studies found overwhelming evidence in support of the ELG hypothesis, even after various other factors were added as explanatory variables, such as capital formation and the size of the labour force. There was a common misconception that strong evidence for statistical association between the variables could be interpreted as evidence for a *causal* relationship, even though this could not be determined using such cross-sectional methods. From the early 1970s, the empirical literature began to appreciate the nature of time-series data in allowing for an examination of *causality*, rather than just association. In the late 1960s, Granger (1969) introduced a very simple way to test for a notion of causality in time series data, by suggesting that because *cause* must necessarily come before *effect*, predictability and causality may be very closely aligned. Granger posited that if prior values of a variable could help predict the current value of a second variable, then this predictability could be interpreted as evidence of a causal relationship stemming from the first variable. While there are obvious limitations to this approach — foremost among them that although

causality implies predictability, the reverse is not always true — Granger's approach provided a way to move beyond testing for statistical association and into testing for causality in a very tractable way. The ELG literature began to make use of the Granger-causality methods more widely, and the focus quickly shifted from cross-sectional to time-series studies. Perhaps spurred on by the successful export-led development strategies of a number of East-Asian economies, the 80s and 90s saw research on export-led growth begin to fill journals. Unlike their cross-country predecessors, these studies struck contrasting results — sometimes finding evidence for ELG, but just as often finding evidence for GLE, bi-directional causality or no causality at all.

Much of the literature was based on incorrect conclusions, however, as non-stationary characteristics in the data series were often ignored. Nelson and Plosser (1982) — among others — have demonstrated that the presence of non-stationary variables (commonly integrated of order 1, which is known as a *unit root*) in a time-series regression context leads to non-standard asymptotic distributions of the resulting test statistics and means that normal hypothesis tests are rendered invalid. In order to test whether data series contained such unit roots, Dickey and Fuller (1979) suggested the use of a now-popular pretesting method that became known as the augmented Dickey–Fuller (ADF) test. In the presence of unit roots, data series could then be converted to stationary series by means of first-differencing, which led to the use of vector-autoregression-with-differencing (VARD) models to test the relationship between exports and growth. Engle and Granger (1987) subsequently argued that in situations where two non-stationary variables exhibit a long-run — cointegrating — relationship, the use of VARD models is also inappropriate. They provided a way to test for causality in this case, by explicitly incorporating the long-run relationship in what became known as the vector error-correction model (VECM). Shortly after, Toda and Yamamoto (1995) and Dolado and Lütkepohl (1996) developed another technique to allow for non-stationarity and cointegration. They showed that augmenting a standard VAR of true order p with q additional lags — where q is the highest order of integration among the data series — and estimating a VAR of order $p + q$ restores the standard asymptotic distributions of the test statistics and allows for normal testing. This latter approach is much simpler, but comes at the cost of efficiency and reduces the power of such tests relative to the VECM.[6] The majority of modern ELG studies make use

[6]Studies have shown that in larger systems (where P, the order of the VAR, is higher) this loss of efficiency is relatively small. See Giles and Williams (2000a, pp. 276–277).

of one or the other of these two approaches for testing the Granger-causality. Although the Augmented-VAR approach is not, the VECM approach is also widely applied to empirical TLG studies, and the use of panel models is also very common. Panel models — which examine a number of countries across a range of years — have the advantage of being able to account for country-specific effects that may be a cause for bias in time-series regressions. The problem with panel models is that in the past they have not taken account of stationarity issues in the data and have omitted any explicit tests for causality. However, a number of recent studies have overcome these issues through the application of newer panel unit root testing and panel cointegration approaches. This allows one to make use of the advantages of time-series studies (namely cointegration testing and causality analysis) in a wider panel data context. We will look at studies which make use of this approach shortly.

When reading the literature on ELG and TLG, it is important to remember that the techniques used to test for causality — including the techniques described above — tend to be very sensitive to the assumptions that are required in the testing process. The wide variety of outcomes in the literature may ultimately be as reflective of the different assumptions made in the testing process as they are of the underlying relationships themselves. Practitioners are required to make decisions around the form of the variables: Which measure to use for tourism; whether to include the data in aggregate or per capita terms; or whether to include the variables in linear or log-linear form (which assumes a non-linear underlying relationship). Choices must also be made around the time period to cover and whether to search for an annual, quarterly or monthly relationship, although these choices are usually constrained by the availability of relevant data. The more frequent series also typically require choices around seasonal adjustment — a concern that is particularly important in the case of tourism exports, although infrequently considered. Including other variables alongside output and tourism (or another export sector) may enhance the accuracy of the results but — as Lütkepohl (1982) argued — is also likely to have an impact on the final causality results. Methods used to test for the order of integration may vary, although the ADF test is certainly the most common. Finally, most models require a choice around the appropriate lag length to include — which makes important assertions about the likely relationship between the variables. In some studies this is chosen arbitrarily or based on theoretical considerations, but in many cases a formal lag selection method — such as the Schwartz information criterion (SIC) or Akaike information criterion (AIC) — is employed. The combination of a wide range of

overarching approaches and the various assumptions that have to be taken in each approach leads to a hugely varied array of testing methods that may be employed. There is little consensus in the literature as to the best approach to take when testing for the relationship between tourism and economic growth, so the literature contains much diversity. We will look at some of these specific studies on tourism and economic growth in more detail now.

27.6. Empirical Studies of the Tourism-led Growth Hypothesis

Studies on the relationship between tourism and economic growth do not date back anywhere near as far as those for exports more generally — in fact the earliest such study was not published until 2002. Balaguer and Cantavella-Jordá (2002) built on previous assertions of the possible relationship between tourism and economic growth by applying then common econometric techniques to quarterly data for Spain from 1971 to 1997. Although they do not test explicitly for causality, the authors accept evidence of a significant cointegrating relationship as confirmation that tourism contributes to economic growth in the long-run. The authors include the key variables in natural-logged form, which is characteristic of the majority of the studies examined below.

Since 2002 a large number of studies of the TLG hypothesis have been conducted. These adopt a wide array of approaches — including all of the common methods from the ELG studies — which provides us with a fairly robust picture of the overall relationship between tourism and output growth. These studies cover a wide range of countries (both developed and developing), over a number of years, and include various different proxies for tourism alongside other variables. Real international tourism receipts is the most widely used tourism proxy, followed by international tourist arrivals per capita, but measures such as international tourism receipts as a percentage of GDP and as a percentage of exports are also employed. Existing studies can be coherently separated into those which examine the relationship between tourism and output for one or two distinct countries — making use of time series models — and those which apply a panel approach to a wide array of countries. Each of these approaches has merit, so we will look at them in turn.

27.6.1. *Single-country studies*

Possibly due to the ease with which data for single countries can be obtained (compared to panel data), and the specific relevance of the results to policy makers, the majority of studies examine just one or two countries. The

augmented-VAR model common to ELG studies has been applied in the TLG context, but almost all such studies rely instead on the use of Granger-causality tests within a VECM framework. Many studies follow a similar approach to that of Belloumi (2010), who examines the relationship between tourism and economic growth in Tunisia using annual data from 1970–2007. In this study tourism is proxied by real international tourism receipts, which is included alongside real GDP and the real effective exchange rate (a proxy for international competitiveness) in a VECM. Testing for causality using the Granger approach, Belloumi finds evidence that tourism has a positive impact on GDP but that GDP does not appear to Granger-cause tourism. This is reinforced by evidence of a long-run relationship, as evidenced by a significant cointegrating relationship. Interestingly, a number of studies which follow a very similar methodology come to the same TLG conclusions. These include Kreishan (2011) for Jordan, Shubert *et al.* (2011) for Antigua and Barbuda, Husein and Kara (2011) for Turkey, Brida *et al.* (2008) for Colombia and Ghartey (2010) for Jamaica, which are all supportive of the TLG hypothesis. The last study differs in that rather than relying solely on tourism receipts, the author conducts the same tests for total tourist arrivals as an alternative proxy for tourism. This alternative measure of tourism is also used in earlier single-country studies such as De la Cruz *et al.* (2008) for Mexico and Kim *et al.* (2006) for Taiwan. The latter also differs from the normal approach in that it makes use of quarterly — rather than annual — data. Although omitting any correction for possible seasonality (which, surprisingly, does not seem to appear in the data series), the authors find a bi-directional causal relationship between tourist arrivals and GDP. A number of other VECM studies also make use of quarterly data, with varied results. Brida *et al.* (2010) examine the case of Uruguay from 1987 to 2006 and find evidence in support of TLG. Interestingly, they examine only the expenditure of *Argentinean* tourists to Uruguay — an approach which has not been taken elsewhere. Oh (2005) applies quarterly data to Korea from 1975 to 2001 in a simple bivariate model, and finds evidence that causality runs only from GDP to tourism. Applying even higher frequency data, Lean and Tang (2010) examine monthly series for Malaysia over 1989–2009 and find a bi-directional causal relationship between tourism and economic growth.

As well as proxies for tourism and GDP, and the fairly common inclusion of a measure of the real effective exchange rate, a number of time-series studies include additional variables alongside these in an error-correction framework. Akinboade and Braimoh (2010), for example, include total exports in

a study of South Africa over 1980–2005 and still find significant evidence in favour of TLG. Durbarry (2004) also looks at the impact of tourism as just one sector of exports in Mauritius, finding that tourism contributed far more to growth than other key export sectors. Cortés-Jiménez and Pulina (2010) take more of a typical growth theory approach and include both physical and human capital in their framework. Although not a panel approach, they study both Spain and Italy alongside each other, applying a common framework to each country and allowing for an easy comparison. They find evidence for TLG in the Italian case, but bi-directional causality in the Spanish one. Chen and Chiou-Wei (2009) also compare two countries — Taiwan and South Korea — in a more complex EGARCH-M model, which allows for an examination of the volatility of the included measures. Bi-directional causality is found for South Korea, but TLG appears to hold for Taiwan. Finally, not all of these time-series studies focus on cointegration and the associated VECM approach. In their aforementioned study, Lean and Tang (2010) employ the augmented-VAR approach, exploiting the high frequency of their monthly data series in order to examine the evidence for causal links over time using a rolling subsample of the entire period (examining periods of 100, 120 and 150 months). They find evidence that the bi-directional relationship between tourism and economic growth is consistent over time.

Despite the wide range of approaches adopted in the time-series TLG studies, overall there is reasonably strong evidence in favour of tourism-led growth, although there is also some evidence that the relationship may actually be mutually reinforcing. Some studies, such as Untong *et al.* (2011) and Katircioglu (2009) even find no causality from tourism to economic growth (in Thailand and Turkey, respectively).

27.6.2. *Studies of multiple countries*

Many practitioners, however, have not been content to explore the relationship between tourism and growth for just one or two countries in isolation. In an effort to explore the more general relationship across a number of countries — and even across different groups of nations — many studies have turned instead to the use of cross-sectional and panel data models.

One of the most frequently cited cross-sectional studies in this area is Brau *et al.* (2007), which examines 143 countries using data from 1980 to 2003. Using simple data analysis, the authors demonstrate that the growth rate in small, tourism-focussed economies was far higher on average over

the period than any other set of countries. Controlling for a wide variety of factors, they then find that in a cross-sectional regression context a dummy variable indicating that a country is small and tourism-centric remains statistically significant across different model specifications. They take this as evidence that tourism specialisation is an independent determinant of growth. Not long after, Brau *et al.* (2010) took this one step further by applying a similar data set to a panel data approach including over 200 countries. The authors controlled for a variety of country-specific factors — notably including a measure of institutional quality based on the World Bank's *Worldwide Governance Indicators*. This analysis finds a positive and significant correlation between tourism receipts and GDP over the period. Other papers have applied such panel techniques to a similarly large number of countries, finding similarly strong correlation between measures of tourism and economic growth after accounting for a variety of factors. Sequeria and Nunes (2008), for example, examine a large panel of countries from 1980 to 2002, using three different proxies for tourism: tourist arrivals per capita, tourism receipts as a percentage of exports and tourism receipts as a percentage of GDP. Investment, government spending, education, life expectancy, the black market premium, exports, imports, inflation and a measure of institutional quality are also taken into account explicitly in the models, and overall the authors find that tourism is positively related to economic growth (particularly in smaller countries). Others have used panel data models to examine more specific, more homogenous groups of countries. Fayissa *et al.* (2008) apply this panel approach to 42 African countries from 1995 to 2004, finding that a 10% increase in tourist receipts is associated with a 0.4% increase in GDP per capita across the continent. Proença and Soukiazis (2008) look even more closely at the PIGS group of countries — Portugal, Italy, Greece and Spain — from 1994–2004, finding evidence for TLG in a model which looks at the conditional convergence of the four countries. Interestingly, their results are reasonably similar to those in Fayissa *et al.* (2008) — which finds that a 10% increase in tourist receipts is associated with 0.26% higher per capita incomes. Tiwari (2011) undertakes a similar analysis for India, China, Pakistan and Russia from 1995–2008, including a large number of other variables and finding significant correlation between tourism and economic growth. Not all such panel studies have taken a TLG-biased approach, however. Eugenio-Martin *et al.* (2008) examine the relationship between tourism originating from just seven OECD countries to 208 different destinations (countries and independent states), exploring evidence that economic development may lead to increased

tourism in a destination. They find that high levels of health, education and infrastructure are highly correlated with higher levels of tourism, suggesting that economic growth may also lead to tourism growth.

Although these simple panel models may provide some insights into the potential contribution of tourism in economic growth, many of these studies suffer from the shortcomings mentioned earlier: they fail to take into account stationarity issues (which may lead to spurious results), and do not include any explicit tests for causal relationships between the variables. Despite this omission, many authors have still suggested that their results imply causality, not just correlation. More recently, the literature has begun to make use of the advanced panel data models outlined earlier. These combine the key attributes of both sets of studies investigated above: the stationarity and causality tests of the single-country time series studies as well as the country-specific effects of the panel data models. Lee and Chang (2008), for example, examine a heterogeneous panel of 55 countries over 1990–2002, including per capita tourist receipts and tourist arrivals alongside GDP per capita and the real effective exchange rate. Panel unit root tests confirm that the four series all contain a (panel) unit root, and subsequent panel cointegration tests find evidence for significant long-run cointegrating relationships between the variables. Granger causality tests in the corresponding panel error correction model find that there is a positive impact of tourism on economic growth, and this impact generally appears to be stronger in less developed countries. Dritsakis (2011) applies a very similar approach to seven Mediterranean countries from 1980–2007, finding evidence in favour of the TLG hypothesis. Holzner (2011) uses this technique to examine for evidence of tourism-specific Dutch disease in 134 countries from 1970–2007, finding no long-run relationship between the variables in the panel model, nor any evidence that tourism development leads to a reduction in domestic competitiveness. The author does find evidence that higher tourism specialisation has a positive impact on aggregate output. Limiting the focus to Africa, Seetanah *et al.* (2011) examine 40 countries across the 1990–2006 period using two different measures of tourism — total tourist arrivals and international tourism receipts — and find that there is evidence for bi-directional causality between tourism and economic growth in the African continent. Finally, Santana-Gallego *et al.* (2011) use a dynamic panel model approach to look at the relationship between tourist arrivals and *trade*, rather than GDP. They find that there is a bi-directional causal relationship between the two variables in the long-run, suggesting that tourist activity can stimulate international trade and also

that the presence of domestic business opportunities can lead to greater tourism.

Other studies have applied approaches similar to either the cross-country or panel model methodologies, but tested for slightly different phenomena. One particular idea worth noting is the TKIG hypothesis, which suggests that greater tourism exports may lead to higher domestic growth through an impact on the country's capacity to purchase imports of capital goods. Nowak *et al.* (2007) first test for this in the case of Spain, applying the VECM and Granger-causality methods to data from 1960–2003. Interestingly, they find evidence that international tourist receipts cause both capital goods imports and GDP and that capital goods imports also cause GDP, which is evidence for both the TKIG and TLG hypotheses. In contrast, Cortés-Jiménez *et al.* (2011) take a very similar approach for Tunisia from 1975–2007 but find no evidence for TLG and only TKIG in the short-run, indicating that more work still needs to be done to determine whether this (quite plausible) hypothesis actually holds.

Overall, the flavour of these studies is very much inclined towards supporting the tourism-led growth hypothesis. The wide variety of approaches that are applied to this study, as well as the varying importance of tourism in each economy, would lead us to expect that the results of such tests may be widely varied. However, unlike the more general literature on the export-led growth hypothesis — which finds comparable evidence for export-led growth, growth-led exports, bi-directional causality and no causality — this literature typically suggests that tourism is a major determinant of economic growth.

27.7. Conclusions

In this chapter we have reviewed ongoing efforts — both theoretical and empirical — to better understand the relationship between tourism and economic growth. We started by introducing the theoretical literature on economic growth, and then highlighted some of the key results of models in which the growth of inbound tourism has a favourable impact on the long-run economic growth. Our review of theoretical tourism growth models shows that the existing literature has made relatively few contributions to our understanding of the positive impacts of tourism on economic growth. In this new literature, the terms-of-trade effect stands out as a key mechanism by which tourism can cause long-run economic growth in host countries. This suggests that further theoretical foundations may be necessary to explain this connection between tourism and economic growth.

Empirically, the notion of tourism-led growth finds strong support. Although a recently new offshoot of the more general export-led growth empirical literature, the quantitative study of TLG has flourished, applying a wide range of methodologies to very varied datasets and covering a number of countries and regions. Not *all* the evidence comes to the same conclusion, but it certainly favours the notion that tourism has a strong, positive impact on economic growth. This seems to hold for developed and developing countries alike, although there is some indication that the effect may be particularly strong for less developed nations. There is also some suggestion that the impact of tourism on growth may be complemented and reinforced by a reciprocal impact leading from economic growth to tourism.

The application of more advanced panel cointegration techniques is still in its infancy, but the growth of this particular area of empirics may well shed further light on the relationship between tourism and economic growth. Further progress in our understanding of this relationship can only come from a tighter connection between theory and data. This question will remain particularly important as governments continue to explore the option of tourism promotion as a possible lever of economic growth. Future research into more specific aspects of the relationship between tourism and growth — such as those which explore the importance of capital goods imports — may better inform decisions around exactly what kind of tourism promotion may be most beneficial. Certainly the results to date suggest that this remains a promising area of future research.

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PART VIII

STUDIES OF THE CONTRIBUTION OF TOURISM TO ECONOMIC DEVELOPMENT

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Chapter 28

ECONOMIC IMPACTS OF TOURISM, PARTICULARLY ITS POTENTIAL CONTRIBUTION TO ECONOMIC DEVELOPMENT

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Abstract: Economic debate on tourism development represents only a partial development view, yet in our globalised market economy, it is still integral to any development debate. There is a consensus among tourism economists that, tourism provides positive economic developmental benefits, which are discussed at length in the literature (Bull, 1995; Gartner, 1996; Sharpley and Telfer, 2002; Tisdell, 2005; Tribe, 2005). There is enough evidence that tourism has a potential to influence the economic development of the host region or country and reduce the economic gap between developed and less developed areas; that it is a valuable source of foreign currency earnings that less developed countries need for economic development; that it generates employment opportunities; and last, but not least, it creates earnings through the exploitation of the inherited natural and cultural attractions of the host country. Importantly, however, tourism impacts are not only unidirectional, they might be positive or negative; they are very complex, temporary and might be location and time specific and dependent on many factors. Thus it is also unrealistic to expect tourism to be a magic wand that can solve all the problems of underdevelopment. Therefore, this chapter reviews briefly the main economic developmental impacts of tourism but focuses principally on fundamental issues and discusses many factors and situations that may enhance or reduce the tourism developmental potential of a given regional or national economy.

Keywords: Capital coefficient; developed countries; economic growth; less developed countries; tourism development; tourism development critics; tourism economic impacts.

28.1. Introduction[1]

Today there is a strong call for a holistic approach to development. Debate, that is centred around the quality of life and human welfare, takes into account numerous economic and non-economic related developmental issues. It has been recognised that a higher income is necessary, yet development also refers to... 'better education, higher standards of health and nutrition, less poverty, a cleaner environment, more equality and opportunities, greater individual freedom, and richer cultural life' (World Bank, 1991, p. 4). Although the world has become more aware of how economic growth in terms of GDP growth can lead to a more polluted world, lower freedom and more inequality and thus reduce the quality of life and human welfare (Tisdell, 2005), welfare economics can provide a useful tool to assist tourism development policy.

Over the past six decades, tourism has been continuously expanding and has become one of the largest and fastest growing economic sectors in the world (UNWTO, 2011b). Nowadays many, if not all, countries promote themselves as tourist destinations and try to gain their share of the global tourism market, not to mention the many developing countries and regions that see tourism development as their development chance; even oil-rich countries, such as United Arab Emirates or major developed countries like Japan, have been expanding their tourism sectors and trying to attract more visitors. Indeed, it is tourism's bright future perspective in terms of expected growth and its potential contribution to development in terms of socio-economic and environmental progress that makes everyone want a piece of this global tourism cake. Currently tourism financial flows generated by inbound tourism generates US$3 billion a day with the number of international travellers expected to reach 1.6 billion by the year 2020 (UNWTO, 2011b).

Economic debate on tourism development represents only a partial development view, yet in our globalised economy where allocation of scarce resources is done through market exchange mechanisms, it is still integral to any development debate. There is a consensus among tourism economists that, tourism provides positive economic developmental benefits, which are discussed at length in the literature (Bull, 1995; Gartner, 1996; Sharpley and

[1]The intention in this chapter is not to prove a particular hypothesis but rather to outline different views that have been expressed in the literature about the relationship between tourism and economic development. The figures used are illustrative rather than definitive.

Telfer, 2002; Tisdell, 2005; Tribe, 2005). Tourism is an integral sector of the national economy that may have many effects at a national level. Undoubtedly, it influences the economic development of the host region or country and it is argued that it reduces the economic gap between developed and less developed areas; it is a valuable source of foreign currency earnings; it generates employment opportunities, new investment, new sources of income and governmental revenues; and last, but not least, it creates earnings through the exploitation of the inherited natural and cultural attractions of the host country. Importantly, however, tourism impacts are not only unidirectional, they are very complex, temporary and might be location and time specific and dependent on many factors. Thus it is also unrealistic to expect that tourism is a magic wand that can solve all the problems of underdevelopment and reduce the economic gaps. Therefore, this chapter reviews briefly the main economic impacts of tourism but focuses principally on fundamental issues and discusses many factors and situations that may enhance or reduce the tourism developmental potential for a given regional or national economy.

28.2. Tourism and Development

Tourism and economic impacts have been studied since the late 1960s, and in the 1980s and 90s, tourism became popular for its potential to be a vehicle for economic development, as addressed by several institutions and authors (Bryden, 1973; Dieke, 1989; Mathieson and Wall, 1992; Peters, 1969; Sharpley, 2002; Vanhove, 2011; WTO, 1980). Yet, this development debate distinguishes between developed and developing countries and regions, in terms of general economic as well as tourism development.

First, in terms of general development debate, the world is divided into *developed* and *developing countries*. The term developed country is used to describe countries that have achieved high level according to some criteria. These criteria are predominantly economic development related, such as income per capita and industrialisation; countries with high gross domestic product (GDP) per capita or countries with dominant tertiary and quaternary sectors would thus be described as developed countries. Then, in line with broader (not only economic) understanding of development, attempts have been made to construct more suitable development measure (Tisdell, 2005). Newer welfare criteria combine economic measures such as GDP or national income (NI), with social and political development measures, such as indices for life expectancy, health, education, politics, efficiency, security, participation and equity (UNDP, 2011) or opportunities and freedom (World

Bank, 1991). However, as a result of still necessary presence of economic indicators in addition to the correlation between economic and socio-political welfare indicators, many similarities exist when determining the status of developed countries by whichever measurement set is used. For example, IMF's 2011 economic based classification of developed (*advanced) economies* only slightly differ from the UN *very high human development country* list, which considers also indicators for life expectancy and education (IMF, 2011; UNDP, 2011). In addition to this, a sustainability development debate foresees indicators, that measure how sustainable the development is, taking into account the economic, environmental, socio-cultural and political dimension of development (UNWTO, 2004).

Second, in terms of tourism development, tourism literature does not give a clear definition of developed and developing tourism countries. It is often assumed that, developing tourism countries belong to the Majority World, where the majority of the world's population live in poverty; thus, tourism development debate often connects to tourism development in the developing world, or regions that seek economic and social revival (Burns and Novelli, 2008; Harrison, 2001).

UNWTO uses the term top or major tourism receiving country or *major destination* for countries that rank high on the list of visited countries. In this case, the criterion is visitation, measured by international tourist arrivals (UNWTO, 2011c). Another criterion, used for a division of countries is tourism earnings; countries that earn the most from international tourism are described as *major tourism earners*. There might be many discrepancies if both lists are compared because top destinations are not necessarily also top tourism earners, as tourism consumption per day and the average length of stay may vary strongly among different countries mainly according to their level of development and the intensity of interactive effects among country's industries caused by increased tourism spending. Furthermore, another grouping is derived from the fact that some nations travel more than others. These form a class of developed outgoing tourism countries. As outgoing tourism is measured by tourism spending abroad, these countries are also called *major tourism spenders*.

Both classifications are brought together in Table 28.1. It shows that five of the major advanced economies (G7) are also major players in tourism, as they are among top tourism destinations, earners and spenders, the remaining two G7 countries Japan and Canada are on the top tourism spenders list only (UNWTO, 2011d). 11 out of 32 advanced economies are on at least one of the top tourism countries list. Table 28.1 does not necessarily explain dependency between country development and tourism, as ranks are

Table 28.1. Top 10 tourism nations globally — advanced and emerging economies, 2009.

Countries	Rank of major tourism destinations (Top 10 in int. tour. arrivals)	Rank of major tourism earners (Top 10 in int. tour. receipts)	Rank of major tourism spenders (Top 10 in int. tour. expenditure)
	Advanced economies		
Canada*	—	—	8
France*	1	3	5
United States*	2	1	2
Spain	3	2	—
Italy*	5	4	6
United Kingdom*	6	7	3
Germany*	8	6	1
Japan*	—	—	7
Australia	—	8	—
Austria	—	10	—
Netherlands	—	—	10
	Emerging and developing economies		
China	4	5	4
Turkey	7	9	—
Mexico	10	—	—
Russian Feder.	—	—	9

*Major advanced economies (G7).
Advanced economies group include the following 31 countries: Australia, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, South Korea, Luxembourg, Malta, Netherlands, NZ, Norway, Portugal, Singapore, Slovenia, Spain, Sweden, Switzerland, Taiwan, UK, US.
Source: IMF (2011) and UNWTO (2011d).

influenced by country size, yet it illustrates that developed countries are the world's main tourism players, in terms of absolute tourism arrivals, earnings and spending.

Tourism is nowadays an important part of the world economy and society. It has become part of a lifestyle of the rich and a development chance for less privileged countries. It certainly contributes to economic and social development and is an important industry for many countries, both developed and less developed. In 2010 international tourism receipts have reached US$852 billion and represent 2–3% of worldwide GDP (UN, 2011; UNWTO, 2011b). Yet these figures only measure the direct impact of the tourism industry, and it is often argued that tourism impacts should not be measured inside the

tourism industry only, but also inside the *tourism economy*, which includes total, thus direct and indirect financial and other effects of tourism. Direct tourism expenditure go to the tourism industry and only accrues to the 'first-round' tourism recipients and is equal to the amount of tourism consumption (tourism receipts) in the destination. Nevertheless, the first round direct tourism contribution does not fully reflect the tourism's overall contribution to the economy. In the second transaction, first-round recipients spend revenues to settle their accounts payable. Tourism expenditure is transferred to supplier accounts and in subsequent transactions to the suppliers' suppliers etc. This is referred to as the indirect effect of tourism expenditure. At the same time, there is the induced effect caused by induced local demand. Household income increases as the tourism expenditure expands economic activity and raises employment. A portion of increased income is re-spent on goods within the local economy, thus generating induced effects. The sum of all these effects (direct, indirect and induced) represents the total change in the economy resulting from the initial tourist expenditure, raising the overall tourism's contributions to the world GDP to 5% (UNWTO, 2011b).

However, tourism is also criticised for its negative environmental, cultural and social impacts. Both positive and negative impacts are unevenly distributed among advanced and emerging economies and regions. This uneven situation is illustrated in Tables 28.2 and 28.3, where world data and data for some randomly selected developed and developing countries are shown.

Table 28.2. Selected development and tourism indicators for world and advanced and emerging economies, 2008.

Region/ country group	GDP per capita (US$)	GDP (% of total)	Population (% of total)	Int. tour. arrivals (% of total)	Int. tour. receipts (% of total)	Int. tour. receipts per capita (US$)	Int. tour. receipts per arrival (US$)
			World				
Total	8,862	100.0	100.0	100.0	100.0	136.4	1,025
			Advanced economies				
Total	42,271	69.0	14.5	51.1	65.0	612.0	1,236
			Emerging and developing economies				
Total	3,207	31.0	85.5	48.9	34.9	55.7	776

Sources: UN (2011), UNDESA (2011) and UNWTO (2011d).

Table 28.3. Development and tourism indicators for world and selected advanced and developing economies, 2009.

World/ selected country	Int. tour. receipts (% GDP)	Int. tour. expenditures (% GDP)	Int. tour. arrivals per capita (US $)	Int. tour. departures per capita	Int. tour. receipts per capita (US $)	Int. tour. expenditures per capita (US $)	GDP per capita (US $)	Population (% of total)	Int. tour. receipts per arrival (US $)	Int. tour. receipts per day (US $)
Advanced economies										
Germany	1.40	2.80	0.29	0.88	577.20	1,126.79	4,5999	1.19	1,961.48	852.82
Japan	0.20	0.70	na	0.12	99.08	274.93	3,7644	1.83	1,846.39	na
Switzerland	3.40	2.60	1.08	2.27	2,131.39	1,637.79	6,5564	0.11	1,969.73	810.59
USA	1.00	0.70	0.18	0.20	475.39	338.94	4,7335	4.50	1,948.11	327.86
Emerging and developing economies										
China	0.90	1.00	0.04	0.00	31.76	35.50	3577	19.47	337.08	312.68
Egypt	6.30	1.60	0.15	0.00	144.93	36.25	2652	1.18	937.86	97.80
Mexico	1.40	1.00	0.19	0.00	108.52	76.05	1,1103	1.64	142.81	59.45
Turkey	4.00	0.80	0.35	0.00	337.53	63.60	1,1620	1.06	906.90	230.88

Switzerland departure data for 2008.
Sources: UN (2011), UNDESA (2011) and UNWTO (2011e).

According to the data in Table 28.2, advanced economies have 14 times higher GDP per capita than developing countries (UN, 2011; UNDESA, 2011). As a result, 14.5% of the world's population of these economies attracts 65% of international tourism earnings; moreover, in these countries, international tourism receipts per capita are 11 times higher than in emerging economies. Developed countries such as Switzerland or Germany earn more than three times more from a single tourist per day than Turkey, and Turkey earns 3.6 times more than Mexico (Table 28.3), leading to large differences in terms of international tourism participation. For example, international tourism departures per capita for Germany show a nine times higher value than the latest figure for Japan, not to mention emerging and developing countries (UNWTO, 2011e). Such uneven distribution of tourism and consequently tourism economic, environmental and socio-cultural impacts fuels debate about tourism development.

The definition of development changes according to the discipline that studies development, as well as with time (Pearce, 1989). From the standpoint of economic discipline, after the Second World War, economic development has been studied through the eyes of four different schools of thought or development paradigms (Sharpley, 2009; Todaro and Smith, 2006). The *modernisation development paradigm* in the 50s and 60s viewed the process of development as synonymous with aggregate economic growth. The contribution of tourism development to the growth of the economy becomes relevant. At the same time, the *dependency development paradigm* viewed underdevelopment in terms of relationships, dual economies and dual societies both within and among the world nations and emphasised the exploitation by developed countries and institutional and political constraints on economic development. It called for eradication of poverty, more development opportunities and reduction of income inequalities, in the context of economic growth. From these aspects, tourism critics discussed international tourism as a form of imperialism and neo-colonialism (Nash, 1989). In the 70's, the focus moved towards structural changes that a developing country must undergo if it is to generate an economic growth and use its tourism potential to support these changes. In the 70's and 80's, the *economic liberalism development paradigm* pointed out the limits on government intervention in the economy and started to promote the benefits of free markets, open economies and privatisation. Tourism has been seen in a context of a new economic order as a tool for closing the gap between the developed and developing worlds. In the 80's, the accumulated experience with past development

and its failures and successes led to an extension and modification of traditional neoclassical growth theory and to a so called new growth theory. According to this *alternative development paradigm*, development should be endogenous; it should emanate from the needs of each society, rather than being imposed exogenously. In tourism, alternative development advocates stressed the importance of local context, the role of women, NGOs and environmental management. According to Vanhove (2011), tourism gained political recognition as a valuable vehicle of development in the mid 80's, that is, by the time of the third Lomé Conference. Since then, tourism economists have widely discussed the positive and negative potentials of tourism for development.

The development debate also became linked with the *sustainability concept*, based on the 1987 Brundtland Report. Parallel alternative development concepts have also been widely discussed in the tourism field where debate was fuelled by the accelerated growth of international tourism that has brought some new problems. Mainstream mass tourism, being largely urbanised summer sea-sun-sand tourism or technically-supported concentrated winter ski tourism, has gradually become ethically, politically and ideologically intolerable. Concentrated large-scale industrial travel was labelled mass tourism and blamed for all kinds of damage to the natural environment and for socio-cultural ignorance and destruction. The search for a substitute to the traditional mass tourism started a mere few decades ago, and new approaches culminated in the concepts of alternative tourism development: soft tourism, tourism with understanding, ecotourism and, finally, sustainable tourism. Sustainable tourism development, its content and values became the dominant school of thought in the 90s and has become a part of tourism strategic development policies in countries and institutions worldwide. This shift has also moved the interest in classical economic impacts of tourism towards the environmental impacts — natural, as well as cultural and social.

However, as development is nowadays seen as an improvement in levels of living for the people and in order to achieve development goals, development economics must not limit its efforts to sustained growth only, but it must also deal with the economic, social, political and institutional mechanisms that influence economic growth and development in total. Thus, development as a process of improving the quality of all human lives is being understood from three different, equally important aspects (Todaro and Smith, 2006). First, through the economic growth process, development raises one's quality of life — income, food consumption, medical services, education, among

others. Second, the establishment of social, political and economic systems and institutions that promote dignity and respect, is known to raise one's self-esteem. Third, development also means increasing individual freedoms by increasing one's choices: consumer products and services, leisure or other values and capabilities. It has been recognised that there is no firm agreement on the key dimensions of human development; they can vary from country to country, as well as with time.

The above discussion draws on many development dimensions, but raising per capita income remains one of them. This means, first, that the concept of economic growth-based modernisation remains the appropriate framework for exploring tourism's economic development potential. Second, economic development is seen as a process of economic transition that involves the structural transformation of an economy and the growth of the real output of an economy over time (Pass *et al.*, 1993). Third, economic tourism development debate has long ago incorporated the environmental issues, based on welfare and sustainability development paradigm.

28.3. Tourism Economic Development Cycle

Structural transformation is achieved through industrialisation and is measured in terms of the relative contribution to NI or GDP of the agriculture, industry and service sectors. Developing countries are characterised by subsistence primary production sector (i.e., agriculture) and low per capita GDP whilst, conversely, developed countries are characterised by large manufacturing and service sectors, a relatively small agriculture sector, and high levels of per capita GDP. Within less developed countries and regions tourism is very often considered as a contributor to economic growth and as a catalyst of favourable structural changes within the local economy. However, the actual ability of tourism to support economic growth and to make an increasingly significant contribution to national output remains the subject of intense debate, particularly as there is much evidence to support both sides of the argument. Frequently, this economic argument is derived from capital-output ratio or capital coefficient analysis. A low marginal capital coefficient will enhance the rate of economic growth, and a low average capital coefficient will enable higher output.[2]

[2]Output growth rate (y) is measured by an increase in actual national output or income (ΔY). The capital coefficient (k) is based upon the amount of annual investment (K) required to produce a single unit of output (Y) in the economy. Economic growth rate y, capital coefficient $\bar{k}$, and marginal capital coefficient k_{m}

In the specific context of tourism, capital-output analysis is based upon a comparison between the tourism sector marginal capital coefficient and the equivalent coefficient calculated for the whole national economy. As presented in Table 28.4 and Fig. 28.1 analysis divides tourism development into three stages, according to its contribution to the growth of the local host economy. Figure 28.1 presents an upside-down 'U' shaped marginal capital coefficient for a tourism sector that grows during the investment phase (stage II). In the first development stage, known as exploration in literature (Butler, 1980), alternative tourism (Krippendorf, 1987) or the pioneer stage (Mihalič, 2002b) tourism development is practically non-present; it is spontaneous and unsupported by either a tourism development policy or by intensive capital investment; tourism infra- and super-structure is practically non-existent, and it is not easy to access the destination. Visitors are low in number, their needs are satisfied by improvisation and small entrepreneurial initiatives, sometimes simply local people hospitality based. At this stage, the average capital coefficient in the 'pre development tourism sector' is low, much lower than the average for the economy as a whole. Certainly, tourism businesses contribute to economic growth in the region although tourism contribution in this first stage is not normally substantial.

As tourism development and investment starts, amenities are increased and improved, ushering the destination into the second tourism development stage (Butler, 1980; Mihalič, 2002b). This stage theoretically begins at the point where tourism has zero impact on national economic growth (point A, Fig. 28.1). Actual tourism investment commences, soon the tourism capital coefficient increases and the majority of investment activity occurs within development stage II. Political support and significant levels of capital investment are usually required and, since there exists a time lag between invested inputs and generated outputs in the form of tourism earnings, the average tourism capital coefficient increases and becomes higher than the average

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are defined as follows:

$$y = \frac{\Delta Y}{Y} \quad \text{and} \quad \bar{k} = \frac{K}{Y} \quad \text{and} \quad k_{\mathrm{m}} = \frac{\Delta K}{\Delta Y}.$$

Thus, a lower marginal capital coefficient will enhance the rate of economic growth:

$$y = \frac{\Delta Y}{Y} \Rightarrow y = \frac{\frac{\Delta K}{k_{\mathrm{m}}}}{Y} = \frac{\Delta K}{k_m \, {}^*Y}.$$

A lower average capital coefficient will enable higher output:

$$y = \frac{\Delta Y}{Y} \Rightarrow y = \frac{\Delta Y}{\frac{K}{\bar{k}}} = \frac{\Delta Y * \bar{k}}{K} \Rightarrow \Delta Y = \frac{y * K}{\bar{k}}.$$

Table 28.4. Concept of tourism development cycle and its impact on economic growth.

Tourism development stage	Capital coefficient	Impact on economic growth
I Before tourism development (spontaneous visitation)	$k_{m\ tourism\ \ sector} < k_{m\ national\ \ economy}$	Tourism contributes to economic growth, impact is not substantial, due to low volume (based on hospitality, small private business initiatives and improvisation, demand driven)
II Tourism development (investment in tourism)	$k_{m\ tourism\ \ sector} > k_{m\ national\ \ economy}$	Tourism slows down the average national economic growth rate, due to high input (capital investment) and still low, but growing output (building tourism infra- and super-structure, predominant growing numbers orientation, possible turn towards supply driven model)
III Developed tourism sector (built tourism infra- and super-structure)	$k_{m\ tourism\ \ sector} < k_{m\ national\ \ economy}$	Tourism accelerates the average national economic growth rate, due to already built infrastructure; visitation has reached larger volume, output grows also on the account of increased consumption (innovations, quality and diversification of tourist spending into non-tourism sectors . . .)

coefficient for the country. Thus, during the second stage, the marginal capital coefficient within the tourism sector also increases the overall economy's coefficient, thereby slowing down the average national economic growth rate. However, during this stage, other benefits of tourism development are promoted, such as improvements in the host population's quality of life in terms of new infrastructure or the opportunity for cultural exchanges with visitors, new jobs and the multiplier effects of tourism consumption.

A country reaches tourism development stage III when its marginal tourism capital coefficient falls to or below the average coefficient for the

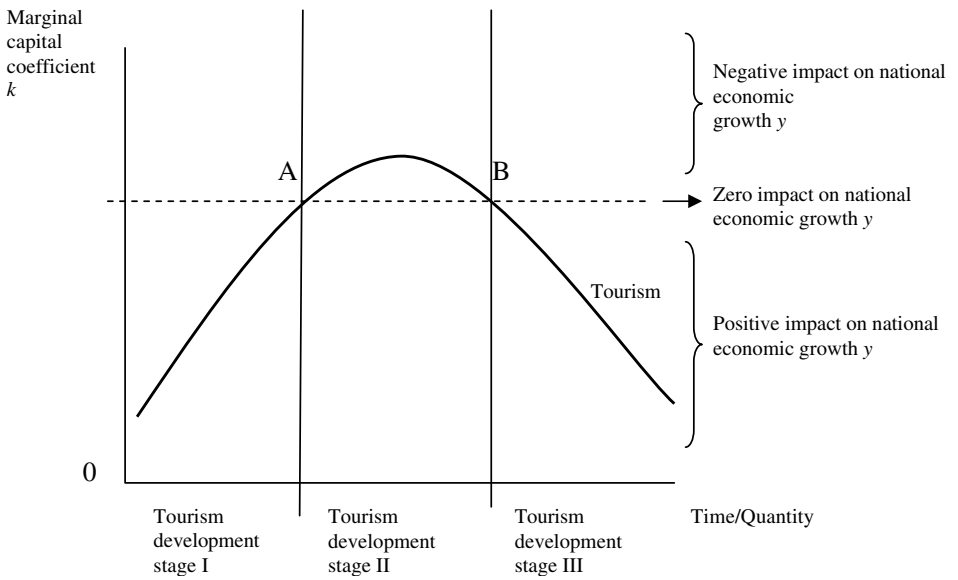

Fig. 28.1. Tourism development cycle and impact on economic growth.

economy as a whole. This results from both the benefits of the past investment in tourism infra- and superstructure being realised and also from current innovations and improvements in the quality and assortment of tourism products, which together encourage higher levels of tourist consumption, hence contributing to the economic growth of the local economy. The assumption is that, tourism visitation has reached certain numbers that possibly satisfy the economic bottom line, yet not social or environmental limits. Nevertheless, growth in numbers is still possible, in the case of available capacities also during high season, and surely in out of main season periods. In addition to physical growth, relatively little additional tourism capital investment is required for an additional increase in tourism yields if the destination is able to increase the quality of its resources and tourism product. This might be the case in developed countries that are able to increase the quality and variety and consequently, daily tourism consumption per visitor, with the overall number of visitors remaining unchanged. However, in many less developed economies, a rise in tourism yield is predominantly achieved through an increase in the number of visitors by promoting large numbers of tourism and the related advantages of large-scale production which might be a fast track towards lower yield per visitor and towards unsustainable development.

Although the above capital coefficient analysis contributes to our understanding on the impact of tourism on economic growth over time, it has a weakness being a partial equilibrium analysis only. It assumes a given structure of production in terms of factors used and their remuneration and thus neglects the industry interactive effects across the economy. This assumption is represented by the linear 'zero impact on national economy growth' line in Fig. 28.1. General equilibrium theory would consider the impacts of tourism demand on shape and location of demand curves across all industries, and such a dynamic view would change the 'zero impact line' in time; however, in a real situation, it is not clear when and whether point B and the stage of tourism's positive impact on national economic growth can be achieved.

Many destinations lack the financial resources needed to start and complete the tourism development phase. That is, they have to try to attract private foreign capital to fund tourism superstructure development, such as accommodation, restaurant or entertainment facilities. At the same time, the development of both general and tourism-specific infrastructure, such as airports, roads, power supply, water supply and sewage, is also needed for tourism development (Stabler *et al.*, 2010). However, as capital investment is needed because tourism is spread over several sectors, this cost might not be taken into account in partial tourism sector analysis, which in turn might reduce the real value of the tourism capital coefficient, resulting in exaggerated tourism contribution to economic growth.

With limited public financial ability in developing countries, however, international organisations, such as the World Bank and other sources of international development finance, have for many years been the suppliers of capital for such investments (Bull, 1995; Pearce, 1989). There is certainly no doubt that foreign capital investment gives rise to extra income and growth, creates new jobs and encourages foreign currency earnings but, at the same time, it unfortunately generates more leakages than domestic capital investment from local private and governmental sources. This is, of course, because profits are remitted to the parent company, more foreign staffs are usually employed and more imported goods may be used to support the tourism business, factors which, collectively, serve to reduce the contribution of tourism to GDP and its potential for economic growth.

Thus, the economically favourable third stage of tourism development may not be reached as easily as suggested in partial theory. The achieved decrease in the capital coefficient, based upon the ability of the economy to increase the daily tourism consumption per visitor without much new capital investment, depends upon many factors. For example, international tourism data demonstrate that the more the destination economy is developed, the

higher the tourism earnings per visitor and vice versa. Thus, as already illustrated, Germany or Switzerland earns per tourist per day approximately three times as much as Turkey (see Table 28.3). In other words, it tends to be the countries with more developed and diverse economies to which the economic contribution of tourism development accrues more effectively. Thus, the level of development and the level of diversification of the host economy is an important factor in achieving a decrease in the capital coefficient. Furthermore, developed countries may develop other, non-tourism sectors that make a greater contribution to overall economic growth than is possible through tourism. Although in these countries' value added in the tourism sector may be relatively low, tourism value added, which is created in response to tourism consumption in tourism and other sectors, may be higher on the account of non-tourism sectors involved. For example, some developed destinations, such as Swiss St. Moritz, successfully promote prestigious domestic non-tourism products, such as watches and other high added value products in order to increase tourism spending. Again, in the destinations that are less able to increase tourist spending, emphasis in volume might lead to social and environmental limits of tourism development. Unfortunately, our model in Fig. 28.1 does not show the impact of environmental damage. Theoretically, inclusion of monetary expressed environmental damage on the account of tourism development into our model would decrease tourism output and thus increase the value of the marginal capital coefficient, which will create negative pressure on economic growth in the destination. This might lead to a Butler's (1980) stagnation phase.

Quite the opposite argument for advanced economies comes from the criticism of the capital coefficient that there is a limit to how capital efficient countries can remain so as their processes become increasingly advanced. For example, an emerging economy can increase its GDP by a greater margin by implementing the existing technology. Quite the contrary for an advanced economy any further improvements would have to come from costly research and technological development. However, in tourism, technological progress and capital intensity are lower than in other industries.

28.4. Economic Impacts of Tourism

Central to the economic measurement of economic impacts of tourism is tourism spending. In general, tourism introduces extra expenditure into an economy, such as tourist spending on goods and services in the visited area, tourism related investment, governmental spending or exports of goods, simulated by tourism. The sum of all these effects (direct, indirect and induced)

represents the total change in the economy resulting from the initial tourist expenditure and has a positive effect on economic growth.[3]

Tourism development also, of course, has many non-economic developmental impacts, such as socio-cultural consequences, health or educational benefits, peace promotion and so on. However, this chapter is primarily concerned with the economic dimension of tourism, in particular the issues surrounding the potential contribution of tourism to economic development. Tourism, from an economic perspective, may contribute to or militate against development because:

- Tourism brings economic development and reduces the development gaps;
- Tourism brings foreign currency for development;
- Tourism creates employment;
- Tourism brings economic growth by making environmental goods more valuable (Mihalič, 2002a). It valorises or adds a value to them.

28.4.1. *Tourism brings economic development*

Tourism development considerations relate not only to countries as a destination, but also, to clusters, to regions and cities. From the perspective of convergence theory tourism is seen as a tool for poverty alleviation and as a tool for development gap reduction.

The spatial movement is central to tourism and for this reason the tourism holds the potential to improve the spatial distribution of economic development. If we assume that tourism consumption flows from developed spatial areas towards less developed ones, this redistribution of financial resources and its economic benefits helps to reduce the development gap between the two groups. This so called convergence theory is sometimes based on the differences in economic development between North and South, i.e., between the industrially developed and developing countries and sometimes applied to the economic development of regions in the same country. Therefore, the theory differentiates two approaches.

[3]The multiplier value (M) depends on the change in total output (ΔY) and initial change in expenditure (ΔE) and, as shown by equations below, a higher multiplier means a higher economic growth rate (y):

$$M = \frac{\Delta Y}{\Delta E}$$

$$y = \frac{\Delta Y}{Y}; \quad \Delta Y = M * \Delta E \Rightarrow y = \frac{M * \Delta E}{Y}$$

The first approach relates to the division of the world into developed and developing countries. The classic form of the theory assumes that tourism reduces the gap between the two groups. The majority of tourist flows are in a North–South direction, i.e., from the developed industrialised countries to the developing non-industrialised ones. Developing countries use tourism to generate economic growth and obtain (foreign) currency for faster economic development. Some international institutions therefore view tourism as a means to achieve a new, more equitable international economic order, i.e., a means to reduce the gap between North and South (WTO, 1980).

The second approach is regional. The compensation function of tourism is seen as reducing differences in economic development between regions in the same country and notably between urban centres and the periphery. However, as the compensation function in this case stems from both foreign and domestic tourism within a region in the same country, it is usually less noticed because receipts from visitors in a local or regional economy are not registered as an income in a balance of payment within the region, as the latter is only calculated at the country level. Besides, it was long assumed that domestic tourism meant only redistribution of money within the same national economy, having no impact on national income. However, domestic tourism may have an indirect impact on tourist balance of payment as it can reduce travel of residents abroad. Then, domestic tourist expenditure has an effect on national GDP as consumption of domestic tourists is greater than their spending in the place of their residence. The total tourist expenditure within a region also affects regional GDP. Last but not least, from the standpoint of spatial redistribution of income between regions, the effects of domestic tourist expenditure are identical to those in international tourist expenditure.

Both mentioned approaches (regional and national) are based on the division to developed and less developed areas and assume that tourism brings economic development to non-industrialised areas (Bryden, 1973). This classic approach assumes that tourism 'redistributes economic development away from industrial centres to the benefit of less developed regions and countries' (Peters, 1969).

However, critics agree that tourist flows in destination developing areas (regions or countries) bring added funds which trigger additional economic activities and the rise of aggregate household income. Yet, they do note that the effects of such additional funds on the economy may be much lower than expected. The reason lies in the fact that money also flows out of the developing areas and that tourist expenditure in the destination actually enhances economic growth outside the region/country. An example may be payments

for imported goods that the destination must import for tourist purposes. Nowak *et al.* (2010) showed that tourism production is globally fragmented and that the scale of cross-border tourism production is quite substantial and it will probably continue to rise. Some countries may be competitive in some parts of tourism product only, whereas they might not be efficient enough to compete in other parts. For example, tourism products are becoming increasingly information and communication technology (ICT) based and it is logical to expect that countries with technological advantages in ICT also possess a comparative advantage for these services. Then, leakages also apply to tourist expenditure caught in the destination by foreign and multinational corporations which redistributes a part of the income from tourism back to the developed areas where they have head offices. Some critics of the convergence theory even see international tourism as a colonialism and imperialism (Harrison, 2000). Firstly, growth in the developing tourist regions/countries depends on the developed centres from which tourists come. Secondly, richer tourist-generating centres become richer from tourism in the developing regions/countries because tourist expenditure leaks out of the main flow either in the first round when tourists buy imported goods or in subsequent rounds when tourist companies purchase goods and services from suppliers outside borders of the region/country. Furthermore, the tourist stimulated consumption in a place of residence before and after travel has the same effect.

If a region/country focuses too much on tourism development and neglects other traditional activities, it will become economically dependent on tourism, i.e., on tourist flows from developed areas. Such development, based solely on one economic activity, is highly risky. Tourist demand is highly volatile and may easily be redirected for a variety of reasons: It depends on fashion, exchange rate movements, natural disasters, terrorism, diseases etc. There are many examples, ranging from the nuclear disaster in Chernobyl in 1986, the terrorist attack on New York in 2001, the Indian Ocean tsunami in 2004, and volcanic eruption in Iceland in 2010 to the occurrence of global financial crisis (GFC) from 2007–2010.

An additional argument speaking against an idealised convergence theory is the fact that developed countries/regions make a lot of money from receiving tourism. As we already demonstrated in Table 28.1, five of the major G7 countries are on the top 10 list of tourism earners. Tourist expenditure per overnight stay in developed countries is higher than in developing countries/regions, as already shown in Table 28.3. We assume that developed countries are capable of generating a higher value-added for tourist products, notably by better production and marketing methods. However, the level of

development of the tourism industry is not the only factor determining how much of the tourist expenditure a country will be able to 'transform' into higher economic growth; the overall level of economic development matters as well. We must take into account that different, including non-tourist, economic sectors participate in individual rounds of economic activity triggered by tourist demand. A more advanced economy will therefore be able to make more money out of tourism and will be capable of retaining a greater share of tourist expenditure and utilising it for new economic activities (secondary effect). Different industries, not only tourism, therefore affect the convergence in economic development resulting from the development of tourism. As the developed areas have better developed non-tourist activities capable of generating higher value-added per product unit, the rates of economic growth of economies with developed tourism but otherwise being undeveloped economically and of industrial and post-industrial economies cannot converge. It would be wrong, however, to view the criticism as an argument against the tourism development models in the developing countries/regions. The question is not, 'What is the capacity of generating value-added by an industry?' but instead, 'What are the alternatives?' It is a fact that tourism brings a number of economic and other benefits to a national economy.

Another discussion on tourism and economic growth is inflation based. It claims that tourism demand will increase the country's price level and thus decrease its price competitiveness and redirect tourist flows in the direction of the competing destination countries (Martin and Witt, 1988; Webber, 2001; Witt and Witt, 1994). Reduced spending will have a negative effect on economic growth. Quite the opposite, the opponents argue that tourism demand inflation is constructive to a faster rate of economic growth, since the excess demand and favourable market conditions might stimulate investment and expansion (Vanhove, 2005).

If tourism demand is high and represents a high portion of a country's GDP, inflationary tensions in tourism may spill into the economy and contribute to the rise in general inflation. Yet, many authors argue that inflationary tourism effects are limited in terms of time, space, and kinds of products or markets. Tourism demand may cause higher prices in peak seasons only, and the pressure on prices may be limited to the most visited places, holiday resorts, cities, and streets. Then, tourists are interested in a narrow range of goods and services, such as food, accommodations, souvenirs, clothes, design elements, and beauty products, and thus the impact of inflation is limited. Although higher prices affect residents, they can change their buying behaviours and move to other points of sale when necessary in

order to avoid the higher prices. Some authors claim that higher real estate prices will drive small businesses and young families out of destination, yet Vanhove (2005) argues that, from the macro-economic point of view, higher real estate prices are a benefit, and all owners profit from the additional value.

Although the convergence idea has been criticised by many, perhaps the strongest argument against the theory is the development of tourism in the 20th century. The modern approach shows that contemporary tourism development benefits richer regions (Williams and Shaw, 1998). The development of new forms of tourism, such as urban tourism, cultural tourism, visiting amusement parks and the trend towards shorter trips made several times a year, favours destinations which are relatively easily and quickly accessible and close to developed urban centres. The phenomena has been proven in the case of the United Kingdom, notably London and its surroundings, as well as Austria where Zimmerman (1998) proved redirection of tourist flows to the benefit of richer regions, in particular Vienna and Lower Austria.

This redirection of tourist flows towards industrially developed areas is partly business tourism based and also conditioned by shifts in leisure demand towards shorter holidays and new tourist products. Purposely-created new supply also provided a strong incentive. Many industrial regions experienced economic problems because old industries such as mining, steel, textile and shipbuilding industry began to die out. Those regions began to seek new economic opportunities and the development of new forms of tourism was one of them. They expected tourism to bring a new round of economic and social development. Examples are many: from Boston and Baltimore in 1970s to Dortmund and Essen in Germany in 1980s. Old mines were turned into museums and old industrial plants into venues for musicals and other cultural events inviting visitors from near and far.

Despite the wealth of evidence on stronger impact of tourism expenditures in developed geographical areas that offer tourism products, there are doubts about the role of tourism as a development vehicle in richer regions. It is true that tourism impacts on income generations or balance of payment in these areas are in most cases marginal, as tourism is not a main activity. Many authors (Dwyer *et al.*, 2010; Smeral, 2001; Vanhove, 2011) warn against unrealistic development expectations from tourism, as the interactive effects between tourism and other well-developed sectors of the economy must be taken into account.

Then, the situation might be very different in less developed regions in less developed countries. Many authors have proven that, tourism demand raises aggregate household income and substantially benefits the destination.

Unfortunately, its potential to alleviate poverty has been questioned by many studies, as contemporary analyses have shown that it also worsens the distribution of income. Wattanakuljarus and Coxhead (2008) found that through the general equilibrium effects on growth in inbound tourism in Thailand undermined profitability in agriculture, from which the poor mainly derive their income. Then, Blake and others (Blake, 2008; Blake *et al.*, 2008) confirmed that tourism benefits the lowest income groups less than some higher income groups and thus, in order to properly address the inequalities, additional policy instruments are required.

Cities and industrial areas do not develop tourism solely for tourist consumption to revive the economy and social life. Some researchers (Sandford and Dong, 2000) have proven that the development of tourism stimulates direct investments in other, non-tourist, industries, thus making an additional, indirect, contribution to economic revival and growth. The development of tourism improves a country's image abroad and increases its recognition. A country may become more attractive for international meetings, political summits or sport and other events. All of this contributes not only to the growth potential, but also raises a country's and people's dignity and self-esteem and enhances their freedom, with respect to all elements of development in total.

28.4.2. *Tourism brings foreign exchange for development*

Many countries decide to engage in planned development of tourism because of the need for foreign exchange necessary to import resources needed for economic development and restructuring of predominantly primary production based economies.

From an economic aspect, international income from tourism can be studied as classic exports, and international tourist expenditure can be studied as classic imports. They are presented in the travel balance, which is a part of the service account of any country's balance of payments. The travel balance presents income from foreign tourists and expenditure from the travel of residents abroad. However, the balance of such simply defined travel balance is relatively meaningless from the perspective of the economic impacts of tourism on the national economy. It only quantifies the final payments made by tourists. It is necessary to account for all tourism-related transactions in order to determine the true significance of tourism. This includes not only the final payments by tourists and payments for travel costs, but also all international payments related to investments in the tourism industry and its operations. That would lead to a 'correct' tourism balance, which would contain all relevant transactions related to tourism.

Although tourism is an important instrument for regulating the balance of payments saldo, its effects on the balance of payments can vary. Undoubtedly, the effect matters a great deal in quantitative terms. Travel and tourism exports in goods and services are estimated to account for 6% of total world exports (UNWTO, 2011b). Globally, tourism ranks as the fourth highest export category, after fuels, chemicals, and automotive products. For many developing countries, tourism is one of the main sources of foreign exchange income and is the main export category. For example, Maldives' inbound tourism expenditure generates 61% of exports of goods and services, while Macao's inbound tourism expenditure generates 88% (UNWTO, 2011a).

However, the significance of receipts and expenditures related to tourism varies among countries. Generally, developing countries have a surplus in the balance of tourism, while developed countries have a deficit. Table 28.5 demonstrates that foreign income from tourism represents an important inflow for both developing and developed countries. Yet, developing countries are net earners, as their tourism receipts are bigger than expenditures, resulting in a positive tourism balance. In general, the opposite is true for developed countries, as their populations are richer and travel more. The exception is Switzerland — a strong receiving tourism destination and worldwide the most competitive tourism destination (WEF, 2011), that has the highest tourism expenditure per capita, but also the highest tourism receipts per capita and a positive tourism balance.

The classic view (as opposed to the contemporary) on the development of tourism states that developing countries are more attractive for tourism because of their less polluted environments and the quality of their natural and socio-cultural attractions. At the same time, tourism poses an attractive development opportunity for developing countries, as it can generate high growth rates and more income than exporting goods and services:

- Some products (e.g., a bottle of wine) that are 'exported' by being sold to foreign tourists achieve higher sales prices than when these products are exported as a commodity the traditional way.
- 'Exporting' by selling to tourists also brings more profit, because apart from the higher price, the costs of export are lower (e.g., lower or no transportation costs, insurance costs, etc.).
- Some perishable goods (e.g., perishable agricultural products) can be sold to tourists in a country that could not be successfully exported, because they may be ruined by heat or time due to underdeveloped infrastructure or poor management of export flows.

Table 28.5. Import–export indicators of the travel and tourism sector for selected advanced and emerging economies, 2009.

Country	Int. tour. receipts (US$ Mn)	Int.tour. expenditures (US$ Mn)	Tour. balance (US$ Mn)	Int.tour. receipts per capita (US$)	Int.tour. expenditures per capita (US$)	Tour. balance per capita (US$)	Receipts over export of goods and services (%)
Advanced economies							
Germany	47.505	92.738	−45.233	577.20	1,126.79	−549.59	3.50
Sweden	12.114	13.432	−1.318	1,291.47	1,431.98	−140.51	7.20
Switzerland	16.335	12.552	3.783	2,131.39	1,637.79	493.61	6.00
Canada	15.555	26.204	−10.649	457.27	770.32	−313.05	4.10
Japan	12.537	34.788	−22.251	99.08	274.93	−175.85	1.90
Emerging and developing economies							
Mexico	12.309	8.626	3.683	108.52	76.05	32.47	5.0
Turkey	24.556	4.627	19.929	337.53	63.60	273.93	17.20
Egypt	11.757	2.941	8.816	144.93	36.25	108.68	26.40
Thailand	19.421	5.659	13.762	280.97	81.87	199.10	10.90
Maldives	608	133	475	1,924.05	420.89	1,503.16	61.50

Sources: UNDESA (2011) and UNWTO (2011a).

- Some goods cannot become a subject of exchange of international trade, such as the country's natural, cultural or social attractiveness, but they can be utilised through tourism. They attract tourism demand and are indirectly 'sold' on the tourism market, in the form of higher prices for tourism products, with marginal or no additional investment. Yet it should be noted that commercial valorisation of inherited resources is only possible once basic tourism infrastructure is in place.
- Compared to other export industries, exporting attractions through tourism involves no danger of exhaustion of these 'raw materials' (Planina and Mihalič, 2002; Vanhove, 2010; Sharpley and Telfer, 2002). Quite the contrary, more visited and thus more 'used' attractions become better known, and more people will come to visit them; thus the region's commercial tourism increases, and tourism will continue to increase up to the point of congestion. However, there is also the possibility of overuse or even destruction resulting from increased tourism.

Tourism can therefore be viewed as a relatively easy way to obtain foreign exchange. As the majority of developing countries have problems in their balance of payments because of deficits in the balance of foreign trade, capital or both (Witt, 1989), income from international tourism can reduce the balance of payments deficit, ceteris paribus. In recent history, many developing countries (Yugoslavia in 1970s and 1980s) and developed countries (such as the UK and USA in the 1960s) tried to restrict their citizens' travel abroad in order to support their balance of payment and, more particularly, to protect their national currencies (Planina and Mihalič, 2002; Vanhove, 2011; Witt and Witt, 1994). On the other hand, when faced with an enormous balance of payments surplus and immense international pressure to balance the foreign trade with industrialised countries of G7 in the 1980s, Japan purposely stimulated travel of their citizens abroad (Polunin, 1989) and increased their tourism-related investments abroad.

However, the actual contribution of tourism to the balance of payments equilibrium depends on many factors (Williams and Shaw, 1998). First, we must take into account outflows from travel of residents abroad. Second, we must take into account leakages from inbound travel consumption. The amount of such leakages depends on the import orientation of the economy, which may spend a greater or lesser share of tourism expenditures to import goods that the domestic economy does not provide for tourist needs. The amount of leakages also depends on the ownership structure of companies, in tourism and non-tourism industries, which cater to tourist needs. Ownership by foreign capital results in outflows for profits, payments to foreign staff etc.

And, finally, the international demonstration effect should be taken into account as well. Through tourism, local populations come into contact with new goods and consumption habits which, in turn, create pressure to increase access to these material goods. Thus, the demonstration effect increases the import orientation of the economy, because it enhances demand by the local population for imported goods when they want to imitate the behaviours and habits of foreign tourists. In an extreme case, the net foreign-exchange effect of international tourism could even turn negative if the country spent more on imports for the needs of the tourism industry than the amount of income generated from visitors.

Increased inbound tourism may cause adverse effects on the balance of payments through induced changes in traditional export- and import-competing industries. Countries with floating exchange rates experience upward pressure on the exchange rate, which decreases their export competitiveness and makes imports more attractive. This pressure tends to offset inbound tourism's positive effect on balance of payments, to some extent. When exchange rates are not free to vary, the country may freeze the rate and (at least for a while) ignore that pressure in order to avoid its adverse impact on exports and imports. Yet, even in this case, the shadow foreign exchange rate or a true price for foreign currency will soon differ from the market rate, and will compensate for the pressure, or else the country will have to introduce export subsidies in order to compensate exporters for the increased exchange rate and to keep exports competitive. Dwyer *et al.* (2010) claim that the economy can benefit from tariff revenues from the additional imports made possible. Again, such benefits in developed countries are unlikely to be substantial, although this need not be the case for developing countries (Dwyer *et al.*, 2010).

28.4.3. *Tourism creates employment*

Tourism can create new jobs. It is often said that the tourism economy is the biggest employer, yet data on total tourism employment contributions vary and are a matter of constant discussion. Different estimates of employment are based on different methodologies, and thus vary. For example, according to the UNWTO, the total direct and indirect global tourism employment effect in 2009 was between 6% and 7% (UNWTO, 2011b); according to the WTTC, the effect was 8.8% (WTTC, 2011).

Statistics on tourism employment are still underdeveloped, due to the nature of the tourism industry, which is not only limited to the accommodation sector, but also includes tourism-related activities of other sectors, such

as the food and beverage industry, passenger transport, and culture, sports, and recreation, which in turn do not serve only tourist customers.

Some countries have made huge improvements in tourism statistics by adopting the tourism satellite account (TSA), which allows more accurate measurement of the tourism industry and comparison with the other sectors in the economy. Based on TSA, the European Union (EU) estimates that EU tourism employs 13 million persons and is responsible for 6.2% of total employment. These data vary among the member states, from 3.4% in the Czech Republic to 12% in Spain (Demunter, 2008). Further, TSA data are also available for Canada for 2010 and New Zealand for 2009, where the tourism industry directly employed 9.2% and 4.9% of total employment, respectively (Statistics Canada, 2011; Statistics New Zealand, 2009).

In countries that base their economies strongly on tourism, this industry might directly and indirectly employ more than half of the total labour force. For example, according to the WTTC data, which are approximate simulations of TSA accounts, tourism total employment in Aruba represented 92.2%, in Macau 68.2%, and in Seychelles 56.4% of total employment in these countries in 2010 (Statistics Canada, 2011). Although these data might be overestimated, it is evident that tourism related jobs represent an important or main source of employment for some countries.

The significance of tourism on employment depends on the scope and type of tourism. Developing countries view tourism as a generator of jobs for less skilled people and as a source of salaries for small enterprises and craftspeople. Tourism is also relatively labour intensive, especially in the initial stages of development. Automation and use of robots have a very limited scope of application in the tourism sector. As it develops, the tourist industry may become increasingly more capital intensive, but development — to a large extent — depends on the type of tourism. Some cite Morocco as an example of labour-intensive tourism (Bull, 1995) as opposed to London, where development is capital intensive, and Hawaii, where it is spatially intensive.

In general, modern industrial and post-industrial countries increase labour productivity through automation of production. Production increases by a reduction or at least less than proportionate increase in staff numbers with regard to capital. Primary and secondary production sectors employ increasingly fewer people in absolute and relative terms, posing a constant threat of unemployment for workers. Highly-developed economies, to a large extent, solve such problems by increasing employment in the tertiary and quaternary sectors.

Tourism is a part of the tertiary service economy, as well as a heavy direct and indirect user of the quaternary activities such as ICT, culture, education and governmental actions. Thus, tourism can mitigate unemployment resulting from the demise of traditional food production or raw material extraction sectors and the shrinking job offerings in manufacturing resulting from technological progress and the reallocation of production to countries with cheaper labour.

Tourism can also contribute to the regional development of less developed areas, where the anti-depopulation and anti-migration functions of tourism come to the fore. If people from less developed regions can find a job closer to their home, they will not migrate. Thus, regions that provide jobs remain populated and become more attractive to young families. The employment function is therefore often discussed in close correlation with regional development.

Many criticise the idealistic view that tourism development has only positive effects on employment. In certain societies, jobs in the service industry are characterised as 'serving', and are therefore less desirable. Employment in tourism may also be less desirable, because it requires working on Sundays and holidays, when most other people are not required to work.

At the same time, the capacity of tourism to generate permanent jobs is highly restricted. Mainly due to the seasonal character of the tourism industry, many jobs in tourism are part-time or seasonal by nature. For example, a large percentage of tourism-related jobs in the Greek and Italian accommodation sectors are temporary. In Greece, 41% of tourism-related jobs were temporary in 2008, while only 11% of Greece's total jobs were temporary in the same year. In Italy, 36% of tourist jobs were temporary and 13% of total jobs were temporary (Demunter, 2008). In addition, the tourism sector appears to offer less stable permanent jobs than the rest of the labour market. On average, EU employees stay with the same employer for 10 years. In the hotel and restaurant sectors, however, employees stay on average only somewhat more than five years (Demunter, 2008).

An additional problem is that a lack of domestic workforce or local people unprepared to work in tourism can lead to labour importation. That can create a lot of tension at the tourist destination. Canada reports that immigrants held 22.7% of tourism jobs in 2010, mainly lower qualification jobs in the food and beverage services industry. They earn lower wages per hour on average than others in their sectors, yet they work longer hours than non-immigrants (Statistics Canada, 2011). Opposite arguments may arise in developing countries, where it is often said of tourism that the local

people get only blue-collar jobs and jobs requiring lower qualifications, while better paying jobs and managerial positions go to foreigners. This problem is strongly linked to the ownership structure of the tourism industry and to a lack of adequate know-how and skills in those countries. Yet, in general, tourism employment, especially in the accommodation sector, employs relatively more persons with a lower level of education. The more development the other sectors of the economy achieve, the higher will be the discrepancy in education level in the tourism industry versus the average in the economy.

A more in-depth criticism of the concept concerning the benefits of tourism employment opportunities claims that employment in tourism can drain the workforce from other activities. The criticism is based on two different arguments. The first is that jobs in tourism compel locals to abandon traditional activities, notably agriculture. In this case, a country must import more agricultural products to make up for the lack of agricultural labour. The second argument is that seasonal work may be more attractive to certain people, and other activities that could otherwise take root in an area would not find enough people to do the work (Mathieson and Wall, 1992). Those other activities may have the capacity to bring higher value to their products and services than tourism, and so this lack results in a negative overall economic effect. Of course, this case is only a hypothetical dilemma for any country — the real issue is: what development alternatives actually exist at a given time for a certain country? Indeed, most tourist regions with a tourism vocation provide no full employment (Vanhove, 2011); thus, this opportunity costs argument has no relevance.

In general, tourism employment potential is often named as a tourism absorption function that relates to the tourism industry's potential to absorb the area's unemployed working force. If tourism jobs are not taken by students and pensioners who are not a part of the active population, the unemployment rate will be reduced.

Nevertheless, it is evident that tourism development brings additional jobs. In Europe, tourism regions tend to have lower unemployment rates than the national average (Demunter, 2008). This is more typical for less-seasonal destinations and less typical for more seasonal destinations, which may mean that more advanced destinations with more developed tourism products (e.g., developed countries) could draw relatively more on this tourism potential than less advanced destinations. Yet, on the other hand, absorption function and tourist destination catalyse the local labour market and offer new jobs that will increase the job opportunities in the destination.

28.4.4. *Tourism brings economic growth on the account of environmental goods valuation*

Tourism has the ability to utilise environmental goods and consequently increase the GDP in a destination country, which in turn decrease the value of capital coefficient and thus positively influence the economic growth rate. The theory of tourism valuation, also known as tourism conversion of environmental goods to economic goods, states that environmental goods may take on value by use in tourism. These goods, even free environmental goods in some cases, from the standpoint of existing market economy order, may be converted into premium prices if brought to the tourism market and 'sold'. In regard to tourism debate, environmental goods refer to different natural and also social or cultural resources that have potential or optional value, not derived from their current use when tourism development has not yet begun. If they enter the tourism production process, they become part of the tourist supply, and the valuation process commences.

This valuation ability is very much tourism specific and can be explained by the division of tourist supply into primary and secondary (Kaspar, 1991; Marriotti, 1938; Planina, 1966). The primary tourist supply encompasses resources given or inherited by a destination, such as natural goods (e.g., the Grand Canyon) and anthropogenic or man-made inherited goods (e.g., the Egyptian pyramids) or cultural heritage, such as customs. The secondary tourist supply encompasses built tourism supply which can always be fabricated (e.g., roads, hotels, airports, built attractions etc.). Inherited tourist attractions (natural, cultural and social) are free or public goods which as such are not traded and have no direct price and thus by definition do not form any supply. For example, before the tourism development process starts, beautiful beaches, pleasant climate or friendliness of local people and beauty of local architecture do not appear on the tourism market as such and have no price. Only with the construction of secondary tourist supply can the process of their valuation and transformation into primary tourism supply take place. They become a part of tourism product, as fabricated tourist products and services get a higher demand and thus hedonic price on the tourist market because of the presence of such attractions. The valuation is indirect and reflected in higher direct prices of tourist products and services. Attractions are transformed into valuation value (VV) by 'selling' them on the tourist market.[4]

[4]The VV is formed within the price of tourist products and services due to enhanced tourist demand resulting from the presence of a particular attraction. Thus, the

It has been proven that tourists are prepared to pay a premium for both the presence and unspoiled state of, for example, natural attractions. British 'green' tourists, for instance, would be willing to pay a premium of 509 pounds for a 14-day holiday in North Queensland if the environment were unspoiled and if the authorities maintained the area extremely well (Huybers and Bennett, 2000).

Undoubtedly, the strongest advantage of the development of tourism is that it valorises natural, cultural and social attractions which would otherwise not be an object of demand and could not bring an income to a country. It should be noted that this public or free goods based theory ignores that in the case of private property ownership, an environmental good may have a value also before tourism development starts. For example, the presence of attractive beaches, results in higher prices for beside land. This does not reduce the valuation theory, as in such a case, tourism development will additionally utilise these goods and the valorisation value will increase. Then, the second advantage lies in the method of 'consumption' and use of such goods. Conversion theory proponents claim that 'sale' of natural, cultural and social attractions through tourism does not reduce national wealth. A different case is export of commodity materials and minerals which reduces their stock and thus decreases national wealth. 'Export' of attractions through tourism can even enhance the value of attractions. The fact that some visitors have already seen and encountered certain attractions can increase their attractiveness to other potential visitors, thus enhancing their value (Ritchie and Crouch, 1993). The majority of such goods (e.g., natural attractions) are virtually never used up while in, for example, cultural goods, the period of use can be very long (Planina and Mihalič, 2002).

As natural goods are often available to all (public goods), have no price and are free of charge, the VV from the presence of such goods is taken by vendors of tourist products and services. If beaches, beautiful landscape or waters have no owner, the premium value is retained by domestic or foreign companies. Especially in the latter case, when a foreign or multinational corporation takes VV and transfers it out of the economy of the destination country, national income will be lower and a foreign country will make money from attractions in the destination country. In such a case, when national capital is controlled by foreign capital, we speak of neocolonialism. Neo-colonialism through tourism on the one hand resembles

price (P) can therefore be expressed as follows: the sum of costs (C), profits (PF) and valuation values (VV):

colonial exploitation of commodity wealth of former colonies and is on the other hand much less visible. International tourism can enable leakages of VV from the country so that the related tourist expenditure never even comes to the destination country because it remains on accounts of foreign and multinational corporations. For example, for package holidays organised by a foreign tourist-generating travel agent, tourists pay directly to the travel agent. Only payments of travel agents to local suppliers enter the destination, which can be quite modest if we take into account that large travel agents have substantial bargaining power. The results are twofold. First, the effect of (relatively lower) tourist expenditure on the local economy is smaller. Second, the premium value which should in theory go to the destination goes to a foreign company.

The critics of the valuation or conversion impact also cite environmental damage resulting from the development of tourism. They note negative externalities of the development of tourism shown in visual destruction of the landscape due to construction of tourist facilities, water pollution and other forms of degradation of the environment, for example, noise, crowdedness, destruction of flora and fauna and negative effects on the local culture and society. Although economic success of tourist companies depends on the quality of the destination's environment, the companies are not willing to cover the costs of maintaining this quality. Thus, the cost of preventing or remedying the environmental damage resulting from the development of tourism falls to the state. Polluted air, due to tourism traffic, for example, represents social costs that result from the public treatment of polluted air connected illness of local inhabitants. The situation worsens, from the aspect of the national economy, if the development of tourism is based on foreign capital; no owner means no custodian. The quality of the attractions therefore decreases, reducing their attraction to tourism. Consequently, the prices of tourist products and services in degraded destinations fall, and the VV may even turn negative. Tourists are no longer prepared to pay for polluted environments and will visit such destinations only if the price is lower. A positive VV will thus turn negative. A solution would be for destination countries to determine the owner of tourist attractions, thereby enabling their effective inclusion in economic processes as economic goods. In addition to environmental damage based criticism of tourism development it should be noted, that other alternative development options might also bring even stronger negative environmental impacts to the region or country.

Another potential problem is that developing countries have a lower capacity or ability to add value in the form of a premium to their products.

It may result from lack of knowledge, inadequate promotion, poor access to tourist-generating markets, unfamiliarity with destinations, undeveloped brands etc. At the same time, the VV may be 'eaten up' by expensive production costs of products and services. In both cases, the VV from tourist attractions is lost to the host country. On the other hand, the earned VV can bring additional funds to the economy which can be spent to protect the environment and plan for long-term tourist development.

In addition to that, VV might be eroded by other external factors that might influence tourism visitation and prices, such as terrorism, political instability of diseases. There are many examples that destinations have been forced to reduce prices in order to increase competitiveness and attract visitors in a case of unfavourable event or circumstances. For example, in 1997 terrorist attack on Luxor Hacepsut Temple put Egypt on a tourism blacklist and in order to compensate the tragic event, country has cancelled all airport taxes, costs for entry visas, prices for inland flights have dropped to a half, five stars hotels have offered their service at the three stars price levels. Similarly in 2011, Egypt is slowly beginning to recover its stability after the disruption in the country from political protests and demonstrations in 2010. Travel agencies are suggesting to holidaymakers that they make the most of the cheap airfares to Egypt while these last. 'This is an opportunity for people to experience luxury resorts for less than they would ordinarily pay' (Personal Property Advisor, 2011, p. 1).

From the above, it is clear that natural and other attractions can be seen as a production factor. The theory of international trade (Heckcher–Ohlin) states that labour and capital as production factors are the possible sources of comparative advantage. According to this theory, industrialised countries are capable of producing industrial products (capital-intensive production) with lower cost of capital, than developing countries, and the latter have a comparative advantage in services, e.g., tourism. They are capable of producing tourist services (labour-intensive production) in a more cost-effective manner compared to industrialised countries. How much they will profit from this division of production depends on the ratio between import and export prices, i.e., the prices agreed upon the exchange of tourist services for industrial goods. The expanded theory of comparative advantages includes natural attractiveness as a production factor. Countries with rich natural attractions should develop tourism and 'export' products based on natural comparative advantages, thus trading 'island beaches for industrial products' (Smeral, 1994, p. 499).

The traditional theory of comparative advantage can be partly criticised as it assumes that tourism is a labour-intensive activity. Some forms

of tourism are capital-intensive (e.g., urban or cultural tourism, amusement parks, casinos, transportation, ICT based services etc.) and require a relatively large amount of capital although also more labour than, for example, manufacturing, which can be automated or use robots. Therefore, developed countries may have comparative advantages in the development of certain forms of tourism. An additional comparative advantage may be in proximity to the tourist-generating markets if it represents a force of attraction for tourism and enhances tourist demand, thus enabling premium prices.

The expanded theory of comparative advantages has been in fact partly already negated with the contemporary view of tourism discussed under the subsection on the compensation function. Natural attractions can be a comparative advantage for the development of certain forms of tourism, e.g., the sea, sun and beach holiday tourism or modern nature-based tourism forms. Their presence is not necessary in the case of the already mentioned new urban forms of tourism which blossomed in the 20th century, for example, cultural or entertainment tourism. These forms primarily draw on locations as they are incurred in developed areas within the vicinity of a high concentration of people and a developed infrastructure. Examples include casino and entertainment tourism in Macao, located in the vicinity of Hong Kong and mainland China, the world's largest and most visited recreational Walt Disney resorts, such as the Walt Disney World Resort in Orlando, Florida or the Tokyo Disney Resort just east of Tokyo, or Six Flags México, an amusement park located at the southern edge of Mexico City.

In total, it is not easy to change comparative advantage related to natural and socio-cultural attractions into competitive advantage and added value. There is a high potential for tourism to contribute to general development through valorisation impact, yet developing countries may have lower potential to utilise its full value. Nevertheless, the potential of exceptional natural sites or architectural and artistic resources known all over the world gives the country a monopoly or a near monopoly (Vellas and Becherel, 1995) and thus a solid base for tourism and general development.

28.5. Conclusion

This chapter discussed tourism economic developmental potential and is correspondingly based on the economic definition of development, which means economic growth and structural changes in the economy. This one economic discipline based approach only does not deny that development is a broad qualitative concept that involves not only economic, yet also social, cultural, political and environmental changes and that a one discipline-based

approach to study can be challenged by a need to develop a holistic development research that takes into account all parts of development and their mutual correlations at once. Yet, the strong theoretical framework for a holistic tourism developmental theory does not yet exist and tourism knowledge is still very fragmented and discipline-based. Thus this chapter uses an economic discipline-based approach to study the economic dimension of tourism development only. A reductionist rather than holistic approach may not give us the whole picture, but enables us to use the theoretical and methodological framework, developed by the economic discipline and help us to understand one part of tourism development. In addition, in the past decades, classical or traditional tourism economics has re-evaluated its scope and broaden its theories and methodology, trying to capture more than just isolated neoclassical economic growth based arguments of tourism development. Consequently, economics based developmental debate does not limit itself on narrow economic growth only, it also discusses the structural changes, equitable distribution of benefits and the role of environmental goods in tourism development.

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Chapter 29

TOURISM DEVELOPMENT, CONFLICTS AND SUSTAINABILITY: THE CASE OF GOA

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University of Aveiro, Portugal

Abstract: Tourism as an economic activity in Goa hardly existed before the 1960s. There were limited tourist facilities, either in the form of accommodation or other amenities. After its independence, the government initiated a programme for rapid expansion of accommodation facilities and related tourist services, and beach tourism was adopted as a key sector for Goa's development. As a result, Goa became a major international tourist destination. The tourism industry has contributed significantly to the economic development of the territory, but also to the transformation of Goa's coastal areas. This chapter discusses the development of Goa as a tourist destination, examining the economic, socio-cultural and environmental impacts of such tourism development.

Keywords: Development; Goa; impacts; public policy; sustainability; tourism.

29.1. Introduction

Tourism is one of the fastest growing sectors, playing an important role in the global economy and contributing positively to the development of various nations. However, its economic contribution varies according to the development level of the country, tending to be more important in emerging economies, which benefit from higher growth rates and locational advantages (Keller, 1999). Mathieson and Wall (1982) also suggest that the effects of tourism vary with the nature and level of economic development of the destination, as well as the type of tourists and investments. They argue that developing countries suffer from several problems, hence tourism tends to cause more significant economic, social, cultural and environmental effects in these countries, both positive and negative. Therefore, tourism in developed countries tends to be regarded as a social activity with economic consequences, while in developing countries it is essentially an economic activity with social consequences (Jenkins, 1980).

Goa, a relatively small state located in the western coast of India, receives annually a large number of visitors, both domestic and international, who are drawn by its beaches, landscapes, festivals, monuments and the hospitality of its people. Tourism, as an economic activity, began to develop only in the 1960s, after the independence of the territory from the Portuguese administration. The Government of India, aware of the fact that tourism can generate substantial economic and social benefits, began pursuing a strategy aimed at increasing the country's share in the world tourism revenues. Similarly, in the State of Goa, tourism began to dominate the public discourse in terms of development of the territory. In the late 1960s, tourism in Goa represented around 2% of the total international tourist arrivals to India, while, at the beginning of this century, its share accounted for more than 11% (Government of Goa, 2008). Notwithstanding the economic benefits that accompanied this remarkable growth, tourism has led to other aspects that have clearly contributed to drastic changes in the social and cultural fabric of Goa, and in its natural environment. This chapter seeks to present and discuss the process of development of Goa as a tourism destination, by examining the socio-cultural, economic and environmental impacts of this activity.

29.2. Impacts of Tourism Development

Since tourism is an activity that involves the movement of consumers to the local of production, there are a number of aspects that must be taken into account in the development of the sector. Mathieson and Wall (1982), in their definition of tourism, introduced the consequential element that results from the interaction between the dynamic (demand) and the static (supply) elements, consisting in the impacts generated by tourism at the environmental, economic and socio-cultural levels. The impacts of tourism refer to the changes, positive or negative, caused by the tourism development process at destinations. This activity, therefore, acts as an agent of change. The intensity of these changes depends on the nature of destinations, but also on the volume and type of tourists who travel to those destinations (Mathieson and Wall, 1982; Mathieson and Wall, 2006). Table 29.1 summarises the main impacts (economic socio-cultural and environmental) of tourism development.

In the literature, several studies have emerged intending to provide formal models to explain the process of tourism development, thereby creating frameworks which reflect the changes caused by tourism. It is the case of the model of Doxey (1975), which shows the evolution of the relationships

Table 29.1. Impacts of tourism.

Positive impacts	Negative impacts
Economic	
Foreign exchange earnings	Increased local cost of living and land costs
Funds raised from taxes and fees	Seasonality of income and employment
Diversification of local employment and income	Inflation and speculation
Attraction of investment for local infrastructures/services	Reduction of traditional activities
Employment opportunities in tourism-support industries	Dependency on tourism activities
Development of export markets for local products	Opportunity costs
Improvement of standards of living	Negative changes in the economic structure
	Increase in imports
	Dependence on foreign capital
Socio-cultural	
Exposure to new information and lifestyles	Child labour, paedophilia, prostitution, crime, corruption, drugs
Increased cultural and professional levels of the local population	Religious conflicts
Positive changes in the social structure	Cultural shock and arrogance
Opportunity for cross-cultural intermingling	Neo-colonialism
Maintenance of traditional knowledge/products	Disruption of culture
Preservation and projection of the awareness of Culture, history and heritage	Alienation of the local community
Ethnic and cultural pride	Demonstration effect
	Influx of seasonal workers
	Conflicts over the use of resources
	Vulgarisation of cultural manifestations
	Decharacterisation of crafts
	Destruction of historical heritage
Environmental	
Developing preservation plans and programs for natural areas	Degradation of the environment, historical sites and monuments
Incentives/funds for resource management	Destruction of fauna and flora
Improvement of the environmental quality	Pollution and inadequate waste management
Research and environmental education	Excessive water consumption
	Soil erosion due to overexploitation and unsuitable infrastructure development
	Congestion and bottlenecks due to haphazard construction growth
	Construction on fragile land
	Changes in land use and cover

Source: Based on Inskeep (1991); Leiper (2004); Mathieson and Wall (1982); Mill (1990); Wall and Mathieson (2006).

between tourists and local residents, thus identifying the level of socio-cultural impacts that may occur at the destination. The model of Smith (1989) also portrays the evolution of demand in a particular location and its respective degree of impact, while Miossec (1976) outlines the temporal and spatial evolution of a tourist area, emphasising the changes in the supply of tourism equipment and infrastructure, and in the behaviour and attitudes of tourists, policy makers and local communities. The models of Butler (1980) and Burton (1995) also argue that destinations tend to go through different stages of development. Each phase is defined according to the number of visitors, and the changes occurred over time in the tourism industry and in its connection with the local communities.

Given that tourism can produce several negative impacts in the destinations, it is essential for the existence of planning mechanisms and a clear policy for the sector. The development of plans that incorporate a vision of sustainability is also crucial, and should take into account planning indicators, such as the carrying capacity, limits to acceptable change (LAC), environmental impact assessment (EIA), among others. Tourism, if not planned, can destroy the resources on which it depends. Therefore, the challenge is to avoid a conflictory relation and try to maintain a symbiotic one.

29.3. Brief Characterisation of Goa

Goa forms the 25th state of the Union of India, being conferred statehood in 1987, and is the smallest one, encompassing an area of 3,702 sq. km. It is located on the west coast of India in the Konkan region, between the Western Ghats and the Arabian Sea, and is bounded by the State of Maharashtra in the north and the State of Karnataka in the east and south (Fig. 29.1). It has a coastline of 106 km, of which 65 km consist of sandy beaches.

The State comprises three administrative levels: the district, the *taluka* and the villages. It has two districts, North Goa and South Goa, which are further divided into eleven *talukas* — Pernem, Bardez, Bicholim, Tiswadi, Ponda and Satari in North Goa; and Mormugao, Salcete, Quepem, Sanguem and Canacona in South Goa (Fig. 29.2). The State's capital is Panaji (Tiswadi), which is also the headquarters of the North Goa district, whilst Margao (Salcete) is the headquarters of the south district. Other major cities include Vasco da Gama (Mormugao) and Mapusa (Bardez).

According to the 2001 Census of India, Goa has a population of 1.34 million. It is a melting pot of religions, being Hindu (65.9%), Christian (26.7%) and Islamic (6.8%) the main religious communities. The socio-cultural diversity is also represented in the number of spoken languages,

Fig. 29.1. Location of Goa.

Source: Own construction.

being the most widely used languages the Konkani, which is the official language of Goa, Marathi, Hindi and English, which are used for official, literary and educational purposes. The use of Portuguese had fast declined following the end of the Portuguese administration.

Goa was ruled by the Portuguese for four centuries and the first *taluka* to be established was Tiswadi in 1519, followed by Bardez, Salcete and Mormugao. These four *talukas* comprise the territory designated as Old Conquests, whilst the seven remaining *talukas* are known as New Conquests. The different stages of the Portuguese colonisation paved the way to the

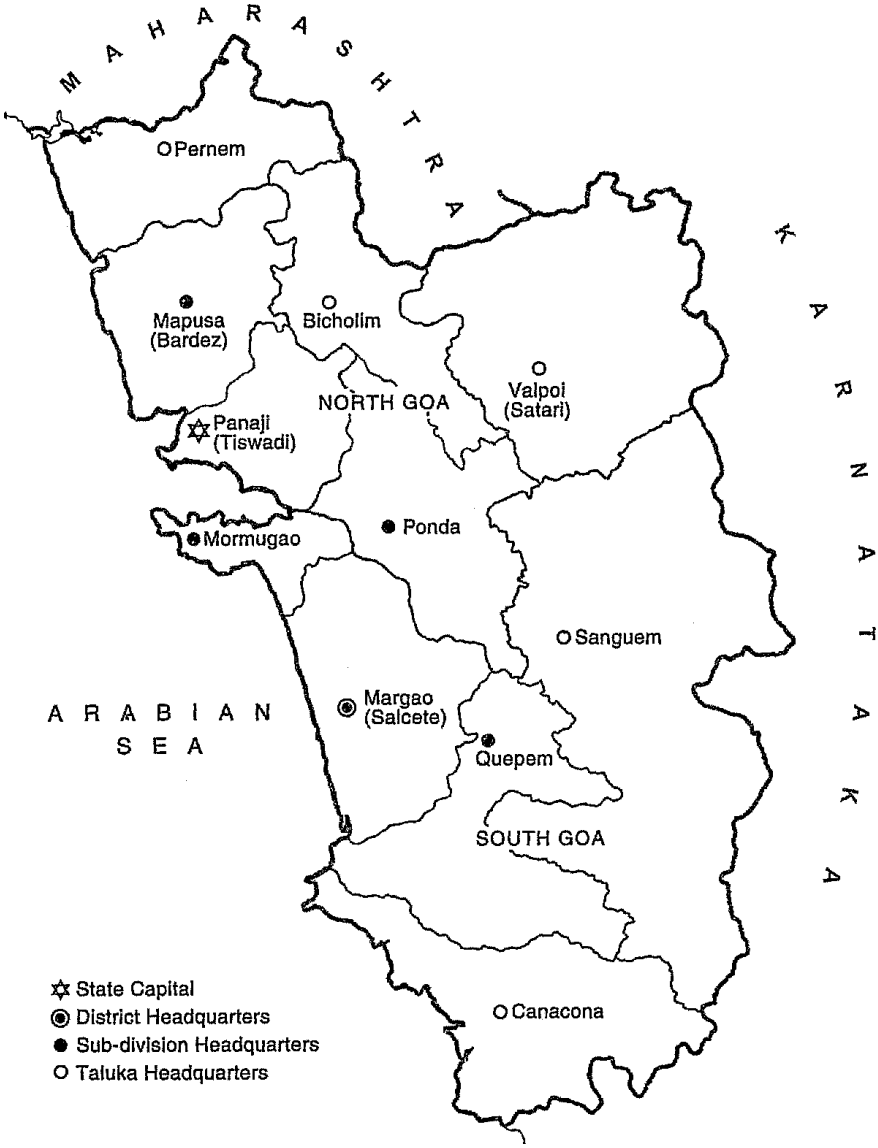

Fig. 29.2. Administrative map of Goa.

Source: Angle (2001).

territory's pattern of growth, and subsequently the post liberation period reinforced the same development pattern. The coastal *talukas* have a higher level of accessibility and infrastructural development compared to the inland *talukas*. The same geographical concentration pattern can be found in terms of both tourist supply and demand indicators.

The beaches of Goa constitute the main attraction of the State. For tourists seeking other nature-based experiences, the territory also offers scenic landscapes, lakes, rivers and waterfalls. Besides its outstanding natural resources, Goa possesses a rich cultural heritage, which resulted from the abiding contact with the Latin culture. The marks of the Portuguese are present, not only in the numerous churches and forts scattered all over the State and in the characteristic architectural style and cuisine, but also in the way of living of the Goan people. The territory has also distinctive Hindu temples, mainly concentrated in the Ponda *taluka*. The temperate climate and the warm hospitality of the local people complement the array of tourism assets.

29.4. Methodology

This paper results from an empirical study conducted in Goa. Preliminary research was carried out between January and March 2005, relying mainly on participant observation and informal interviews with tourists (both foreign and non-Goan Indian tourists), local residents, government officials and non-governmental organisations (NGOs). These informal conversations yielded different points of view on tourism development in Goa. Unstructured interviews were also conducted to Portuguese representations, which were very helpful in providing useful information at the initial stage of the research. Secondary data was also a valuable source of information, namely official statistics, policy documents and reports from the local and national Press, in addition to a fairly amount of interesting material written by Goan authors, official entities and NGOs.

This preliminary stage was followed by research conducted in subsequent years (January to March 2006 and March to April 2007), aiming to learn more about tourism and the hospitality industry in Goa. The use of multi-methods (Fig. 29.3) has resulted in a clearer understanding of the nature and extent of tourism development and its impacts, as well as the structure of the hotel sector, which has been blamed for major changes occurring in the coastal areas. Several semi-structured interviews were conducted to public bodies (Goa Tourism Department (GTDT) and Goa Tourism Development Corporation (GTDC), associations (Travel and Tourism Association of Goa (TTAG) and Goa Chamber of Commerce and Industry (GCCI) and Portuguese representations (Consulate in Goa and Embassy in New Delhi). Additionally, an interview-questionnaire was used to survey the owners and/or managers of mid-range and upscale accommodation establishments, constituted by all heritage and star rated hotels, ranging from three

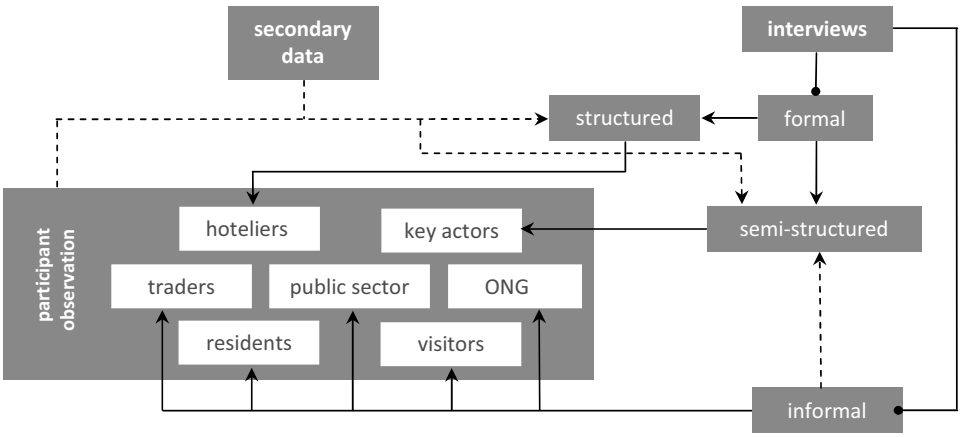

Fig. 29.3. Methods and techniques used in the empirical study in Goa.

Source: Own construction.

star to five star deluxe categories (40 establishments). All establishments agreed to participate in the study, resulting in a 100% response rate.

29.5. The Process of Tourism Development in Goa

29.5.1. *Tourism administration and policies*

Before the Second World War, tourism in Goa existed in a very small scale. The demand was mainly composed of Goan emigrants and tourists (Indians and foreigners), who used to visit the territory on holidays and stay in modest hotels, rented rooms or with friends and relatives (former officer of the Centre of Information and Tourism, personal communication, February 23, 2005). The main destinations were Calangute (Bardez), Panaji (Tiswadi) and Colva (Salcete).

Goa has always exerted a strong pull on neighbouring states, even before the independence from the Portuguese administration. However, the inflow of Indian tourists had an abrupt ending between 1958 and 1961, due to the blockage introduced by the Government of India, in order to force the Portuguese to leave the territory (former officer of the Centre of Information and Tourism, personal communication, February 23, 2005). This measure, however, did not produce any political change; instead, it seriously affected tourism in Goa.

In 1959, the Central Government in Portugal enacted a decree creating, in all Portuguese overseas provinces, separate directorates of tourism under the name of *Centro de Informação e Turismo* (Centre of Information

and Tourism) (former officer of the Centre of Information and Tourism, personal communication, February 23, 2005). As soon as this entity was created in Goa, at the beginning of 1960, a comprehensive plan was prepared in order to 'beautify' some beaches (former officer of the Centre of Information and Tourism, personal communication, February 23, 2005). Despite these advances, the activities of the Centre of Information and Tourism were constrained due to the closure of the border between Goa and India, and the limited tourism flows.

Soon after the Liberation, the Government of India initiated a series of initiatives to encourage tourism development. One of them was the division of Centre of Information and Tourism in two separate departments: the Department of Information and Publicity, and the Department of Tourism (former officer of the Centre of Information and Tourism, personal communication, February 23, 2005). Under the direction of the Department of Tourism, plan schemes were formulated to promote the development of tourism. Simultaneously, substantial investments were injected, by both the local and the central governments, in order to provide facilities for accommodation, transport and recreation, as well as the development of the beaches.

During the second half of 1960, there were essentially developed accommodation structures to meet the needs of low-income tourists in areas identified by the Department of Tourism as being conducive to the development of the sector. The private sector was also encouraged to build hotels in different parts of the territory in order to reach other market segments. The total number of accommodation establishments in the territory increased from 25 (453 beds) in 1961 to 49 (1,048 beds) in 1964 (TECS, 1975, 1976). This expansion of accommodation, transport and recreation facilities, as well as other services, led to a boom of tourism activities in the territory.

In 1967, there were 1,350 beds in hotels and boarding houses. However, most of them concerned tourist accommodation of lower categories, with high quality hotels only corresponding to 320 beds (Government of India, 1973). This quantity was clearly unsatisfactory since the number of tourists had increased considerably and the number of beds had almost remained static.

In 1982, the Government created the Goa Tourism Development Corporation (GTDC), an autonomous body designed to deal with operations in the tourism sector, including providing budget accommodation. With the emergence of GTDC, there was a clear division of tourism related activities: whereas the Department of Tourism had been entrusted with the responsibility of planning and promotion, the GTDC had been designated to deal with the commercial aspects of the tourism industry.

In 1987, the Government of Goa, through its Town and Country Planning Department, prepared a draft master plan for tourism development (Government of Goa, 1987), as a result of the boom in tourist arrivals experienced in the mid 1980s. This plan, however, failed to gain the support of the population, given that some measures violated policy decisions of the Government of India regarding the conservation of beaches, and soon it became the target of strong opposition from NGOs and local groups (see Alvares, 2002). Opponents of the plan argued that the impacts of tourism development on Goan socio-economic structure had not been properly researched. It was also pointed out that the plan was only intended to promote beach tourism, with the sole aim of attracting Western tourists and the elite of the Indian society. As a result, the Government of Goa decided to withdraw the plan.

In 1989, the State government, with the support from the World Tourism Organisation and the United Nations Development Program, conducted a study on tourism carrying capacity in Goa in order to determine the threshold of development (UNWTO, 1994; UNWTO/UNDP, 1989). Despite this attempt to provide some insights on the development of tourism and its impacts, the study was also criticised. It had limited its scope only to the coastal belt, assuming this to be the primary site of ongoing and future development and thus, overlooked the potential of inland areas for tourism activities (CES, 2001).

In April 2000, as a result of the positive impacts of tourism on the economic structure, the Government of Goa declared this sector as an industry, being the first State in India to grant such status to the tourism sector. Subsequently, a new master plan for tourism development was prepared (see CES, 2001), and the Government adopted a tourism policy (see Government of Goa, 2001). The new master plan called for the diversion of tourism flows from coastal areas to the vast inland region, estimating a total needed capacity of 62,776 beds by 2021.This projection also earned the opposition of NGOs, who argued that a discussion of the environmental demands associated with each of these beds was fairly nonexistent in the plan. The new tourism policy has recognised the central role of the private sector in tourism development, with emphasis given to the diversification and value-addition of the tourism product. It also has mentioned the need to ensure social, cultural and environmental sustainability, as well as the involvement of the local community in the tourism sector. Nonetheless, and despite being more sensitive to local concerns, this new tourism policy did not go far enough to address the concerns for a sustainable and quality coastal tourism.

In 2003, the Government approved the Goa Industrial Policy, identifying some forms of tourism as a thrust area for focused attention, including heritage tourism, adventure tourism, ecotourism and event tourism. More recently, the Regional Plan for Goa 2021 (see Government of Goa, 2008) advocated the need for a new state-level master plan for the development of Goa, based on a sustainable vision. It also referred the need to change the current development model, focused on beach tourism, to the development eco-friendly up-scale projects, thus demonstrating that the vision of the government is gradually beginning to change.

29.5.2. *The growth of the tourism sector*

Before the Liberation, tourism flows were unimportant with an almost negligible ratio to the local population. There was clearly no formalised effort to develop tourism in this period. It only started to develop after the independence of the territory from the Portuguese administration, when Goa began to attract the attention of international tourists. The beaches become a haven for Western hippies, who settled there to laze and to party, turning Goa in one of the main stops of the 'hippy circuit' in Asia, since 'it was cheap, beautiful, had a good climate, good food, available drugs and few hassles' (Newman, 2001, p. 214). According to Harding and Thomas (2003), modern tourism in Goa began with the 'flower power' of the 1960s and 1970s. However, over the years, with the increasing number of these travellers, Goa began to gain bad reputation due to the abundance of drugs, nudism and the endless parties, which naturally upset the local population.

As there were few or no accommodation establishments, these tourists built shelters, made of palm leaves, on the beaches or rented rooms in private homes (former officer of the Centre of Information and Tourism, personal communication, February 23, 2005). Shortly, hotels and beach shacks began to proliferate in the most popular areas, since local people began to realise that they could benefit from the presence of these visitors.

Although the 'hippy scene' clearly characterise the tourism demand during this period, there were other types of foreign tourists visiting Goa, as well as a large number of Indian tourists, who began to visit the territory to see the 'infamous debauched Westerners' (Harding and Thomas, 2003, p. 15). The number of foreign tourists was very low compared to the number of domestic tourists.

It was not until the mid-1970s that the Government of Goa realised the economic potential of the tourism sector. With the support of the Central Government, which began to encourage direct charters to beach resort

areas (Mahajan, 1992), Goa started to be heavily promoted as a tourism destination. The local government thus responded to the 'invasion' of hippy tourists, with the introduction of charter flights to attract higher-income tourists. Since then, the growth of tourism has been rapid, experiencing an increase in the number of middle and upper-class tourists, both domestic and international.

Goa was already an established backpacker destination when it introduced, in 1985, the first regular charter flight from Germany. Charter flights have brought a new type of tourists, short-staying but high-spending package tourists, who triggered a construction boom of tourism infrastructures and facilities to meet their needs. Five-star luxury beach resorts began to appear in some of Goa's deserted beaches. These resorts, composed of extensive gardens, swimming pools and golf courses, were owned by non-Goan investors, who were generally not sensitive to the impacts produced by these facilities on water resources, contributing little to the local economy (Alvares, 2002). For this reason, protest movements against tourism began to emerge, raising issues such as pollution, cultural disruption, social exploitation and uncontrolled consumption of scarce resources (see Sen, 1998, 1999).

It was at this time that the profile of the average tourist in Goa began to change. The areas initially frequented by hippies, were gradually replaced by young Western neo-hippies, and then by package international tourists and also domestic tourists. For example, Calangute is today a mix of a mass international charter resort area and a destination of crowds of domestic Indian visitors (although on a smaller scale), with little evidence of non-tourist related economic activities or the village's original character (McCabe and Stocks, 1998). This rapid development began to spread to the neighbouring beaches, erasing existing borders between them; instead, there is only a continuous stretch of beach, as a result of the massive development of tourist facilities.

In the 1990s, and especially in the early 2000s, the tourism sector grew rapidly. This growth has placed an enormous pressure on resources and infrastructures, which had led to major concerns about its impacts on the environment and local communities, and to a debate over what development strategy to follow. It should be noted, however, that the growth of tourism in Goa has not been homogeneous. There are differences in the scale, type and stage of development in the different parts of the territory, as well as in market segments that they attract. In some areas, different types of tourists compete for the same resources.

The government's efforts to promote actively the development of tourism were rewarded. Between 1961 and 2010, total tourist arrivals grew at an

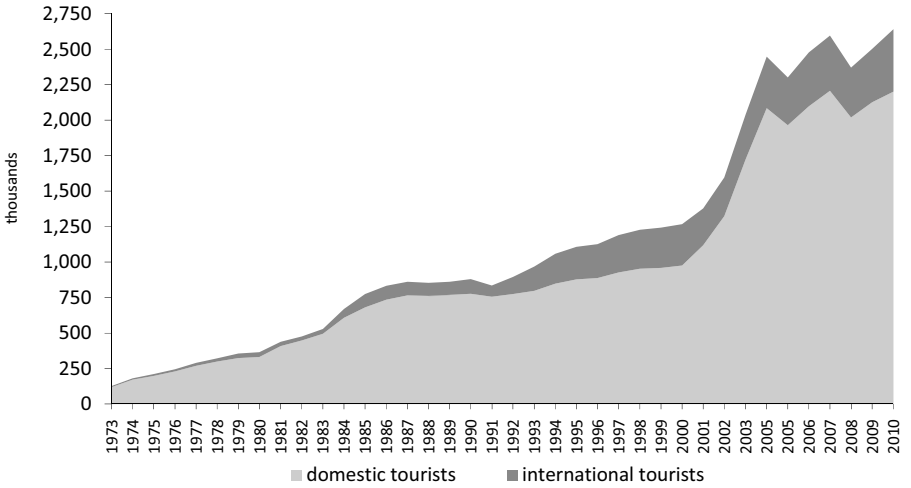

Fig. 29.4. Number of tourist arrivals in Goa.

Source: Government of Goa (1987, 2008, 2011) and TECS (1976).

average annual rate of 6.4%, rising from 127,800 to 2.6 million tourists, representing a 20-fold increase. This rapid growth can be observed at both national and international tourist flows (Fig. 29.4).

In 1967, out of the total of 60,665 tourists arriving in Goa, 93.3% of total visitors were domestic and 6.7% were foreigners (Government of India, 1973). Five decades later, the share of international arrivals more than doubled (16.7%), but foreign tourists still represent a small part of the total tourism flows. Nonetheless, for political and economic reasons, these are the main target market for policy makers.

The share of foreign tourists has increased considerably since the mid-1980s due to the emergence and expansion of charter flights. More than half of these flights arrive between November and January. For this reason, international tourists visiting Goa show a seasonal pattern more pronounced than domestic tourists, evidencing a preference for the period between October and March. In 2007, tourists arriving during this period accounted for 87% of total foreign visitors to the territory; of these, more than 60% were concentrated in the months of November, December and January (Government of Goa, 2008). In 1973, it was visible that a less accentuated concentration of visitors; the same six-month period represented less than 70% of international arrivals (TECS, 1976).

In addition to an uneven seasonal distribution, tourism flows also show a geographical concentration in a few municipalities (Government of

Goa, 2008). Tiswadi, Salcete, Bardez and Mormugao attract a considerable number of visitors, both domestic and foreign, due to the concentration of a substantial number of tourist facilities at the beach areas, as well as in the urban centres.

29.6. Consideration of the Impacts of the Tourism Growth in Goa

Goa's official tourism policy tends to focus on the economic benefits that this sector generates, even though its exact contribution to the economy is not known (Sen, 1998, 1999). It is indisputable that tourism has contributed significantly to local economic development and job creation; however, it has also proved to be responsible for a series of negative impacts, which have been extensively discussed in the literature (Alvares, 2002; D'Sa, 1999; Dantas, 1999; Kazi and Siqueira, 2001; McCabe and Stocks, 1998; Newman, 2001; Noronha, 1999; Routledge, 2001; Sen, 1998, 1999; Wilson, 1997).

A considerable part of the population is economically dependent on tourism or tourism-related activities (TERI, 2000). Seasonality affects income and employment, especially of unskilled workers, who are often laid off during the low season (Zebregs, 1991). These are mainly migrants coming from other parts of the country (Rajasthan, Gujarat, Kashmir, Tibet, and Karnataka), who also tend to own craft-related stalls, sell goods and services on the beach or work in menial positions, returning to their homelands at the end of tourist season. Goa, therefore, faces two types of population inflows, both strongly seasonal: one from the tourists and the other from the large number of migrant workers.

Goa's economy relies heavily on tourism (former president of TTAG, personal communication, February 8, 2006), which is very vulnerable to shifts in charter flights (manager of travel and events of GTDC, personal communication, April 7, 2007) and has to import a substantial part of the inputs of the tourism sector, due to its small economic base (delegate of the Orient Foundation, personal communication, January 25, 2005). This means that a significant part of the income that is generated by tourism does not stay in Goa, existing leakages to other states of India or even abroad.

There are no consistent data on the expenditure of tourists who visit Goa, however, a study in 1976 (TECS, 1976) concluded that, while high-yield international tourists have a higher propensity to spend, the low and middle-income domestic tourists represent the largest share in the total tourism expenditure. In general, these do not require complex infrastructures, thereby not exerting a great pressure on resources. This seems to

apply also to backpackers, who extensively buy from street stalls, use beach shacks and rent rooms from local families as a way to increase the authenticity and the adventuresome nature of the travel experience. This allows local people to have some control over the tourism trade, not dramatically changing the socio-economic structure.

It is also recognised that the economic contribution of charter flight tourists is meagre, as they buy cheap package deals and spend little money outside the hotel, in addition to the fact that much of that money ends up leaving the local economy (for international corporations and chains operated by Indians from other parts of the country). Yet, official authorities continue to actively promote this type of tourism, with special emphasis on the development of luxury tourism, which generates higher returns per capita, but puts more strain on resources and produces serious environmental problems. This change in market focus is thus bringing new environmental and social problems; however the Government keeps encouraging it.

The growing concern about the negative impacts of tourism led to the emergence of a number of groups and agencies in the 1980s. The most important tourism protest group is *Jagrut Goenkaranchi Fauz* (JGF), which means Goa's Vigilant Army. This group fights for a greater local participation in the planning process, to ensure that tourism does not adversely affect residents' access to essential services and basic infrastructures. Other groups opposing to mass tourism include Goa Foundation, Citizens Concerned about Tourism, *Bailancho Saad* and *Saligao Nagrik Samiti*.

One of the main problems generated by tourism relates to the changes it causes in coastal and rural areas, resulting from the abandonment of traditional activities (GTDC representative, personal communication, February 10, 2005). Since Goa receives more visitors than its population (almost the double), many aspects of the Goan traditional life are rapidly disappearing and serious social impacts are emerging, related to the consumption of drugs and alcohol, and an increase in crime (Deputy Director of the GTD, personal communication, February 10, 2006; former president of TTAG, personal communication, February 8, 2006). There are also cases of paedophilia and child prostitution, with a local NGO (Children's Rights in Goa) actively working on building a coordinated community response to prevent the institutionalisation of sex tourism. Local people also expressed concern about the growing influx of beggars from other States, as well as Indian tourists who come to Goa in search of casual relationships, attracted by the wrong image of women in Goa, which they believe to be 'easily and freely available' (Alvares, 2002). This has led to increased harassment and sexual violence, and prostitution.

A study on the role of tourism-induced activities and other population movements in causing coastal ecosystem changes in Goa showed substantial transformations between 1966 and 1999 (Noronha *et al.*, 2002). Stocks and McCabe (1998) also reported significant changes within a three-year period in the scale and type of development in different resort areas. The transformation of Goa's coastal areas, as a result of the construction boom, has led sometimes to a total disregard for regulations, causing environmental damages in fragile areas (especially sand dunes and mangroves), congestion, bottlenecks and disruption in local communities (former president of TTAG, personal communication, February 8, 2006). Nonetheless, these impacts are not generalised to the entire coastal belt, since there are tourist areas at different stages of development and attracting different market segments.

According to Seifert-Granzin and Jesupatham (1999), the development of tourism-related infrastructure tends to increase the gap between the 'haves' and 'have nots'. Originally, it was the owners of small restaurants and accommodation establishments that began to provide tourism services, but today the organised tourism industry tends to exclude them from tourist sites. The land acquisition act is also commonly used to appropriate land from poor and marginalised farmers in the name of public interest. However, this type of actions, which facilitates the construction of hotels and the development of other tourism-related projects, has sparked numerous anti-tourism protests and demonstrations (see Sen, 1998, 1999). These have generated enough pressure to reverse, halt or modify earlier government schemes. Interestingly, instead of seeking sustainable forms of development in order to minimise the negative impacts caused by tourism and involving local people in the planning process, a major concern of the Government of Goa has been fighting the negative publicity caused by these protests.

Constant changes of the local government and the lack of a clear direction on how tourism should be directed has resulted in the development of tourism in an *ad hoc* manner, responding to national and international forces. The focus of the Government of Goa has been primarily on the promotion and investment, instead of planning. Yet, Goa needs a planned, controlled and well co-ordinated tourism policy. Official authorities have failed to understand that tourists are attracted mainly by the natural beauty of the territory and, if no measures are taken to preserve the environment, tourist flows may decrease significantly and adversely affect the economy. Additionally, by not paying attention to public concerns and local needs, the Government may also cause an increased frustration and antagonism, which can result in a lower threshold of social acceptance of tourism.

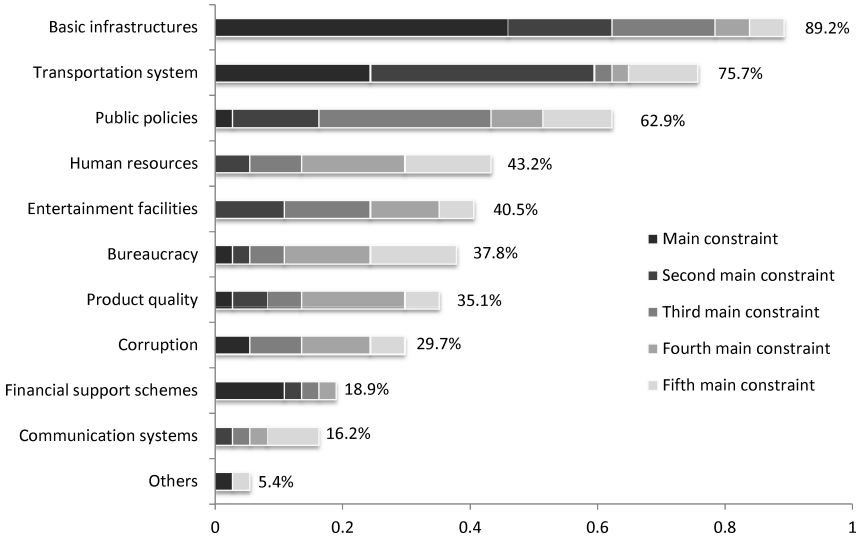

Fig. 29.5. Constraints to tourism development in Goa, according to managers/owners of mid-range and upper-scale classified hotels.

Note: valid responses = 37; non-responses = 3.

Public policies, although not considered the main constraint to tourism in Goa, are a major limitation in the opinion of 62.2% of managers/owners of mid range and upper-scale classified hotels (Fig. 29.5). Also related to the public sector, bureaucracy and corruption were cited by 37.8% and 29.7% of hoteliers, respectively. In their view, poor basic infrastructures and an inadequate transportation system are the biggest constraints faced by the tourism industry in Goa (89.2% and 75.7%, respectively). Representatives of trade associations and public bodies share the same opinion. According to the president of TTAG, the main problems that Goa faces relate with infrastructures, over congestion in some areas (especially in Calangute and Baga), a constrained airport, and inefficient waste management system and law enforcement.

The lack of entertainment facilities and services to attract high-end tourists was also mentioned, a view shared by 40.5% of hoteliers, who believe that Goa does not possess enough entertainment facilities to cater for different market segments. However, in recent years, casinos have sprung up to provide entertainment to tourists. The Government of Goa decided to actively promote offshore casinos by granting licences to more companies: Until September 2008 there was just one casino in the Mandovi River, now their number is tenfold. The establishment of more casinos was controversial

as live gambling is outlawed in India (Goa is the only State where electronic gambling on land casinos and live offshore casinos are permitted) and it sparked the opposition of the local population.

Another problem stressed by the representative of the GTDC is the lack of professionalism and training. Despite Goa having some tourism education and training facilities, 43.2% of hoteliers also highlighted the poor qualification of human resources. According to former presidents of TTAG, Goa also faces the problem of environmental degradation, exacerbation of prices, lack of efficient communication systems (an opinion shared by 16.2% of hoteliers) and problems related to the transportation system.

Priority actions to be taken by the Government of Goa to improve tourism thus should embrace and solve the major constraints faced by the sector, including problems related to basic infrastructure and transportation (57.6% and 33.3% of the opinions, respectively). Increased promotional efforts were reported by 21.2% of respondents. Although promotion should not be a priority, it is not surprising that hoteliers have mentioned it. Interestingly, the recent Goa Regional Plan gives less emphasis to it, showing that the view of the Government is gradually changing. It even suggests that, since Goa is already a well established tourism destination, one year of the promotion budget should be used to clean up Goa's beaches and provide the needed infrastructure. 'This will earn more goodwill for Goa — and attract more tourists — than any advertising budget would deliver'. (Government of Goa, 2008, p. xxvii).

The provision of entertainment facilities, the enhancement of product and service quality, the control of pollution and the preservation of the environment were also mentioned by hoteliers. Other actions include the preservation of Goan heritage, the provision of incentives, the advancement of tourism training and the implementation of rules to curb the exploitation of tourists. Awareness campaigns about the negative effects of tourism, including environmental education and cleanup efforts, the improvement of basic infrastructure (sewage system, water supply and electricity) and of the transportation system were also mentioned by the representatives of associations and public entities.

29.7. Conclusion

It is inevitable that the development of tourism induces impacts in destinations. The unique nature of this sector implies that it can produce changes in the socio-economic fabric of the destination and give rise to conflicts. Some of these negative impacts cannot be avoided completely, however it is

important to minimise them. This chapter aimed at showing the development of tourism in Goa and the policies formulated for the sector, emphasising the impacts arising from its tremendous growth in tourism.

Prior to 1961, tourism was virtually non-existent in Goa. Tourist facilities barely existed to welcome visitors in the territory, either in the form of accommodation or other amenities. There was hardly any scope for the development of tourism. The liberation proved to be the turning point. Realising the need and importance of tourism growth, a program of rapid expansion of accommodation and other tourist services was initiated by the Government, with beach tourism being adopted as a key product for the development of Goa. The construction boom of tourism facilities, sometimes with a total disregard for regulations, has caused environmental damages and disruptions in local communities, contributing to the transformation of the coastal belt. These impacts are not, however, generalised to the entire coastal zone, since there are areas in different stages of development, also attracting different market segments.

Anti-tourism lobby groups, composed of citizens, activist village groups and NGOs have emerged in the territory and have been particularly active. They managed to draw international attention to their cause and have proved to be successful in some legal actions against construction of hotels and resorts in fragile areas, in stopping development on community land, in protecting the rights of workers and ensuring that hotels do not impede the access of locals to the beach. In general, Goans are not opposed to tourism *per se*, since the livelihood of many families depends on it. The reason of this conflict lies in the nature of tourism development. The reduced involvement of local people in the decision-making process has also exacerbated the situation, as they have a strong sense of alienation about decisions that are affecting their lives and the future of the local community.

In general, tourism policy has been essentially reactive. The local government does not have a clear focus on how this activity should be implemented and, as a result, tourism has developed in an *ad hoc* manner, in response to national and international forces. It has focused primarily on promotion and investment, rather than on planning. Yet, Goa needs a planned, controlled and well co-ordinated tourism policy, as well as to integrate the local population in the planning process and to adopt sustainable forms of development, in order to minimise the negative impacts caused by tourism in the territory. The recent Goa Regional Plan has placed less emphasis on promotion and defended the need for a new state-level master plan based on a sustainable vision, showing that government's view has finally started to change.

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About the Authors

Refer to *About the Authors* in Chapter 7.

Chapter 30

TOURISM DEVELOPMENT IN A REMOTE STATE: A CASE STUDY OF ARUNACHAL PRADESH, INDIA

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Abstract: Arunachal Pradesh, the eastern most state of India, is one of the 'hotspots' of global biodiversity. This state is a micro-hotspot within the larger Eastern Himalayas hotspot. Based on satellite imagery, the forest area in this state constitutes around 81.91% of its total area, which is one of the highest of any state in India. The conflict between development process and protecting the rich biodiversity of Arunachal Pradesh is becoming increasingly apparent. Arunachal Pradesh has a unique opportunity to map out a development path that is sustainable and ecologically sound. Despite being rich in its natural resource endowment, the state is one of the most backward states of India. In these circumstances, the promotion of tourism appears to be one of the best ways of generating internal revenue, employment, income and accelerating the pace of development in this state. In addition, the promotion of nature-based and ecotourism can play an important role in the State's strategy for conserving its rich forest resources as well as its cultural heritage. Hence, the present chapter deals with the opportunities and challenges of developing tourism in this remote state of India.

Keywords: Biodiversity; cultural heritage; flora and fauna; remote state; sustainable development; tourism; tribes.

30.1. Introduction

Tourism is basically a service-oriented industry. It is the world's largest industry (Tisdell, 2001). It has been growing at a rapid rate and has acted as a catalyst in the development process at the national and at the global levels (Kamra, 1997). The importance of tourism as an economic activity came to the fore in the second part of the last century. In 1950, the total number of international tourist arrivals was 25 million and total receipts from

tourism amounted to US$2.1 billion. Between 1970 and 2000, the number of international tourists increased tenfold from 70 million to 700 million. Over the past 15 years, international tourist receipts grew at around 1.5% faster than the growth of world GDP (Bezbaruah, 2002).

India is a fascinating country. It has outstanding and varied scenic beauty, rich biodiversity, a vast geographical and climatic range as well as a rich historical and cultural heritage. But the share of India in international tourist arrivals was only 0.56% in 2007 which is very low for such a vast country (seventh largest in the world by area). Although the share of India in international tourist arrivals is low, the country has been witnessing a double digit annual growth rate in foreign tourist arrivals since 2003. For example, India recorded 14.3% growth rate in foreign tourist arrivals in 2007 over 2006 which was higher than the world average of 6.6% and Asia and the Pacific region's average of 10.4%. In 2007, India's foreign exchange earnings from tourism amounted to US$10.73 billion which is only 1.25% of international tourism receipts. However, the country recorded 24.3% growth rate in foreign exchange earnings from tourism in that year which was higher than the world average of 15.4% (Indian Tourism Statistics, 2007).

Like other developmental activities in India, tourism development is also region specific in India. This is clear from the fact that if we examine the share of different regions of India in arrivals of total tourists, it is found that the most attractive region is the Southern Region (45.77%) followed by the Northern Region (38.6%), the Eastern Region (7.65%) and the Western Region (7.09%). However, the share of the North-Eastern Region of India is only 0.9% (Indian Tourism Statistics, 2007). More specifically, five states of India (Andhra Pradesh, Uttar Pradesh, Tamil Nadu, Karnataka, and Rajasthan) together accounted for 72% of the total domestic tourist visits in the country in 2007. Foreign tourist arrivals in 2007, to Delhi, Maharashtra, Tamil Nadu, Uttar Pradesh and Rajasthan together accounted for 65.1% of all foreign tourist arrivals. In the same year, the North-Eastern Region (NER) of India, which comprises of eight states namely, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, accounted for only 0.89% of total domestic tourist visits and only 0.33% of total foreign tourist visits in the country which is negligible. However, in recent years, this region has been witnessing an increasing number of both domestic and foreign tourists. The region recorded a 14.7% annual average growth rate of domestic tourist visits during 2006–2009. Among the north-eastern states, Arunachal Pradesh recorded the highest annual average

growth rate (47.84%) followed by Sikkim (29.1%) (Table 30.4). This fact shows the potentiality of Arunachal Pradesh in developing tourism which is highly desirable for its rapid economic development as well as for conserving its rich biodiversity and cultural heritage. Hence, the present study explores the potential for and challenges of developing tourism in Arunachal Pradesh, a remote state of India.

Arunachal Pradesh, the easternmost state of India, is situated in Trans-Himalayan region between latitude 26° 28′ N and 29° 33′ N and longitude 91° 31′ E and 97° 30′ E and is well-known for its vast forest resources and rich biodiversity. In fact, this state is part of the Indo-Burma biodiversity 'hotspot' which is one of the mega-biodiversity hotspots of the world. As per the estimate of Forest Survey of India, based on satellite imagery, forests constitute around 81.9% of the total area of this state, which is one of the highest among the states of North-East India. An analysis reveals that in around 2.5% of India's landmass, the state of Arunachal Pradesh contains nearly 16% of the total timber growing stock of the country and more than 20% of the fauna of the country. Moreover, Arunachal Pradesh with its unique geographical position and climate offers excellent growing conditions for orchids. This state is the abode of more than 545 species of orchids which is perhaps the highest number of species of orchids present in any single state of India. Arunachal Pradesh accounts for around 50% of the species of orchids found in the entire country.

The dense forest and rich biodiversity of Arunachal Pradesh present huge opportunities and challenges. The conflict between development process and protecting the biodiversity of the state is becoming increasingly more apparent. Arunachal Pradesh has the unique opportunity to map out a development path that is both sustainable and ecologically sound. Despite being rich in resource endowment, Arunachal Pradesh is one of the most backward states of India. Given this background, the promotion of tourism appears to be one of the best ways of generating internal revenue, employment, income and accelerating the pace of development in the state. In addition, the promotion of nature-based tourism, including ecotourism, can play an important role in the state's strategy for conserving its rich forest resources as well as its cultural heritage. In this connection, it should be noted that Arunachal Pradesh is home to twenty six major tribes and one hundred and ten sub-tribes. It is acknowledged to be one of the most splendid multi-lingual tribal areas of the world.

A map of Arunachal Pradesh showing its location in India as well as its districts and main towns is provided in Fig. 30.1.

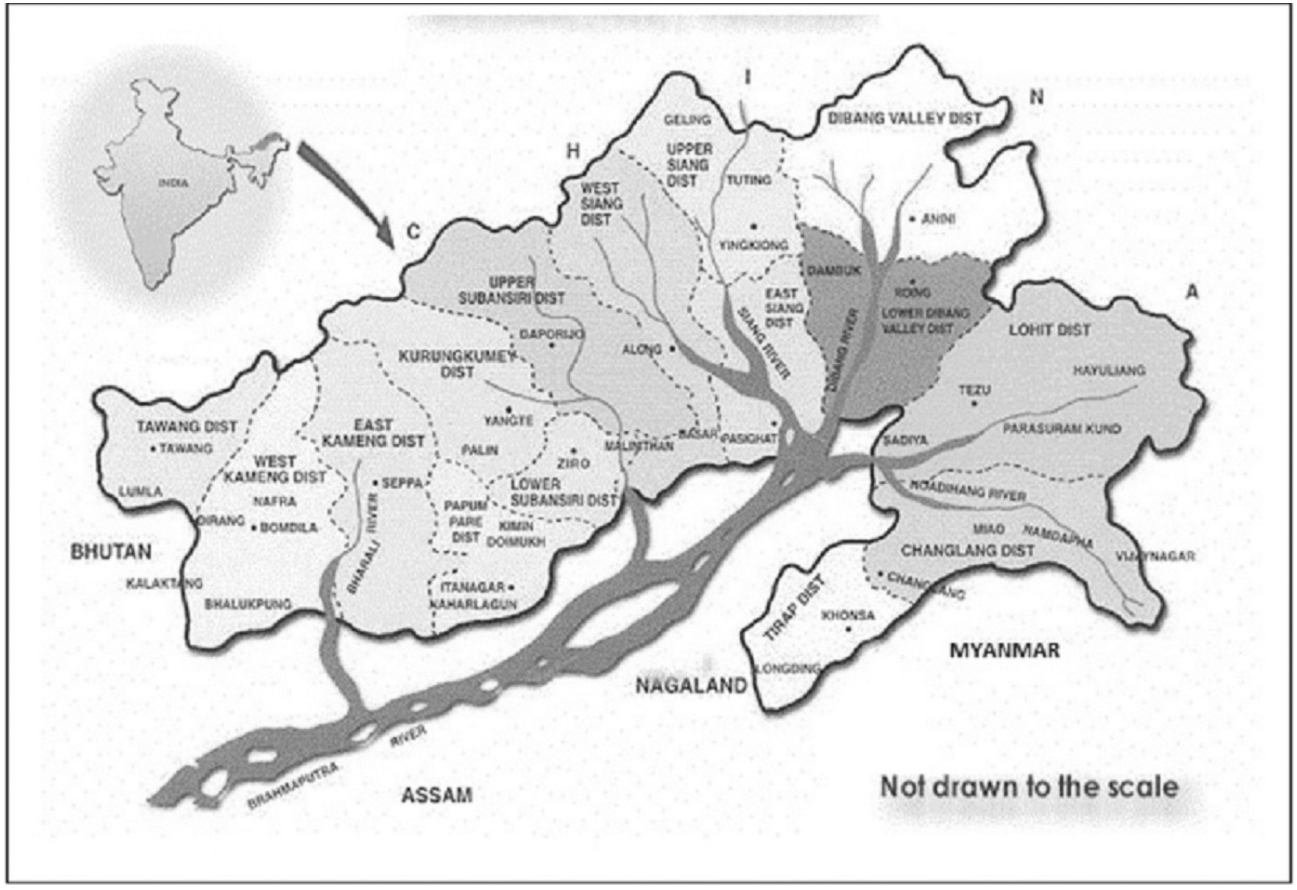

Fig. 30.1. A map of Arunachal Pradesh showing its districts and main towns.
(*Source*: Based on a similar map of Department of Tourism, Government of Arunachal Pradesh).

30.2. Potentiality of Tourism

30.2.1. *Tourist spots in Arunachal Pradesh*

Arunachal Pradesh is gaining popularity as a tourism destination due to its cultural heterogeneity, monasteries, mountains, snow clad peaks, crystal clear lakes and rich biodiversity (Mitra, 2008). There are at present eleven officially identified tourist spots in the state. These are listed in ascending order of their distance from the state capital, Itanagar (Table 30.1), along with the district in which they are located as well as their distance from the nearest airport and railway station. The details are given in Table 30.1.

These tourist spots can be grouped into four categories depending on the type of tourism for which they cater.

30.2.2. *Heritage tourism*

Tawang, Bhismaknagar and Itanagar are historical and heritage tourist spots. Tawang has a 350 year-old Buddhist Monastery which is the second oldest monastery in Asia and the largest monastery in the Himalayan

Table 30.1. Identified tourist spots in Arunachal Pradesh.

Name of the tourist spot	District	Distance from the state capital (in km)	Approximate travel time from Itanagar by road (in hours)	Distance from the nearest airport (in km)	Distance from the nearest railway station (in km)
Itanagar	Papum Pare	0	0	68	32
Malinithan	West Siang	162	5.5	110	14
Ziro	Lower Subansiri	168	5.6	124	120
Tipi	West Kameng	210	6	60	54
Pasighat	East Siang	280	6.5	90	28
Along	West Siang	335	9	140	84
Bomdila	West Kameng	360	10	156	148
Dirang	West Kameng	403	12	196	188
Tawang	Tawang	540	18	370	362
Namdapha National Park	Changlang	640	22	180	80
Parasuram Kund	Lohit	795	28	182	137

Source: North-East India Data Bank-Tourism (2003, pp. 5–6).

region. The monastery is called 'Galden Namgyal Latse' and is popularly known as Tawang Monastery.[1] There is also a stupa called 'Gorsam Chorten' at Gorsam village of Zemithang Circle which is one of the largest stupas in Asia. So, Tawang can be developed as a Buddhist tourist centre which can attract Buddhist tourists from Thailand, Japan, Korea, Sri Lanka, Nepal, Bhutan and so on. The Itafort of Itanagar (which was built in the 14th century A.D.) and is a historical site as also is Bhismarknagar in the Dibang Valley district. Those can be developed as heritage tourist spots.

30.2.3. *Pilgrimage tourism*

Malinithan, Parasuram Kund as well as Tawang are pilgrim centres of Arunachal Pradesh. Malinithan situated at Likabali in West Siang district is a unique site developed between the 10th and 12th centuries A.D. It has an ancient temple housing sculptures of gods and goddesses. The Malinithan temple is one of the holy Hindu pilgrimage centres of North-East India. This temple holds significance for devotees who come in large numbers from different parts of India every year. The devotees come to pray for their wish and even offer their gifts to the goddess after the fulfilment of their wish. Parasuram Kund in Lohit district is one of the important Hindu pilgrim places in North-East India. It is a place where Hindus believed that Lord Parasuram washed away his sin of matricide. During *Makar Sankrati* (around 14th or 15th January) thousands of pilgrims from all over India come here for a holy dip to wash away their sins. In addition, a large number of Buddhist tourists (belonging to Mahayana Buddhism) visit Tawang Monastery during *Buddha purnima*[2] (full moon day) in the month of May.

30.2.4. *Cultural tourism*

Arunachal Pradesh is a home of 26 major and 110 minor tribes with rich cultural traditions. The added attractions are the colourful festivals of different tribes which form essential aspects of the socio-cultural life of the people of this state. Thus, Arunachal Pradesh is a wonderful destination for the cultural tourists who want to understand local tribal life and culture.

30.2.5. *Nature-based tourism and adventure tourism*

Arunachal Pradesh is rich in forest resources and biodiversity and therefore, can be developed as a destination for nature-based tourism. Tourist spots

[1]It is a sacred place for Mahayana Buddhism.
[2]It commemorates Lord Buddha's birth anniversary.

such as Bomdila, Bhalukpong and Dirang in West Kameng district, Tawang in Tawang district, Ziro in Lower Subansiri district and Along in West Siang district possess much natural beauty, for example, flower strewn valleys, snow-clad mountains, plateaus, green forests, many varieties of orchids. They can be developed as major destinations for nature-based tourism. Tawang and Bomdila are the Eastern Himalayas mountain resorts for tourists.

Arunachal Pradesh has a huge potential to develop adventure tourism. This state has numerous voluminous rivers such as, Kameng River, Siang River, Lohit River, and Subansiri River which are suitable for river rafting and boating. It also has several mountain peaks such as, Kangte peak (7,090 metres) in the West Kameng district and Gorichen peak (6,488 metres) in the Tawang district which provide an opportunity for climbers to fulfil their dreams. There are numerous passes in the state such as, Bomdila Pass, Sela Pass, Bumla Pass, Lumla Pass which can be used for trekking. The state has a number of mountain lakes such as, Mehao and Sally lakes in Lower Dibang Valley district, Ganga lake in the state capital, Itanagar, Sela lake in Tawang district, which are home to some of the world's finest sport fishes like Mahseer, Indian trout, snow trout and carps. Thus, it offers ample scope for angling. So, tourist activities like mountaineering, trekking, boating, and river rafting and angling can be catered for in Arunachal Pradesh.

There is considerable scope for developing wildlife tourism in Arunachal Pradesh. For example, in Arunachal Pradesh, there are two national parks, namely, Namdapha National Park in Changlang district (this park contains diverse mammal species including four big cat species: snow leopards, clouded leopards, common leopards and tigers) and Mouling National Park in Upper Siang district (which contains takins, gorals, leopards, tigers, barking deer, serow and other mammals). Beside these two national parks, there are eight wildlife sanctuaries and one biosphere reserve which house diverse species of flora and fauna. There is also an orchid sanctuary, Sessa Orchid Sanctuary, which contains more than 200 orchid species with 5 new and endemic species is located at Tippi in West Kameng district.

30.3. Challenges for Tourism Development

Although Arunachal Pradesh has enormous potential for the development of tourism, the tourist inflow to this state is very limited. If we look at the position of Arunachal Pradesh in North-East India in respect of tourist arrivals, it is found that its share in total domestic tourist inflow in the north-eastern region is one of the lowest. For example, in 2006, this state

accounted for only 2.02% of the total domestic tourists visiting the north-eastern region of India. Its share improved to 3.42% in 2009. Although the share of the state in total domestic tourist inflow is one of the lowest in India (third lowest), the growth rate of its domestic tourist inflow has been the highest among the North-Eastern States. During the period 2006–2009, its average annual growth of domestic tourist inflow was 47.84% which was the highest among the North-Eastern States of India (Table 30.4). This may be due to its low initial tourism base. Therefore, let us consider constraints on tourism development in Arunachal Pradesh.

This state has very poor infrastructural facilities. The remoteness and inaccessibility of most of its tourist spots (mainly due to a lack of proper infrastructural facilities) has hindered its development of tourism. Among the North-Eastern States, Arunachal Pradesh appears to be the most backward in terms of infrastructural facilities. For example, this state still does not have any functional airport.[3] The nearest airport is Lilabari in North Lakhimpur district in Assam which is around 68 km from the capital of Arunachal Pradesh, Itanagar. In addition, there is a helipad at Naharlagun from where *'Pawanhans'* used to run a helicopter service from Guwahati to Naharlagun (9 km from Itanagar), Guwahati to Tawang and to different district headquarters from Itanagar. The state capital is expected to be connected by rail within a few years.

The distances of the nearest airport and railway station from the identified tourist spots of Arunachal Pradesh are given in Table 30.1.

Thus, the principle mode of transport in Arunachal Pradesh is by road. However, its density of roads is one of the lowest in the country. In 2004, it had road density of 18 km per 100 sq. km against the national average of 75 km per 100 sq. km and the north-eastern average of 52 km per 100 sq. km. Arunachal Pradesh possesses one of the smallest lengths of national highways in the region. Furthermore, the length of national highways relative to the total area of the state, is the lowest among the north-eastern states (Table 30.2).

Availability of proper accommodation facilities near the tourist spots is also an important determinant of tourism development. Ecotourists are

[3]Earlier there used to be a couple of airports for very small aircraft, which became non-functional after some time perhaps because it was not commercially viable then. Now with the operation of helicopter services, helipads have been established in many a district headquarters.

Table 30.2. Length of national highways in the North-Eastern Region of India (2004).

State	Length (in km)	Area (in sq. km)	Length of highway as percent of total state area
Sikkim	62	7,096	0.87
Arunachal Pradesh	**392**	**83,743**	**0.47**
Tripura	400	10,486	3.81
Nagaland	414	16,579	2.50
Meghalaya	810	22,429	3.61
Mizoram	927	21,081	4.40
Manipur	959	22,327	4.30
Assam	2836	78,438	3.62
NER Total	6800	2,62,179	2.59

Source: *State Development Report of Arunachal Pradesh* (2009, p. 274).

nature lovers and they basically want to have a close association with nature. So they prefer accommodation facilities located near the tourist spots. However, in Arunachal Pradesh, it has been found that accommodation facilities in the identified tourist spots are not well-developed except in some places such as Bomdila, Tawang, Itanagar and Ziro. The standard of services provided by the tourist lodges are also found to be below the level of satisfaction sought by tourists (Mitra and Lama, 2010).

There are also some institutional constraints which hinder the development of tourism in Arunachal Pradesh. The main institutional constraint is the requirement that tourists must have is the provision inner line permit (ILP) or a restricted area permit (RAP). All domestic tourists are required to obtain an ILP for visiting Arunachal Pradesh. These can only be obtained from a limited number of places such as Delhi, Kolkata, Shillong, Guwahati and Dibrugarh. All foreign tourists intending to visit Arunachal Pradesh are required to obtain an RAP from the Ministry of Home Affairs, Government of India. However, the Central Government has recently delegated power to the State Government to issue RAP to foreign tourists visiting in a group of three or more persons for a maximum period of thirty days. It has been observed that the procedure for obtaining ILP and RAP is very complex and time consuming. This acts as a disincentive for the potential tourists intending to visit Arunachal Pradesh.

Box 30.1

Inner Line Permit (ILP)

The ILP which restricts the entry of outsiders (Non-Arunachalees) into Arunachal Pradesh has meant its limited interaction with the rest of India. According to the provisions of the *Inner Line Act*, enacted by the British in 1873, people from other parts of the country cannot enter this state without the permission of the Government. However, the reverse is not applicable.

The *Inner Line Act* continues to be operational even today and people who do not belong to Arunachal Pradesh need an ILP to enter the State. The Non-Arunachalees cannot own any land or any fixed assets in this state. The purpose of ILP is to protect and preserve the culture of the indigenous tribes of this state (*Arunachal Pradesh Human Development Report 2005*).

Lack of an adequate tourism marketing strategy is also a major constraint for the promotion of tourism in Arunachal Pradesh (Mitra, 1998). Arunachal tourism industry is poorly developed because of lack of coordination between the Government agencies and the virtual absence of information and marketing of the state's attractions. It is to be noted that success of Singapore and China in tourism industry would suggest that the marketing of tourism product is just as important as its nature and quality for promoting the tourism industry.

Other major constraints on the successful promotion of tourism in Arunachal Pradesh include growing insurgent activities and agitations in the neighbouring states like Assam. Although Arunachal Pradesh is known as 'the island of peace' in North-East India, the entry points of Arunachal Pradesh touch the disturbed areas. This may act as a psychological obstacle to visits by potential tourists. For example, during 1990s, the arrival of tourists to Arunachal Pradesh was very limited (less than 10,000) due to the peak of insurgency activities in Assam. It was found that tourist arrivals in Arunachal Pradesh have increased since 2003 due to the surrender of militant groups like the United Liberation Front of Assam (ULFA) in Assam and subsequently due to the improvement of law and order situation in Assam.

30.4. Trend, Growth and Seasonality of Tourist Inflow

Arunachal Pradesh has considerable potential to attract tourists from various parts of the country as well as from different countries, but the number

of tourist arrivals is low compared to the other Indian states as well as other states in the north-east region. However, recently its total tourist arrivals have been accelerating.

In recent years, Arunachal Pradesh has witnessed a rapid increase in tourist inflow. This may be partly because in the last couple of years a determined effort is being made by the government of Arunachal Pradesh to woo tourists to some of Arunachal's tourist destinations by organising a number of tourist festivals. The total tourist inflow in Arunachal Pradesh increased from 40,088 in 2004 to 93,312 in 2007 and further to 199,092 in 2009. At the same time, there has also been a slight change in the composition of tourists visiting this state. In 2004, foreign tourists constituted just 0.80% of the total tourists visiting this state. However, the share of foreign tourists increased to 2.37% in 2007. In 2009, the foreign tourists constituted 1.98% of the total tourists visiting Arunachal Pradesh. Although the share of foreign tourists is increasing, domestic tourists constitute the major proportion of its total tourists (Table 30.3).

The share of Arunachal Pradesh in total domestic tourist inflow into India's North-Eastern Region, is one of the lowest. For example, in 2006 it accounted for only 2.02% of the total domestic tourists visiting the North-Eastern Region of India. Its share improved to 3.42% in 2009. Although its share in total domestic tourists inflow is one of the lowest (third lowest), its recent growth rate of domestic tourist inflow has been the highest among the north-eastern states. During the period 2006 to 2009, Arunachal Pradesh recorded a 47.84% average annual growth rate of domestic tourist arrivals which was the highest among the north-eastern states (Table 30.4).

Table 30.4 shows that as far as domestic tourist arrival is concerned, Assam is at the top in the region (around 67.50% of total domestic arrivals in

Table 30.3. Trends in the number of domestic and foreign tourists visiting Arunachal Pradesh, 2004–2009.

Year	Domestic	Foreign	Total
2004	39767 (99.20)	321 (0.80)	40088
2005	50560 (99.38)	313 (0.62)	50873
2006	80137 (99.13)	706 (0.87)	80843
2007	91100 (97.63)	2212 (2.37)	93312
2008	149292 (98.02)	3020 (1.98)	152312
2009	195147 (98.02)	3945 (1.98)	199092

Note: Figures in the bracket indicate percentages of the totals.
Source: Directorate of Tourism Government of Arunachal Pradesh (2010).

Table 30.4. Domestic tourist inflows in North-East India, 2006–2009.

States	2006	2007	2008	2009	Annual average growth of tourist arrivals during 2006–2009 as a percentage
Assam	2768824 (69.96)	3436833 (72.72)	3617306 (70.31)	3850521 (67.50)	13.02
Meghalaya	401529 (10.15)	457685 (9.68)	549936 (10.69)	591398 (10.37)	15.76
Sikkim	292486 (7.39)	329075 (6.96)	368451 (7.16)	547810 (9.60)	29.1
Tripura	230645 (5.83)	244795 (5.18)	245438 (4.77)	317541 (5.57)	12.56
Arunachal Pradesh	**80137 (2.02)**	**91100 (1.93)**	**149292 (2.90)**	**195147 (3.42)**	**47.84**
Manipur	116984 (2.96)	101484 (2.15)	112151 (2.18)	124229 (2.18)	2.06
Mizoram	50987 (1.29)	43161 (0.91)	55924 (1.09)	56651 (0.99)	3.7
Nagaland	15850 (0.40)	22085 (0.47)	46513 (0.90)	20953 (0.37)	10.73
NER Total	3957442 (100)	4726218 (100)	5145011 (100)	5704250 (100)	14.71

Source: Ministry of DoNER, Government of India (2010).
Note: Figures in the bracket show percentage of total.

the region in 2009) because it is the gateway of the region and it has a number of excellent tourist attractions, for instance, outstanding wildlife sanctuaries (two of them were recognised as World Heritage sites by UNESCO) and important historical and religious sites of interest. At the same time, Assam is relatively accessible in terms of having six airports and around 96% of total length of railways of the region. On the other hand, Nagaland is at the bottom in the table because of insurgency problems and to some extent, due to its relative inaccessibility and inadequate transport facilities.

The trend in tourist inflows in Arunachal Pradesh in the period 2004 to 2009 is clearly depicted in the Fig. 30.2.

Though the total tourist arrivals to Arunachal Pradesh have been growing at a rapid rate, its inflow of tourist is highly seasonal in character. A large

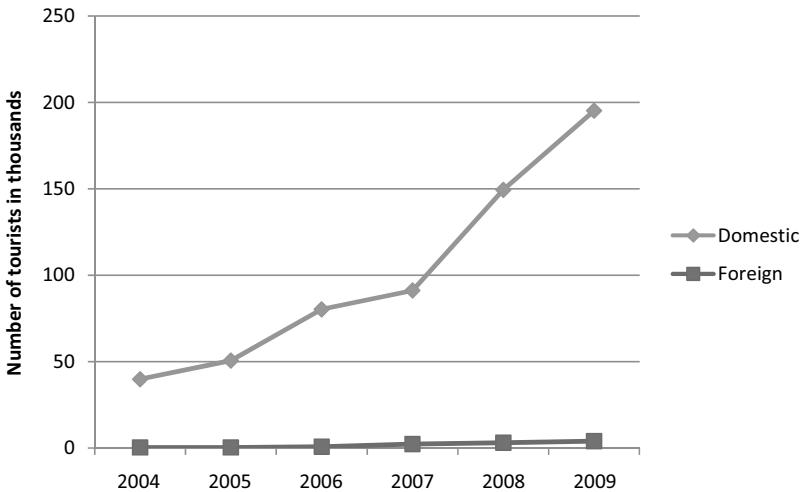

Fig. 30.2. Trends in tourist inflows to Arunachal Pradesh, 2004–2009.

proportion of its total tourists visit is during the period March to May and September to October. In order to highlight the seasonal character of its tourist arrivals, the percentage of total tourist annual arrivals by seasons is given in Table 30.5. It is based on 2009 date.

In the year 2009, 31.30% of total tourists visited Arunachal Pradesh during the period March to May and 27.52% visited it during the September to October season (Table 30.5). This means around 60% of the total tourist visiting this state in a year usually visit during the March to May and September to November seasons. These two seasons are peak tourist seasons for this state. The analysis of the seasonal character of domestic and foreign tourist shows that a high proportion of domestic tourist visits it during March to May season (31.48% in 2009) and a high proportion of foreign tourist visit it during September to November season (44.51% in 2009). This is possibly because foreign tourists prefer the colder weather which is prevalent during September to November; while the domestic tourists are more inclined to visit during the slightly warmer seasons of March to May. Tourist visits are low in the period June to August because Arunachal Pradesh receives heavy monsoon rainfall (annual average rainfall is around 350 cm) which results in landslides leading to disruption of the road network. During December to February season, inflow of tourist is relatively low because of heavy snowfall and cold weather in the high altitude tourist spots. However, moderate numbers of snow-lovers visit to see and experience snowfall despite hostile weather condition. The seasonality of tourist inflow indicates

Table 30.5. Percentage of annual tourist arrivals in Arunachal Pradesh (based on 2009 data) in the periods indicated.

Tourist type	March–May (%)	June–August (%)	September–November (%)	December–February (%)
Foreign	25.96	5.91	44.51	23.62
Domestic	31.48	19.77	26.94	21.8
Total	31.3	19.31	27.52	21.86

Source: Directorate of Tourism, Government of Arunachal Pradesh (2010).
Note: Pilgrimage tourists have not been taken into account.

high demand for tourist facilities during the peak season and under utilisation of tourist facilities during the lean season.

The relatively small proportion of foreign tourists visiting Arunachal Pradesh and its relatively small share in total domestic tourist inflow may be because of its remoteness, lack of proper infrastructure and lack of proper marketing strategy and the required entry formalities. Although there is no official record of domestic tourist arrival from different states of India, during our survey, it was found that the highest number of tourists is from Assam, West Bengal, Uttar Pradesh and Delhi. The foreign tourists are mostly from Asian countries (Japan, Thailand, and Myanmar) and there are also some from European countries and the USA.

30.5. Nature and Structure of Tourist Demand

A study was completed by Mitra *et al.* (2003) to determine the nature and structure of tourist demand in Arunachal Pradesh in relation to the tourist income, occupation, level and pattern of expenditure, purpose of visit and demographic characteristics such as age. Data was obtained from a field survey which was undertaken in 2002–2003 (Mitra *et al.*, 2003). An attempt was also made to identify the different categories of tourist expenditures, especially in the selected tourist spots of Arunachal Pradesh. It was found that 39.92% of the total expenditure was for accommodation, followed by food and beverage (30.06%) and shopping (15.84%). Relatively less (12.90%) was spent on local transport. This reflects the fact that tourists hired transport from outside the state since the local transport system was not much developed and transport was relatively more costly. This is supported by the fact that around 77.87% of the surveyed tourists were of the opinion that there is a need to improve the mode of transportation for developing tourism in Arunachal Pradesh (Mitra, 2008).

From the surveyed tourists it was found that around 29% of the tourists of Arunachal Pradesh were between ages 20 to 30 years and 44.9% were between the ages of 30–40 years. This fact emphasises the need to organise more and more challenging, adventure and thrilling activities for the energetic and youthful tourist visitors. This would require greater investment in activities like mountaineering, trekking, hiking and river rafting and allied sports along with fascinating cultural activities (Mitra, 2008).

Furthermore, it was revealed that viewing natural beauty was a satisfying experience and most of the respondents (98.11%) wanted to return to Arunachal Pradesh provided transportation facilities and institutional facilities were improved. At the same time, a high proportion of respondents (98.75%) said that they would talk to their friends and relatives about their experience in Arunachal Pradesh and presumably advice a visit to these places. This was also supported by the fact that the recommendations of friends and relatives had induced 79.4% of the tourists to visit this state as against the other factors such as publicity in newspapers, TV, Internet and so on.

These factors demonstrate the existence of a large potential market, particularly for ecotourism in this state and also strengthen the case for further expansion and development of its tourism sector. However, on the supply side, we found that its tourism infrastructures are underdeveloped. The road infrastructure is not properly developed. The conditions of roads leading to many tourist spots are bad. In fact, a very high proportion of the surveyed tourists wanted the conditions of its roads to be improved. The accommodation facilities were inadequate in its tourist destinations. But in the recent years there has been substantial improvement in its accommodation facilities. However, the quality of food, basic facilities and services in its hotels/lodges needs to be improved further.

30.6. Policy Suggestions

On the basis of our consideration of the potential for and challenges of tourism in this remote state the following policies are suggested for maintaining sustainable tourism.

- Tourism, in Arunachal Pradesh, needs improved organisational support for its coordination. It should be given priority in the overall planning of this state. Institutional arrangements for improved coordination at the state level should be evolved.
- The identification of more tourist circuits should be prepared by the State Government in discussions with the tour operators. The circuits may be

developed in terms of two primary categories. The first category of circuits should cover some of the locally important attractions. The second category circuits should cover those attractions which have more local importance and which can be linked to tourist centres of North-East India. More specifically, the circuits of the north-eastern region may be divided into different categories such as those involving pilgrimage, historical, recreational and wildlife experiences, and the identified tourist spots of Arunachal Pradesh may be linked to those circuits accordingly. For example, for wildlife tourism, the circuits in north-eastern region may include Manas National Park (Assam), Kaziranga National Park (Assam) and Namdapha National Park (Arunachal Pradesh).

- Public–private partnership should be treated as an essential ingredient of the policy for the development of tourism in Arunachal Pradesh. This is due to the fact that in Arunachal Pradesh the Government primarily took upon the task of modernising the economy. The people followed the Government and participated in various developmental activities. In the process, however, an impression was created that the Government was the sole initiator and executor of the developmental process. Individual initiative, drive and entrepreneurship were not considered central to the process of development; Government activism came to be associated with the private passivism. Therefore, in the context of Arunachal Pradesh, it is necessary to encourage the public-private partnership particularly in tourism sector. For example, the Government can build up the infrastructural facilities for tourism like, Helipads, short landing run-ups for small aircrafts, tourist lodges and huts etc. since the cost of construction is two to three times higher than the other places in India because of the hilly terrain and high transport cost. But the private sector is best suited for the management and delivering of services particularly in tourist lodges. The tourist lodges are few and also scattered in different parts of this state. Hence, it is proposed to construct tourist lodges in the remaining Eleventh Five year plan in the selected places such as Itanagar, Ziro, Malinithan, Sela Pass, Tipi, Yingkiong, Pasighat, Tuting, Anini, Daporijo and Hayuliang.
- The Government should also encourage adventure tourism by building necessary infrastructure for angling, river rafting, winter sports and so on. The angling and river rafting can be developed in West Kameng, Lower Subansiri, West Siang and East Siang districts of Arunachal Pradesh. The winter sports can be developed in Tawang, West Kameng and Upper Siang districts.

- The participation of local people should be encouraged. Local management and skills should be developed so that local people can maintain their culture and also improve sites. For example, tourist destinations should be developed in consonance with the local communities. In our survey, many tourists expressed their desire to stay and experience the local huts along with local drinks if the necessary basic tourist facilities are provided. Hence, it may be possible to provide a unique experience to tourists by building low-cost infrastructure in the villages adjoining district headquarters by using local materials and local designs. This will create local employment opportunities.
- The simplifying of the entry formalities can lead to increased tourist inflows throughout the year. The Indian Government may think seriously about simplifying the entry formalities for tourists to Arunachal Pradesh, so that more tourists can be attracted. For example, the tourists may obtain the Inner Line Permit for short duration at the various entry points into this state by doing the necessary formalities, there itself, instead of facing the bureaucratic hazards outside this state.

30.7. Conclusion

From the above discussion, it is evident that Arunachal Pradesh is blessed with abundant resources for the development of tourism but it has not been very successful in exploiting its resources so as to attract a large number of tourists. This is mainly because of various challenges and constraints hindering the growth of its tourism sector. However, there are good prospects for the development of tourism in this state if its infrastructural facilities and institutional mechanisms are improved. In recent years, it has been witnessing one of the highest rates of growth of tourist inflow among the north-eastern states which is a clear manifestation of its tourism potentiality. The study shows that sustainable policies and guidelines for tourism could make Arunachal Pradesh one of the most frequently visited states in the entire North-Eastern Region of India. This could provide very significant and much needed revenue to the state government. It can also provide employment opportunities and income to the local people of this remote state where economic opportunities are limited. This is because agriculture in this state is based on shifting cultivation and its productivity is low. Manufacturing industries are almost non-existent although a few forest-based industries exist. Hence, in the present situation promotion of tourism can help to accelerate Arunachal Pradesh's development process and could help maintain its rich biodiversity. However, its tourism development must be

integrated with that of the North-Eastern Region of India in order to reap maximum benefits.

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Chapter 31

TOURISM DEVELOPMENT AT ZHANGJIAJIE, CHINA: KOREAN TOURISTS AND THEIR IMPACTS

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Abstract: An increase in the number of tourist arrivals is regarded as an important indicator of the development of a tourist site. At Wulingyuan, a World Heritage site in Hunan Province in China, rapid growth in the tourist arrivals from Korea has resulted in the so called 'Korean Wave'. This chapter identifies the causes and impacts of this rapid increase in the number of inbound tourists and provides a generic model to enhance our understanding of this tourism growth. Korean arrivals have come to dominate tourist arrivals at Wulingyuan. Why? How did it occur? By using empirical data from surveys of local tourist practitioners, this chapter concludes that the initial, pull, and operating forces were generated by the market, but subsequently push and essential forces were supplied by the public sector in order to stimulate tourism growth from Korea. Inbound tourism in China needs to be initiated by market demand, but requires government support subsequently. The combination of market and government mechanisms jointly provides a model for inbound tourism marketing in China and possibly elsewhere.

Keywords: China; inbound tourism; Korea; tourism development; Wulingyuan; Zhangjiajie National Park.

31.1. Introduction

The number of Korean tourists visiting Wulingyuan, located in Zhangjiajie National Park in Hunan, China, a World Natural Heritage site, has experienced continual growth since 2000. Tourism is the main source of tax revenue and the key industry for the economic development of the nearby city of Zhangjiajie. In 2007, Zhangjiajie recorded over 18 million tourist arrivals from China and abroad, nearly three times its number of tourist arrivals in 2000, and the total revenue of Zhangjiajie's tourism industry reached USD13 billion (Zhangjiajie Statistical Office, 2008). The number

of international tourists, especially Korean package group tourists, has dramatically increased. The majority of foreign tourist arrivals to Zhangjiajie are Korean tourists. According to *Zhangjiajie Statistical Yearbook* (2008), approximately 1.1 million foreign tourist visited Zhangjiajie in 2007. This number accounted for 90% of total inbound tourists to Zhangjiajie, and a quarter of all Korean tourists to China (NTA, 2008), forming the unique 'Korean Wave' in inbound tourism for this site.

It is also obvious from the supply side that Korean tourists are important in Zhangjiajie. There are over 400 tour guides who can speak fluent Korean, and souvenir shopkeepers and peddlers in main tourist attractions of Zhangjiajie can speak simple Korean (Linsheng Zhong, 2008). Many store signs and road signs are written in both Chinese and Korean. Korean restaurants are conveniently located throughout the city. With the aggressive promotion of the local government to attract more Korean tourists, it is expected that the number of Korean visitors will continue to grow, and so will have a significant impact on tourism development in Zhangjiajie.

Most inbound tourists enter China from major cities such as Beijing, Shanghai, Xian, Guangzhou, and make those entry points their primary destination (Wen and Sinha, 2009). However, Korean tourists either fly directly to Zhangjiajie via chartered air services, or fly to Changsha, the capital city of Hunan Province, and then they use land transport to Zhangjiajie. Over 79% of Korean tourists to Zhangjiajie make it their primary destination, forming a unique 'single destination phenomenon' (Zhang and Bao, 2007).

Korean arrivals to Zhangjiajie serve as a particular case where arrivals from one single market (country) grew significantly and came to dominate inbound tourism at a tourist site. It is pertinent to analyse Korean inbound markets to Zhangjiajie in order to fully understand the process of developing inbound tourism, and to provide insights for future policy development and tourism practice.

31.2. Review of Tourism Development in Zhangjiajie

Zhangjiajie is located in the northwestern part of Hunan province in China. It is one of the most popular tourism destinations in China due to its unique natural scenery. Zhangjiajie is also China's first national forest park and has been designated as a World Natural Heritage Site by UNESCO under the title 'Wulingyuan Scenic and Historic Interest Area' (WSHIA). Zhangjiajie was little known to the general public and was just an isolated mountainous area until the early 1980s when Wu Guangzhong, a famous Chinese

painter, published an essay entitled 'The Unique Scenery of Zhangjiajie: An Undiscovered Scenic Jewel'. Immediately, Zhangjiajie started to attract artists, journalists and photographers, and became better known through their publications and photographic exhibitions (Linsheng Zhong, 2008). Zhangjiajie was established as a national forest park in 1982 in response to the increasing number of visitors. The tourism development of the area of Zhangjiajie has been growing rapidly ever since.

As the number of tourists increased, the local government realised the importance of developing the tourism industry as a means for economic growth and played an important role in the tourism development of Zhangjiajie. The local government decided to increase accommodation facilities in the Wulingyuan Scenic Area to meet the increasing demands of tourists and to build major paved roads to connect the city with its nearest town. As a result of the construction of a railway to Zhangjiajie city in 1984, more package tourists from other parts of China began to visit Zhangjiajie. In addition, the opening of Zhangjiajie airport in 1994 led to an increasing number of international tourists. Table 31.1 presents the number of overseas tourist arrivals in Zhangjiajie from 2000 to 2007.

It is evident from Table 31.2 that apart from 'compatriot' visitors from Taiwan, Hong Kong and Macao, the Korean market is the most important foreign tourist market for Zhangjiajie. What are the driving forces behind the significant growth of Korean tourists to this area? Researchers have argued that benefits, motivations, and the behaviour itself, may serve as a direct link between the decision to purchase and destination attributes. Variables such as age, income, and family structure can be situational and dependent on external influences (Goeldner and Ritchie, 2003). Market segments have

Table 31.1. Annual inbound tourist arrivals in Zhangjiajie, 2000–2007.

Year	Taiwan	Hong Kong & Macao	Korean	Japan	Southeast Asian	Europe & America	Other
2000	122,169	38,569	5,741	20,436	12,404	1,115	1,498
2001	110,040	66,776	58,723	10,659	4,199	3,589	16
2002	43,373	14,561	194,886	43,373	5,006	7,903	708
2003	104,297	5,165	230,698	9,291	4,848	1,085	1,952
2004	74,069	32,518	780,757	9,256	5,580	782	316
2005	59,832	15,699	1,160,751	12,218	30,948	7,500	909
2006	127,477	50,991	1,030,015	12,748	38,243	15,297	0
2007	127,033	33,741	1,025,833	6,925	44,694	20,774	0

Source: Zhangjiajie Statistical Office (2008).

Table 31.2. Survey results obtained from tourism practitioners at Zhangjiajie about the 'Korean Wave'.

Mechanism	How much do you agree on the following statement (Scale: 1 — completely disagree, 5 — completely agree)	Survey response		
		Number of respondents	Average (M)	Standard deviation
Initial force	Promotion of travel agencies important	101	3.92	0.80
	The early Korean tourists were organised by only a few travel agencies	101	3.38	0.94
	The early Korean tourists were organised by travel agencies operated by ethnic Korean Chinese	102	3.45	0.98
	The early Korean tourists were transferred from Guilin	99	3.04	1.06
Push force	Director of Korea Tourism Bureau visiting Zhangjiajie was important for expanding the Korean market	102	4.29	0.67
	Government promotion facilitated growth of Korean tourist market	99	4.09	0.80
	Government invited the early Korean visitors to Zhangjiajie	100	3.26	1.03
Pull force	Zhangjiajie did not provide 'zero fee' before growth of Korean market'	100	3.28	1.18
	Low price is the main attraction for Korean tourists	101	3.24	1.16
Operating force	Enterprises improved facilities for receiving Korean tourists	101	3.96	0.80
	'Zero fee' guaranteed low price	100	3.65	0.93
	Reliable supply of Korean tour guides	102	3.92	0.75
Essential force	Beautiful mountain scenery in Zhangjiajie guarantees its success in Korean market	102	4.24	0.90
	Local government created a favourable external environment to attract Korean tourists	101	3.84	0.87
	Government bodies put in big effort to market Zhangjiajie in Korea	100	4.07	0.89

Source: Authors' survey.

emerged in tourism to Zhangjiajie as a result of situational motivations and push factors. Segmenting travellers on the basis of motivation factors is a recommended method for analysing tourism of this type (Crompton, 1979; Johns and Gyimothy, 2002).

Tourist's motivations have been identified as being important influences factors on the choice of travel destinations (Crompton, 1979; Iso-Ahola, 1982; Nicholson and Pearce, 2001). Motivations refer to individual internal forces and psychological needs that cause a person to engage in travel activity and lead to tourist action (Crompton, 1979; Pearce, 1996).

In the case of Korean tourists visiting Zhangjiajie, what are the factors motivating their visits? Because the local government continues aggressive promotion to attract more Korean tourists, it is expected that the number of Korean visitors will continue to grow, and so they will have a significant impact on tourism development in Zhangjiajie. Therefore, this chapter addresses the driving forces behind this growth and attempts to develop a model for understanding destination development.

31.3. Methodology

The research endeavours to explain why Zhangjiajie is attractive to Korean visitors and considers how this attraction can be sustained. For this purpose, an understanding of the interaction between push–pull factors is essential. Furthermore, the interaction between demand and supply plays a fundamental role in attracting Korean tourists. Consequently, surveys on Korean tourists in Zhangjiajie, plus surveys and interviews on individuals involved in travel and tourism at Zhangjiajie, were conducted for data collection. However, it is only the results of the latter surveys that are reported here in any detail.

Interviews were undertaken from July 2007 to June 2009, with key staff members from tourism bureaus, national park management, public administration, and travel agencies, covering topics including how the Korean market was developed, why it grew so quickly, their role, and contribution of Korean tourists to this growth. The results from these surveys are reported here.

Surveys were completed of a sample of employers and employees involved in tourism (tourism practitioners) at Zhangjiajie during the period 21 to 30 July 2008. Altogether 110 questionnaires were distributed and 102 valid responses were collected. The response rate was very high because researchers had been working with many of these correspondents for over a decade. Respondents were asked to rank their

degree of agreement with the statements provided on the questionnaire. The survey used a five-point-Likert scale from one (completely disagree) to five (completely agree). SPSS 9 was used in the data analysis. Tables 31.2 and 31.3 present the main findings from the survey of tourism practitioners.

Table 31.2 reports the responses of practitioners about factors attracting Koreans to Zhangjiajie and how Zhangjiajie became popular with Korean tourists, while Table 31.3 covers the impacts and implication of the 'Korean wave'. Column 2 in both tables lists statements provided in the surveys. When analysing the data authors of this chapter categorised these statements into five forces (influences) in Table 31.2 and into four groups of impacts in Table 31.3, as a framework for further discussion to be undertaken later in this chapter. Consensus with the statements supplied on the questionnaires was significant as indicated by the high average value (M), while standard deviations were within the acceptable ranges. This result is not surprising because it conforms with the results of interviews completed in July 2007 with key staff in tourism sectors, and lends support to the survey results.

31.4. Findings: Five Forces and the Korean Tourist Market

Based on information obtained from the interviews and especially the results reported in Table 31.2, 'five forces' seem to have driven the genesis and development of the Korean tourist market at Zhangjiajie.

31.4.1. *Initial force: Pioneers in Korean tourism market*

There was a common agreement during the interviews that long before the Chinese government promoted Zhangjiajie in the Korean market, some travel agency professionals of Korean ethnic background, who had worked in Guilin, transferred to Zhangjiajie, and began organising Korean nationals to visit Zhangjiajie. They started promoting Zhangjiajie to Korean travel agencies in 2001, and organised a group of Korean travel agents to experience Zhangjiajie in early 2002. These agencies were impressed by Zhangjiajie, and worked hard in promoting it amongst Korean tourists, leading to speedy growth of Korean arrivals in Zhangjiajie beginning from early October 2002. This signified the start of 'Korean Wave'. In addition, as a consequence of worsening diplomatic relations between Korea and Japan in 2003, many Korean tourists looked at China as an alternative destination, reinforcing the attractiveness of Zhangjiajie.

Table 31.3. Views of tourism practitioners about the impacts of the 'Korean Wave'.

Impacts	How much do you agree with the following statement? (Scale is as in Table 31.2)	Stakeholders' feedback		
		Sample size	Average (M)	Standard deviation
Improvement in tourist supply	Increased the quality of tourist supply	101	3.92	0.67
	Improved service quality of tourism industry	99	3.83	0.77
	Governments invested in hard and software for Korean tourists	99	3.82	0.87
'Zero fee' or 'negative fee'	Korean inbound tourists stimulated tourist shopping at Zhangjiajie	102	3.82	0.86
	Fierce competition in the tourism industry	100	3.66	0.97
	Korean market encouraged 'Zero fee' or 'Negative fee' at Zhangjiajie	100	3.61	0.95
Experience	Accumulation of knowledge about the inbound tourism market	101	4.09	0.63
	Expertise from Korean market development may help in developing site-based tourism for visitors from other Asian countries	101	4.08	0.81
	Expanding global horizons of managers	101	3.84	0.73
Cultural interaction	More confidence in the value of tourism resources	101	4.02	0.73
	Tourist influencing the local culture	100	3.57	0.96

Source: Authors' survey.

Apparently, some pioneering travel professionals in China and Korea took a leading role in identifying Zhangjiajie as a growth area for the Korean market. They organised the earliest groups, provided confidence for the industry, and influenced public policy for developing the Korean market. The survey results indicated in Table 31.2, clearly confirms that the initial efforts of the pioneers in promoting Korean tourist visits was commonly accepted as the main generating force for the development of Korean visits to Zhangjiajie.

31.4.2. *Push force: Government support and aggressive marketing*

Seeking to escape has been the major reason for tourists travelling (Iso-Ahola, 1982). The push-and-pull paradigm provides a reasonable approach for understanding tourist behaviour. 'The concept incorporates the theory that people travel because they are pushed into making this decision by internal forces and pulled by external forces of the destination attributes' (Uysal and Jurowski, 1994).

Motivations of tourists may be divided between those that are intrinsic and extrinsic in nature (Pearce, 1996). Push factors are intrinsic motivations. They are individualistic and often intangible attributes that create a desire to travel to different destinations (Crompton, 1979; Gartner, 1993).

Push factors have been referred to as motivational power or needs of individuals arising as a result of disequilibrium, tension, or dissatisfaction. They create a desire to travel, and they explain why a tourist decides to make a trip and what type of activity, experience and destination they seek (Crompton, 1979). Common push factors may include relaxation, knowledge expansion, and visiting family members, and pull factors come from natural and historic attractions, cost, provision of facilities, accessibility, and safety (Jang and Wu, 2006).

Pull factors 'emerge as a result of the attractiveness of a destination as it is perceived by those with the propensity to travel' (Uysal and Jurowski, 1994). Fakeye and Crompton (1991) used a popular winter destination in Texas to illustrate six pull factors comprising 32 attribute factors. Pull factors can be tangible resources, such as natural and cultural attractions, or facilities, as well as intangible factors including tourist perception of the destination, image, and reputation (Uysal and Jurowski, 1994).

Uysal and Jurowski (1994) suggested that a simultaneous examination of tourist motivational factors and the destination attributes may be useful for marketing and destination management. Push-and-pull factors are

fundamentally related to each other. Internal forces push people to travel, and at the same time, the pull forces of the destination, influence the choice by people of a particular destination (Klenosky, 2002).

Applying these theories to Zhangjiajie, the local government's effort in public relations and aggressive marketing contributed significantly to the formations of 'Korean Wave'. Zhangjiajie City Council invited Mr. Hongkui Zhao, the Director of Korea Tourism Bureau, to attend the International Forest Conservation Festival that was held in November 2001. Mr. Zhao was highly impressed by the natural beauty and folk culture of Zhangjiajie, and promoted it after his return to Korea. In addition, senior public servants worked together with the tourism industry, by regularly visiting Korean travel agencies and engaging in promotion of Zhangjiajie to Korea. Whenever Zhangjiajie or Hunan Province holds some events, the government makes sure Korean officials and tourism industry are invited. Sister city relationship has been established between Zhangjiajie and Hedong County in Korea, leading to frequent visits and communication between Zhangjiajie and Korea.

The surveys also indicate the importance of the push power played by Chinese governments, as indicated by such comments as 'Director of Korea Tourism Bureau visiting Zhangjiajie', 'government promotion', 'government invited the early Korean visitors to Zhangjiajie, (Table 31.2). Consequently, the support from local government and aggressive marketing involving the public service sector provided a strong push for Korean tourists in the early stage of market development.

31.4.3. *Pull force: change in tourism supply*

Some travel agencies in China survive by offering close to cost inclusive packages to attract tourists, while encouraging shopping at specified tourist retailing outlets to earn commission as a way to make their operation financially viable. This practice is often referred to 'zero fee', or even 'negative fee'. This practice had become prevalent in Guangxi, Hainan and Yunnan in the 1990s but was not available at Zhangjiajie because there was no retailing business that was willing to provide constant commission for travel agencies or tour guides. However, some tourist retailing businesses that operated in Guangxi and which were familiar with 'zero fee' practice established 15 large tourist shopping complexes as at Zhangjiajie in 2000 and 2001. They cooperated with the tourism industry and made it possible for travel agencies to offer lower inclusive fees to attract tourists. Fortunately, all this occurred at the early stage of Korean tourism to China, and facilitated visits of tourists

to Zhangjiajie to experience its attractive and unique resource at a low price.

In addition, Korean airlines quickly noticed Zhangjiajie as a growing market, and worked with Korean travel agencies to offer chartered air service directly from Korea to Changsha or Zhangjiajie. This practice helped reduce travel costs, and encouraged Korean travel agencies to organise more tourists to come to Zhangjiajie.

Pull forces for tourism were generated by travel agencies pursuing a 'zero fee' policy and Korean airline expansion to serve this area. These pull forces played an important role in the rapid growth of the Korean market. The survey confirmed that 'Zhangjiajie did not provide 'zero fee' before the growth of Korean market' ($M = 3.28$) and that 'low price [of tours] is the main attraction for Korean tourists' ($M = 3.24$) (Table 31.2).

31.4.4. *Operating force: tourism businesses and their attitude*

For a fast growing tourism market that requires rapid growth in the supply of tourism services, shortage in the availability of tour guides with foreign language skills often becomes a bottleneck (Wen and Tisdell, 2001). However, because of the cultural connection between ethnic Korean Chinese who live mainly in the northeast part of China, and Korean nationals, China could provide large number of tour guides for Korean tourists. With the coordination between travel agencies and local government, hundreds of ethnic Korean Chinese came to work at Zhangjiajie. They were awarded special Tour Guiding Certificates by the local authority. The guaranteed supply of Korean language tour guides and experienced travel agencies contributed to the growing capacity of Zhangjiajie to cater for Korean tourists.

Attractive profit margins in a market segment provide incentives for tourism enterprises to engage in that segment. Generally speaking, inbound tourism produces high profit, but at the same time it requires high initial investment and involves high entry barriers in China. The tendency of Korean tourists to engage in collective purchasing and in high levels of consumption, nevertheless, has provided a stimulus for the operation of 'zero fee', pushing down the travel cost and leading to sustained profit growth for travel agencies. The following results from the survey are relevant: 'enterprises improved facilities for receiving Korean tourists' ($M = 3.96$), 'zero fee' guaranteed low price ($M = 3.65$), and 'reliable supply of Korean tour guides' ($M = 3.92$) (Table 32.2).

31.4.5. *Essential force: quality scenery and convenient infrastructure*

Korean people enjoy mountains, and their folk culture presents numerous legends in relation to mountains. Factors influencing destination choice have received a wide range of comments in the literature (Oppermann, 1999). Park and Yoon (2009) conducted factor analysis on Korean rural tourism and identified six dimensions of motivation, as being important, namely relaxation, socialisation, learning, family togetherness, novelty, and excitement. They divided the main motivations for Korean rural tourism into four segments, namely family togetherness, passive tourism, want-it-all, and learning and excitement.

Motivational factors play a fundamental role in causing a person to travel. The tourism literature indicates that a wide range of variables influence tourism motivation. Lundberg (1971) pioneered this subject and developed a group of 18 motivations as factors influencing travel decisions. Satisfaction and benefits sought by travellers have been identified as amongst the most influencial factors for tourism (Loker-Murphy and Perdue, 1992).

Since mountains on the Korean Peninsular are mostly located in the North People's Republic of Korea (NPRK), and due to the segregation of Korean from NPRK, Koreans have been deprived of access to mountains at home. Consequently, the miraculous mountain image of Zhangjiajie coincides well with the 'heavenly mountain' in Korean culture. Korean tourists are often so thrilled by the landscape of Zhangjiajie that they cannot stop wowing, leading to the nickname of 'wow wow group' for Korean tourists. Beautiful mountain scenery has become the elementary power to attract Koreans.

Local government plays a major role in establishing preferential policy to benefit Korean tourists. For instance, Korean tourists can apply for a passport on the same day if they lose it. It was the first location in China to allow the free exchange between Korean and Chinese currency. Tour guides requiring knowledge of the Korean language at Zhangjiajie did not have to pass the National exam for tour guiding licence, but were offered an alternative exam at the local level so they could obtain their licence quickly, although this licence limits them to work only in Zhangjiajie. In addition, the government has financed signage in the Korean language.

Most respondents agreed in the survey that 'beautiful mountain scenery in Zhangjiajie guarantees its success in Korean market' ($M = 4.24$), and that 'government bodies put in big effort to market Zhangjiajie in Korea'

($M = 4.07$) (Table 31.2). These two factors combined provide major reasons why Korean tourism has developed successfully of Zhangjiajie.

31.5. Analysis: Impacts of the Korean Tourist Arrivals to Zhangjiajie

31.5.1. *Balancing seasonality of tourism*

Before the boom of Korean market, fluctuation of tourist numbers at Zhangjiajie was determined by Chinese domestic holidays. Because of differences in Korean and Chinese public holiday arrangement, and the flexibility of leisure time in the Korean senior market, seasonal fluctuations in tourist numbers have been reduced. With the increasing number of Korean visitors coming to Zhangjiajie low seasons are less marked (Zhang and Bao, 2007). With increasing tourist numbers over these 20 years, there are now three peak seasons instead of only one peak as was the case in the 1980s, and the gap between the peak and low seasons has been decreasing.

31.5.2. *Improvement of tourist supply*

Tourist accommodation was developed at Zhangjiajie after the mid-1980s. Around 2000, the majority of tourist hotels were two or three star hotels. With the growing Korean market, and the relatively high expectations of Korean tourists about accommodation, only hotels better than three stars were allowed to receive Korean tourists. Consequently, higher quality hotels were established at Zhangjiajie, and there were more than forty hotels with three stars and above. More hotels with five star facilities are still under construction.

Transport was also improved as a response to Korean market. Lotus Airport at Zhangjiajie started direct flights to Seoul and Pusan in Korea. Flights from Seoul to Changsha, and flights from Korea to Shanghai, Beijing, Xian, Guilin, and then with transfer to Zhangjiajie, were negotiated with assistance from the government. The highway from the Huanghua Airport at Changsha to Zhangjiajie was improved. Businesses in Zhangjiajie purchased over 700 luxury tourist coaches, and established the Chinese Korean Tourist Coach Service. Bus drivers were given special training to serve Korean tourists.

As indicated by Table 31.3, respondents to the survey agreed that growth in Korean tourist market 'improved service quality of tourism industry' ($M = 3.83$) and 'encouraged government to invest in hard and software for Korean tourists' ($M = 3.82$).

31.5.3. *Impacts on tourism market operations*

Zhangjiajie tourism provides good quality tourism at low price, and it depends on tourist shopping to finance its 'zero fee' or 'negative fee' operation. With the increasing number of Korean inbound tourists coming to Zhangjiajie, the commission earned by tour operators continues to rise at tourist shopping areas. However, that reliance on shopping commissions has damaged the reputation of tourism in China. Broadcast of information about Chinese tour guide collecting commissions based on the number of Korean tourists shopping in Beijing caused protests in Korea. Warnings at airports in Korea (such as 'no shopping in China, no tricky deals') reflect Korean distrust in China tourism.

On the other hand, the survey results reveal that growth in Korean market helped with 'accumulation of knowledge on inbound tourism market development' (M = 4.09), and in 'expanding global horizons of managers' ($M = 3.84$) (Table 31.3).

31.5.4. *Interaction of Chinese and Korean culture*

Tourism employees with the Korean language skill from Northeast China have been playing a major role in facilitating Korean inbound tourism. There are more than 2,000 ethnic Korean Chinese working at Zhangjiajie. About 40 work in organising travel groups, 800 are tour guides, and the rest work in other tourism-related businesses. They almost work independently with Korean travel agencies, and provide an indispensable linkage for Korean tourists in China.

Moreover, the survey confirmed that with increasing Korean tourists, and local residents have 'more confidence in the value of tourism resources' ($M = 4.02$), and they have realised that 'tourists influences the local culture' (3.57) (Table 31.3).

31.6. Conclusions

The number of inbound tourists is a major indicator of destination development. However, as a result of the poor availability of time series data, it has been difficult to closely observe the formation and shift of inbound tourism market of Zhangjiajie. Ironically, development of new inbound tourism markets requires particularly the understanding of the process and path of inbound market development.

The study of Korean market development at Zhangjiajie shows that the inflow of inbound tourism is the product of multiple forces. There is

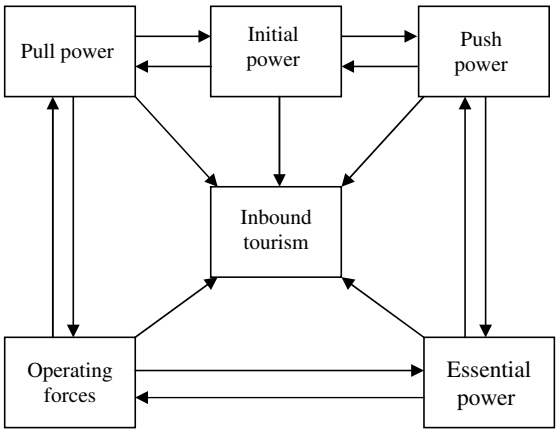

Fig. 31.1. The power structure of an inbound tourism flow.
Source: Authors' construction.

no single force that can assure the successful growth of inbound tourism. Amongst these forces, initial, pull, and operating forces were generated by the market, while push and essential powers were stimulated by the government. Inbound tourism needs to be initiated by the market mechanism, but requires government support in China. The combination of market and government mechanisms jointly produced successful growth in Korean tourist visits to Zhangjiajie. The type of interactions involved in the development of this market is illustrated by Fig. 31.1.

The study of Korean inbound tourism at Zhangjiajie highlights an important path for developing a new inbound tourism market. It started from tourism businesses with core competency in the target market. With government support and aggressive marketing, combined with international air service, introduction of influential travel agencies, and the supply of public resources to guarantee the smooth operation of market mechanism, a new overseas tourism market has been nurtured within a relative short period of time.

This case study analyses only one tourism development model, and other patterns of successful development of tourism to a site may also occur. It may be risky to depend so heavily on a single market, and market diversification is urgent at Zhangjiajie. It is worth noting that the number of Korean tourists to Zhangjiajie is decreasing currently, and the majority of the tourists are the domestic visitors from other parts of China. In addition, minimising or limiting the negative impacts caused by increased numbers of visitors should also be a part of tourism development policy.

The authors are aware of some limitations of this study. For example, the measurement of motives for travel could be more comprehensive. In addition, the sample size of 102 Korean tourist practitioners used in the survey is not sufficient for identifying visitor attributes. Further research will endeavour to address these problems.

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Chapter 32

THE CONTRIBUTION OF TOURISM TO THE DEVELOPMENT OF FIJI AND OTHER PACIFIC ISLAND COUNTRIES

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Abstract: Over the last two decades, tourism has become the major driver of economic growth in many Pacific Island countries (PICs), most notably Fiji, Cook Islands, Vanuatu and Samoa, and it is becoming increasingly important in others. Conventionally, its main economic impact is generally considered to be in providing foreign exchange and employment, and contributing to the gross domestic product. While statistical data are often unreliable or even non-existent, such indices are important, and an attempt is made in the paper to compare the differential economic impacts of tourism in PICs. At the same time, other and less obvious forms of economic impacts are also relevant. The structure of the tourism industry, especially the hotel and guest house sector, can be quite different across island states, and whereas new institutional players, in the form of transnational hotels, have an important role in tourism development in Fiji, they are much less apparent in such PICs as Tonga, Samoa and Cook Islands. In addition, forms of poverty alleviation other than those conventionally discussed are also relevant. Further benefits, even less easy to categorise, come with the more *ad hoc* exercise of corporate social responsibility by (large and small) hotels, which includes, but is not restricted to, assistance in medical and educational projects. This chapter discusses the above issues and assesses the region's potential for future tourism, with due reference to the need for political stability and a stable global financial environment.

Keywords: Development; employment; foreign exchange; GDP; Pacific island countries; poverty alleviation; structure of tourism.

32.1. Introduction

Over the last two decades, tourism has become one of the key drivers of economic growth and sustainable development in many Pacific Island countries (PICs), most notably Fiji, Cook Islands, Vanuatu and Samoa, and it

is becoming increasingly significant in others. Its importance in this regard has been widely recognised, and all indications are that its role in the future development of the region will, if anything, be enhanced (AusAID, 2008, 2009; UNESCAP, 2008; ADB, 2008).

In this chapter, a broad survey will be provided on tourism's current developmental role in PICs, and will include such conventional indices as increased foreign exchange, government revenue, employment and contributions to the gross domestic product. There will also be a focus on the structure of the tourism industry, especially the hotel and guest house sector, which can be quite different across island states, and a discussion of the role played by relatively new institutional players, e.g., transnational hotels, in tourism development across the region. As will be indicated, while they are extremely important to the Fijian economy, they are less influential in such PICs as Tonga, Samoa and Cook Islands.

There will also be reference to other, less obvious (and perhaps more intangible) forms of economic impacts. Forms of poverty alleviation other than those conventionally discussed are also relevant. Small rural indigenous enterprises, for example, may operate on less obviously capitalistic lines yet nevertheless bring considerable economic benefits to communities. They may also contribute to community welfare through direct and indirect support for community members' educational and religious obligations. By contrast, other locally-owned, small-scale enterprises may depend on success of large-scale tourism in that they draw income from visits by tourists from larger, international hotels. Further benefits, even less easy to categorise, come with the more *ad hoc* exercise of corporate social responsibility by (large and small) hotels, which includes, but is not restricted to, assistance in medical and educational projects.

In the following pages, there is, first, a discussion of international tourist arrivals, followed by a section on the contribution of tourism towards foreign exchange, government revenue, employment and to GDP. Then follows an analysis of the structure of tourism in PICs, a review of the broader debate as to whether tourism is an impetus to appropriate development, and the final section provides some concluding comments and implications for policy on tourism development.

32.2. International Arrivals to PICs

Tourism's importance to PICs is readily observable in the (albeit inadequate) statistics that are available concerning tourist arrivals over the last decades (Table 32.1). In 2010, Fiji, the dominant destination in the region

Table 32.1. International arrivals to PICs: 1985–2010 (selected years).

Country	1985	2007	2008	2009	2010 (%)	% increase 1985–2010	% change 2008–2010
Cook Islands	29,000	97,019	94,184	101,110	102,156 (7.1)	252.3	8.5
Fiji	228,000	539,255	582,602	542,186	631,868 (43.8)	177.1	8.5
French Polynesia	122,000	218,241	196,496	160,447	153,919 (10.7)	26.2	−21.7
Kiribati	3,000	4,709	3,871	3,944	4,701 (0.3)	90.0	21.4
Marshall Islands	3,000 (est)	7,200	6,022	4,923	4,563 (0.3)	52.1	−24.2
New Caledonia	51,000	103,363	103,672	99,379	98,562 (6.8)	93.3	−4.9
Niue	2,000 (est)	3,445	4,748	4,662	6,214 (0.4)	210.7	31.0
Papua New Guinea	30,000	104,122	120,139	125,891	146,933 (10.2)	389.8	22.3
Samoa	39,000	122,250	121,578	128,804	129,487 (9.0)	232.0	6.5
Solomon Islands	12,000	13,748	16,264	18,260	20,300 (1.4)	69.2	24.8
Tonga	14,000	46,040	49,400	50,645	43,823 (3.0)	213.0	−11.3
Tuvalu	1,000 (E)	1,130	1,559	1,622	1,657(0.1)	65.7	6.3
Vanuatu	25,000	81,345	90,654	100,675	97,180 (6.7)	288.7	7.2
Total	558,000	1,341,957	1,391,189	1,253,548	1,441,763 (100)	158.4	3.6
Oceania (million)*	3.8 (est)	11.2	11.1	10.9	11.6	205.3	4.5
Global tourism (mn)	332.7	901.0	917.0	882.0	940.0	181.0	2.5

Source: UNWTO Tourism Highlights: 2010 and 2011 Editions, Madrid: UNWTO; SPTO, July 22, 2011 (personal communication).
*The UNWTO region of Oceania includes all the above countries, along with American Samoa, Australia, Guam, Heard and McDonald Islands, Micronesia, New Zealand, Norfolk Island, Northern Mariana Islands, Palau, Pitcairn and Wallis and Futuna Islands.

and gateway to many smaller island states, received more than 630,000 international visitors (some 44% of the region's arrivals), followed by French Polynesia (11%), Papua New Guinea (10%) and Samoa (9%), which together took 30% of all other visitors. Behind the figures, however, there are numerous stories. Had it not been bedevilled by coups, for example, arrivals in Fiji might have reached more than 800,000 by 2008 (Harrison and Pratt, 2010, pp. 164–165), while the bald figures for Samoa disguise the fact that some 40% of visitors to that PIC are categorised as 'visiting friends and relatives' and only 30% are (separately) categorised as holidaymakers (Government of Samoa, 2009, p. 2).

Despite heavy discounting, arrivals to some countries (e.g., Fiji, French Polynesia, Marshall Islands, and New Caledonia) declined in recent years. A key factor was the global financial crisis, which led to reduced tourism demand in Europe and North America, and arrivals to Fiji were also reduced because of heavy flooding in the Western side in 2009.

However, there was little or no impact on visitor numbers to others (e.g., Cook Islands, Vanuatu, Solomon Islands and Papua New Guinea), which is largely explained by the relative strength of the Australian economy and the corresponding resilience of the Australian tourist market which, with New Zealand, provides the bulk of tourists to English-speaking countries in the South Pacific.

32.3. Contribution to Foreign Exchange, GDP and Employment

In 2005, tourism is said to have been contributing 'approximately 3% to the region's GDP, with international receipts totalling US $1 billion, and had outpaced growth in all other economic sectors (AusAID, 2009, p. 22). This, however, is weighted heavily due to the size of the GDP of Papua New Guinea and to some extent the Solomon Islands, as their share of tourism to GDP is very low. According to UNESCAP, in 2006 'in the Pacific island developing economies as a group, the share of tourism in their GDP averaged 11.9% in 2006, ranging from around 20% in Fiji, French Polynesia and Samoa to 57.1% in Palau (UNESCAP, 2010, p. 180), and to this list may be added Vanuatu and the Cook Islands, both of which are heavily reliant on tourism.

Caution is needed when considering tourism's contribution to GDP and employment, as there are major problems with the quantity and quality of the available data, both generally (Ennew, 2003) and specifically for PICs (Milne, 2005, p. 10). In particular, the World Travel and Tourism Council

(WTTC), a major source of data, has been heavily criticised for making exaggerated claims of tourism's importance (UNWTO, 2008, pp. 2–3; WTTC, 2010, 2011a–d).

Nevertheless, the importance of tourism to the Fiji economy is unquestionable (Prasad and Narayan, 2003; Prasad and Tisdell, 2006). Since the military coup of 2006, it has received considerable attention from the Interim government. This is partly because it is the only industry which has recovered since 2006. Table 32.2 shows the tourism numbers for 2006–2009 and those forecast for 2010–2013. Clearly, the government has taken the rebound in tourist numbers as one of its major achievements and has pinned its hope that tourism will lead the economy back to recovery.

Table 32.2. International arrivals to Fiji, 2006–2013.

	2006(r)	2007(r)	2008(r)	2009(r)	2010(f)	2011(f)	2012(f)	2013(f)
Visitors (000)	548.6	539.9	585.0	542.2	590.0	615.0	630.0	650.0
Average length of stay	9.8	9.5	9.6	9.8	9.6	9.6	9.6	9.6
Earnings (F$M)	822.5	784.2	853.1	816.5	915.1	953.9	977.2	1,008

Source: Ministry of Finance, Fiji (2010, p. 107).
Note: (r) Indicates revised and (f) indicates forecast.

However, although arrivals have increased, gross tourism earnings have not been commensurate with the increased numbers. As indicated in Fig. 32.1, gross tourism earnings adjusted for CPI in 2002 have actually declined.

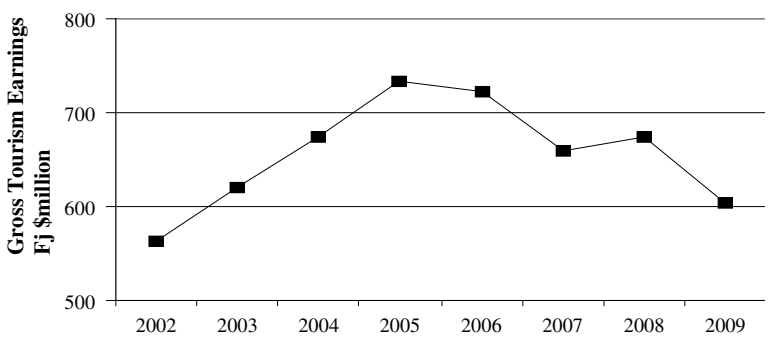

Fig. 32.1. Gross tourism earnings for Fiji in Fiji dollars: 2002–2009 in Fiji dollars at 2002 prices.
Source: Based on Narsey (2010).

Tourism will be one of the key economic drivers in Fiji's economy in future. It already contributes approximately 23% to GDP and provides employment to an estimated 40,000 people. After the 2006 coup, the government rightfully emphasised its importance and in 2011 increased its allocation to Tourism Fiji to nearly F$26.5 million for marketing. Forecasts show that sustained growth in arrivals is expected over the following three years. Such estimates may be optimistic, given stiff competition from similar destinations and, in any case, tourism growth will require significant investment in tourism-related infrastructure, which the Fiji Government's tight fiscal position might not allow. In addition, although in some ways unique, the Fiji tourism product has not changed, and it will be difficult to avoid continued dependence on the New Zealand and Australian markets.

International tourism is also important to the economies of Palau, the Cook Islands, Vanuatu, French Polynesia and Samoa (Table 32.3), both as a source of foreign exchange and in its contribution to GDP. It is also a major employer of labour in the formal sector, though here, especially, estimates vary widely (TRIP Consultants, 2007, p. 7 and 2008, p. 21; WTTC, 2010, 2011 a–d; Lolohea, 2010). Furthermore, government revenues from tourism are increasing. Anticipating further trade liberalisation, many PIC governments are moving away from indirect import duties, hitherto a major source of revenue, and are replacing it with value added tax (VAT) and other forms

Table 32.3. Tourism's economic significance to PICs.

	% of GDP (2007)	International tourism receipts (million US $) (2007)
Cook Islands*++	50.0	—
Fiji*	23.0	676
French Polynesia	20.5	876
Marshall Islands	2.9	5.0
Federated States of Micronesia*	7.3	17.0
New Caledonia	2.5	197.0
Palau*	67.1	97.0
Papua New Guinea*	0.1	4.0
Samoa	19.7	107.0
Solomon Islands*	1.7	7.0
Tonga	6.0	15.0
Vanuatu	28.0	142.0

*2005 figures.
Source: UNESCAP (2010, p. 183) and;
++*Source*: Phillips (2005).

of indirect taxation. If tourism does indeed fulfil its potential, VAT revenue is likely to become a major source of revenue in the future.

There are similar problems with statistical data when considering *leakages* of foreign exchange. The Tourism Council of the South Pacific (TCSP), for instance, now the South Pacific Tourism Organisation (SPTO), suggested that in 1990 more than 60% of all tourism expenditure in Fiji left the country (TCSP, 1992, p. 36), a figure still quoted by many in the region. In other, smaller PICs, the leakage rate is likely to be higher than Fiji *but* — and it is a huge caveat — even with up-to-date figures, such calculations are often based on a range of faulty assumptions and data sets that regularly omit key items of tourist expenditure (Mitchell and Ashley, 2007). In this case, data first collected in 1990 are now most likely to be of limited validity.

Overall, though, tourism is clearly crucial to the economies of Fiji, Cook Islands, Palau, Vanuatu, French Polynesia and Samoa (including its high percentage of VFR tourists, a category often not even included *as* tourists), and is of growing importance in such resource-rich PICs as Solomon Islands and Papua New Guinea. By contrast, in Tonga its contribution is relatively small but constant, and in such PICs as Tuvalu (TCSPa, 1997; Gay, 2010), Kiribati (TCSP, 1997b) and Niue, visitor arrivals remain miniscule, especially of holidaymakers, and tourism has yet to establish a firm foothold.

32.4. The Structures of PIC Tourism

In general, the more developed the tourism industry in PICs, the greater the role of overseas investment and international tourism companies, a situation that has pertained since the 1970s (Britton, 1987, 1989, pp. 116–118) and which has been seen, by some analysts, as indicative of uneven capitalist development and increased dependency (Britton, 1989).

Just as tourism is differentially important across PICs, so, too, is its significance *within* them, and accommodation and other facilities are usually highly concentrated. From information provided by Tourism Fiji (July 2010: personal communication) it evident that in Fiji the gateway to the South Pacific, there are four main concentrations of tourist accommodation: Sigatoka/Nadroga (the Coral Coast), Nadi (the main town in the West and location of the only fully-international airport in the country), the Mamanuca and Yasawa Islands (north-west of Nadi and location of some of the best beaches) and Suva and its wider environs. These four regions account for 90% of all beds in the Fiji, and 69% of all the beds are on the main island of Viti Levu.

In Fiji, foreign operation of tourist accommodation is pronounced. The higher the price of rooms (seen here as a rough indication of quality), the more likely they are to involve international hotel chains, including two hotels owned by the Fiji National Provident Fund operated by international brands (the Holiday Inn in Suva and the Inter-continental at Natadola). In fact, international chains are dominant at the upper levels of accommodation in the Fiji, accounting for 6,456 beds (3,511 rooms), some 30% of all those in the Fiji, and 54% of all rooms in the Premium and High categories of accommodation. In the business sector of the industry, the Indo-Fijian-owned Reddy Tanoa Hotel chain has a major role, while in the islands Northwest of Nadi there are about 30 indigenous Fijian-owned backpacker units *and* several large island resorts (the latter amounting to more than 900 beds) with overseas-born owners who now have Fijian citizenship, categorised here as 'local' (based on information from Tourism Fiji, July 2010).

The structure of the accommodation sector in other PICs varies according to the level of their tourism development. In French Polynesia, where most accommodation is concentrated on the Society Islands of Tahiti, Bora Bora and Moorea, the higher end of the accommodation sector is dominated by transnational companies (Harrison, 2003, p. 12). In Vanuatu, 80% of the accommodation is in Port Vila, on the island of Efate and, as in Fiji, is dominated by expatriate owners and/or operators (Vanuatu Tourism Development Office, 2004, p. 74).

By contrast, in the Cook Islands and Samoa, both of which are developing their tourism sectors, the industry structure is somewhat different. Cook Islands tourist accommodation is centred primarily on Rarotonga, which has more than 70% of the accommodation units and 80% of the rooms. Enterprises are relatively small, with an *average* number of rooms in the eleven hotels of seventy seven and an overall average of all accommodation of eleven rooms (based on Cook Islands Tourism Corporation, 2010, p. 10). And, at least in theory, foreign ownership is minimal, as legislation — with some exceptions — restricts investment in visitor accommodation, ecotourism and restaurants to Cook Islanders. (www.ck/invest.htm). However, some Cook Islanders suggest that, in practice, some foreign ownership is fronted by Cook Island partners, and the definition of quite *who* is a Cook Islanders can be flexible, but the overall pattern is clear.

There is a much greater presence of overseas interests among hotel and guest house *workers* in the Cook Islands. In 2009, no less than 21% of the hotel and guest house workforce was from overseas (mainly Fiji and the Philippines), filling positions spurned by Cook Islanders, who have free

access to employment in New Zealand (Cook Islands Statistics Office, 2010, p. 10).

The structure of Samoan tourism is similar to that of the Cook Islands. A high percentage of visitors (40% in 2008) are Samoans residing overseas who are visiting friends and relatives (Samoan Bureau of Statistics, 2008, p. 2). Already responsible for some 25% of the GDP by sending remittances, such visitors have a very specific economic and social impact, frequently bringing gifts of cash and kind, and also prompt an increase in spending from their hosts. They are *less* likely to stay in commercial accommodation, though many do opt for budget accommodation, which accounts for 32% of the total room inventory (Taufatofua and Craig-Smith, 2010, pp. 95–96).

Most accommodation units are owned and operated by Samoans (often of mixed descent). Even at the upper ('de luxe') end of the market, more than 60% of the rooms are in locally-owned and locally-run establishments. Only seven of fifty-five units providing overnight accommodation are in expatriate hands, and eight 'de luxe' properties account for one third of all rooms. Overall, at the time of writing there are forty-eight accommodation units, averaging seventeen beds, owned and run by Samoans (Samoan Hotel Association, 2009). This, though, may change. The purchase of Apia's Kitano Samoa in 2009 by Reddy's Tanoa Hotel Group, and its subsequent refurbishment as Tanoa Tusitala, while not universally popular (Raicola, 2009), was in line with stated government policy to bring in more overseas investors (Samoan Tourism Authority, 2009, p. 18).

Finally, the structure of tourist accommodation in Tonga is similar to that of Samoa. It is similarly concentrated, with 60% of tourist accommodation on the main island of Tongatapu (mainly in or around Nuku'alofa, the capital) and another 20% in the Vava'u group of islands (Lolohea, 2010; Harrison, 2010). In addition, it is primarily small-scale and locally owned, with an estimated 87 accommodation units and an average of 10.9 rooms. And like Samoa, nearly half the visitors to Tonga are visiting friends and relatives. Other holidaymakers comprise only 38% of arrivals.

32.5. Is It 'Development?'

Bald figures on tourism's contribution to GDP do not, in themselves, indicate who actually *benefits* from tourism. How monies received from tourism are distributed across a given population depends on numerous factors, including the various output multipliers and the element of leakage from the economy. For what they are worth, based as they are on statistics collected in the

early 1990s, the Fiji data indicate relatively high Type I output multipliers for hotels and restaurants and tourist goods (1.87 and 1.94 respectively) and much lower multipliers for the water, air and road transport sectors (Fiji Bureau of Statistics, 2008, pp. 23–24).

The *location* of the tourist goods and services, and their producers, are major factors in benefit distribution. As data provided earlier indicate, a common feature of tourism in PICs is its concentration, both across the region and within states. Consequently, Fiji's prosperity relative to other PICs can be attributed to its developed tourism industry, as can the relative prosperity of Nadi, in the west of Viti Levu, Fiji's largest and most populated island and the focal point of Fiji tourism (Walsh, 2006, pp. 178, 336–337), along with the Yasawas islands which, even in the mid-1990s, were characterised by relatively good housing (Walsh, 2006, p. 177).

Much also depends on the *type* of tourism involved, and debates regularly occur over the spending habits of tourists from different source markets, with a perpetual search for new ones. Long-haul holidaymakers are said to stay longer and spend more (Phillips, 2005, p. 5); cruise ship tourism is put forward as a viable option for PICs (South Pacific Tourism Organisation: 2007) and, at the time of writing, plans for casino tourism, already established in many PICs (Harrison, 2003, p. 13), have been especially contentious in Samoa (www.samoaobserver.ws/index.php?option, accessed on 19 August 2011) and Fiji (www.ukti.gov.uk/uktihome/item/120761, accessed on 19th November 2010). At the time of writing, it is not yet clear whether or not these plans will be implemented. In addition, there has been growing recognition of the economic contribution that previously-ignored backpackers (now 'flashpackers') can bring to PICs (Jarvis and Peel, 2010), and it is argued that PICs should also extend tourism development away from marine-based resorts to cities and towns, thus allowing urban communities to generate income from indigenous culture, art, music and heritage sites (Prasad, 2011). Numerous other niche markets have figured in many tourism development plans, but little attention has been paid overall to *comparing* the spending patterns of different kinds of tourists and, in general, PICs seek to diversify their tourism product and tap into as wide a demand as possible (e.g., Sustainable Tourism Development Consortium, 2007, pp. 55–68; Samoa Tourism Authority, 2009, pp. 15–17).

Perhaps the most fraught debate concerns the comparative role of transnational companies and small-scale locally-owned tourism enterprises in 'development'. The former's contribution was widely disparaged as 'crumbs from the table' (Samy, 1980), and such views continue to be expressed. Given the dominance of TNCs in Fiji and French Polynesia (Harrison, 2003, p. 12),

and their potential influence elsewhere, the question is important (and can be commented on only briefly here). The following observations are relevant.

1. Expatriates in executive hotel positions undoubtedly receive better pay than local employees: even two or three in a 300-room hotel might account for 10–15% of the total wage bill. *However*, it is in a TNC's interest to adopt a localisation policy. As an example, in August 2011 the Accor Group in Fiji, with four hotels and 622 rooms, reportedly employed only three expatriates in executive positions (and has a policy of further localisation);
2. By *international standards*, workers in PIC hotels and guest houses are not well paid, giving rise to some criticism (St. John-Ives and Naidu, 2007). However, TNC-operated hotels usually have comprehensive training schemes, pay more than agricultural enterprises or locally-owned hotels and guest houses (Scheyvens and Russell, 2010, p. 14), and are more likely to be unionised. Furthermore, as past and present evidence from Vanuatu and Fiji indicates, earnings from tourism are commonly used to improve workers' housing and village infrastructure and can reduce rural–urban migration (Vanuatu National Tourism Development Office, 2004, p. 104; Sofer, 1990, pp. 125–128; Kuilamu, 2011; Movono, 2011);
3. As well as employing workers directly, hotels provide opportunities for work and income for other activities, e.g., the sale of arts and crafts and presentation of traditional dances and, *if linkages exist or can be established*, such multiplier effects can lead to the supply of agricultural and other products and services (Sustainable Tourism Development Consortium, 2007, p. 12). However, while small-scale, locally-owned establishments tend to 'buy local', larger hotels, requiring produce that is consistent in quantity and quality, may grow some of their own produce but frequently import much of their fruit, vegetables and meat.[1]

Providing employment opportunities is not necessarily a sign of public spiritedness[2] but international hotels and other tourist-orientated

[1]A recent study of linkages of tourism and agriculture in Samoa found that 70% of fruit and vegetables for three, four and five star hotels and restaurants were imported (Sofield and Tamasese, 2011). Similarly, Berno quotes a Ministry of Agriculture official in Suva as suggesting that in Fiji in 2004 'up to 80% of the food in the tourism industry is imported' (2011, p. 92).

[2]It is common for hoteliers (and other employers) to argue they are fulfilling a public service in employing workers (as if somehow they could operate without them). Nevertheless it *is* in their interests to have a contented staff, without which

establishments make other contributions to 'development' in PICs which *must* be considered if their role is to be fully appreciated. In several PICs, a high percentage of land is communally owned. Many international hotels in Fiji, for example, have to lease land from landowners through the *i-tauKei* (formerly native) Land Trust Board (NLTB), itself a valuable source of community income (Scheyvens and Russell, 2010, p. 24; Sustainable Tourism Development Consortium, 2007, p. 113), and similar arrangements (accompanied by similar difficulties) are found in Samoa, Vanuatu, Papua New Guinea and Solomon Islands (Samoa Tourism Authority, 2009, p. 64); Manning, 2008; Cook and Kofana, 2008; Slatter, 2006).

In addition, many optional activities are evident through the corporate social responsibility (CSR) policies of global hotel companies (Bohdanowicz and Zientara, 2008; McGehee *et al.*, 2009). Indeed, it has been argued that they 'can be a driving force behind improvement in life quality in many less favoured areas' (Bohdanowicz and Zientara, 2008, pp. 155–156).

Research carried out in Fiji supports this view. Bradly (2010, p. 4), for example, notes that in 2004 the annual value of informal support from 39 selected hotels was 'estimated to exceed F$1.3 million (approximately US $790,000)'. Often made to villages associated with hotels, for example, through land lease arrangements, such assistance included 'direct outlays of funds, income foregone, services provided without charge, goods donated to host communities and corporate volunteering' (Bradly, 2010, p. 4).

Similar examples of CSR, involving local and foreign hoteliers, are cited by Scheyvens and Russell (2010, pp. 33–35) and informal enquiries, made by the authors to hotel and other industry members of the Coral Coast chapter of the Fiji Hotel and Tourist Association (FHTA) while preparing this chapter, reveal substantial, if largely ad hoc, hotel involvement in community activities, with a clear focus on health and education, as summarised in Table 32.4. The data are difficult to quantify, but one established FHTA member suggested that over the last decade some $5 million had been contributed to community projects on the Coral Coast.

Imprecise and incomplete though such data may be, they nevertheless indicate that any understanding of the contribution of the hotel sector in the Fiji (and, by extension, in other PICs) to development must take account of much more than contributions to GDP and employment figures.

they would have discontented guests and a higher staff turnover (Bohdanowicz and Zientara, 2008, p. 150).

Table 32.4. Corporate social responsibility activities in 2011 of selected coral coast hotels, Fiji.

Hotel(s)	Outrigger on the lagoon	Accor group	Starwood (Sheraton & Westin)	Shangri-La fijian & coral coast hotels
Employment	Job opportunities to local villages			
Education & training	Scholarship fund for higher education; basic training for school drop-outs; funds for underprivileged students; Maintenance work at local school		School maintenance; Christmas parties for disadvantaged children	Support for four kindergarten schools
Health	Assist Coral Coast hotels with projects; staff give blood	Support charity *Cure Kids* ($1 m. in 6 years); support hospital wards at Nadi & Lautoka hospitals	Donate bedding to local hospitals; support village health checks; Bluesky programme for terminally ill children.	Sigatoka hospital: ambulance, generator, upgrades for staff quarters/canteen, pharmacy, Accident & Emergency Unit, laptops for health centre, Mission International eye team

(*Continued*)

Table 32.4. (*Continued*)

Hotel(s)	Outrigger on the lagoon	Accor group	Starwood (Sheraton & Westin)	Shangri-La fijian & coral coast hotels
Environment	Projects to beautify Sigatoka; rubbish collection	Integrated programme of Environmental management; annual tree planting programmes	Assist with clean-up campaigns	
Social Welfare	Donate equipment to home for single mothers/orphans		Staff visits to old peoples' home; support appeals for disadvantaged children with UNICEF Starwood project; support Yellow Ribbon project to rehabilitate prisoners	
Sports	Sponsor local rugby team			
Other	Attend agricultural shows	Sponsorship of Bula Festival	Support Tsunami Appeals; donations to local churches	All encourage voluntary F$10 guest contributions to Coral Coast community funds

A similar caveat must also be recorded for the economic contributions of small resorts. Earlier research on the effects of one foreign-owned (expensive) boutique island resort in the Yasawa chain in Fiji showed that it was the primary source of cash for the adjacent three villages (total population 700) with which it was most closely associated, affecting nearly all households, and *also* had a significant impact on a much wider region by running annual eye clinics and subsidising education in the area (Harrison, 1999).

Scheyvens and Russell (2010), in their comprehensive review of community benefits from small- and large-scale tourist resorts in the Fiji, note that although locally-owned budget backpacker establishments with low turnover and little (if any) profit are likely to pay lower wages than overseas operators, they nevertheless bring substantial economic and social benefits to communities. This is illustrated by Gibson (2010), whose study of two *mataqali*-[clan-] *owned* backpacker resorts in the Yasawas reveals that, even from early on, they enabled villages to build two churches and two schools, pay school fees and church tithes, obtain electricity for several hours a day, and provided running water for showers and toilets. Such findings are also echoed in other studies of tourism's impacts in the Fiji (Kuilamu, 2011; Movono, 2011) and are likely to apply to small-scale, locally owned establishments in other PICs.

32.6. Conclusions

Problems with tourism in PICs abound. Dependency on only a few markets can be risky, and efforts are being made throughout the region to seek tourists from elsewhere, e.g., India and China. However, it is hard to disagree with ADB analysts, who state: 'The outlook for tourism in the region will largely depend on the prospects for outbound travel from Australia and New Zealand (ADB, 2011, p. 25). In such circumstances, it may be cold comfort to note that, in the past, there was even greater reliance on dominant markets for such primary export crops as sugar.

Such problems are linked to others, and the binding constraints to tourism development in PICs are numerous. They include: limited natural resources (except for such PICs as Papua New Guinea and Solomon Islands); communal ownership of land, which is often seen as a barrier to foreign direct investment; poor accessibility and reliance on a few international carriers to bring tourists to PICs (and the corresponding lack of competitiveness); the apparent lack of financial, human and (sometimes) cultural capital to meet tourist demand and compete with other island destinations, not only in the Pacific, but also Bali, Seychelles, Mauritius and the Caribbean; the

continuing tendency for younger and better educated islanders to emigrate and see their future outside PICs, and the *perception* that political upheaval and domestic unrest have made several PIC destinations unsafe for tourists.

These constraints have been discussed at length elsewhere (Harrison, 2003; Ryan, 2001). Furthermore, as this chapter has shown, PICs are at different stages of tourism development. The structure of their tourism sectors, though normally concentrated and seasonal, is thus also variable. The socio-economic impacts of tourists differ according to tourist *type*, as do the roles in various PICs of transnational companies (that usually operate on behalf of *local* owners under management contracts) relative to indigenously-owned, small-scale enterprises, whose economic contribution, according to formal, measurable criteria, may be much less and yet can still be highly significant in enabling community members to meet familial and religious obligations.

Nevertheless, despite these distinctions, and the urgent requirement for further research in all such matters, international tourism to PICs is crucial in its contribution to GDP, to government revenue, to employment, to foreign exchange, in bringing lease money for collectively-owned land, and generally in bringing a range of other socio-economic benefits to PICs which, while less easy to categorise and sometimes intangible, are nevertheless meaningful contributors to the welfare of local communities. Undoubtedly, as its many critics will note, international tourism to PICs can be improved, but it is equally certain that, despite its problems and constraints, residents of Pacific Island Countries overwhelmingly perceive its benefits to outweigh the costs and want more, and not less, of it. In this respect, flawed though it might be, international tourism remains a 'passport to development' (de Kadt, 1979).

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PART IX

ENVIRONMENTAL AND CONSERVATION MATTERS INVOLVING TOURISM

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Chapter 33

AN OVERVIEW OF ENVIRONMENTAL AND CONSERVATION ISSUES OF CONSEQUENCE FOR TOURISM POLICY

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Abstract: Appropriate tourism policy needs to be developed relative to a wide range of public goods and externality issues at various levels. Environmental and conservation issues and values contribute substantially to tourism experiences where rent, income and the optimum scale of operation and development need to be appraised. On the other hand, a range of environmental externalities in the form of pollution, congestion and general degradation require appraisal and remedial policy. Effective tourism policy will need to be developed to balance a range of objectives which may appear to be pulling in different directions.

Keywords: Climate change; conservation; environment; externalities; public goods; sustainability; tourism policy.

33.1. Introduction: Diverse Threads

Given the vital underpinning of much tourism by environmental and conservation considerations, it is important to explicitly recognise and deal with the various ways those environmental and conservation considerations are important to tourism policy. In some quarters tourism is appreciated as a type of environmental policy instrument leading to environmental improvements and conservation.

More generally though, the operation of the tourism industry in unfettered private markets can lead to distortions in environmental use which can result in the overuse and depletion of the environmental resources underpinning tourism itself. Furthermore, the operation of the tourism industry, whilst potentially providing better environmental outcomes than some other industries, may also need careful environmental remedial attention. Even where the scale of a tourism operation might be considered optimal according to public goods considerations, it can be the case that market

failures and externalities in environmental resources can arise indirectly and inadvertently and these need to be dealt with explicitly.

In the setting of political failure and transactions costs, many tourism destinations can seem over-managed and the priority for dealing with the environmental spillovers of tourism should be on a case-by-case basis with explicit and relevant environmental quality instruments as the problems emerge.

33.2. Key Emerging Issues for Tourism and Environment

There are a number of key emerging environmental issues for tourism. These include the increasing demand for tourism goods and services, increasing energy use and climate change, impacts on land use, impacts on terrestrial and marine ecosystems, species survival and the sustainability of tourism enterprises.

33.2.1. *Increasing demand*

There is a strong increasing tourism demand associated with development. With increasing wealth, more people want to travel. World income is increasing and tourism is a big and growing sector of the economy. Countries such as China and India are growing rapidly as source countries for tourists as income increases there. Chinese tourists, for example, increased expenditure on tourism by four times since 2000 (UNWTO, 2011).

In 2007, there were 898 million international tourists worldwide (Dragun and Jakobsson, 2009) compared with around 700 million in 2002 (Gössling, 2002). According to an UNWTO forecast, international tourist arrivals are projected to increase by some 4% to 5% in 2011.

In 2010, international tourism receipts are estimated to have reached US$919 billion worldwide, up from US$851 billion in 2009, an increase of 5% in real terms (UNWTO, 2011). The direct contribution of travel and tourism to GDP is expected to be in the order of US$1850 billion in 2011 (WTTC, 2011).

This increasing demand from greater numbers of tourists generates economic benefits, but also generates increased pressure on environmental resources and the associated tourist infrastructure.

33.2.2. *Energy use and climate change*

Tourism contributes to climate change predominantly through emissions produced through transport related purposes. Accommodation and tourist activity services at the tourist destinations also contribute but to a

Table 33.1. Global tourism-related energy use and resulting CO_2-e emissions (Gössling, 2002). PJ — Peta joules ($J \times 10^{15}$) CO_2-e emissions — CO_2 emissions are calculated as CO_2-equivalents (CO_2-e) to account for the direct and indirect additional warming effects of N_2O and H_2O.

Category	Energy use (PJ)	Energy use (% total)	CO_2-e emissions (Mt)	CO_2-e emissions (% total)
Transport	13,223	94	1,263	90.3
Accommodation	508	3.6	81	5.8
Activities	350	2.4	55	3.9
Total	14,081	100	1,399	100

smaller extent. Transport, which may be by air, car, bus, train, or ship, accounts for by the greatest proportion of energy use and CO_2 emissions. Gössling (2002) undertook a detailed estimation of energy use and emissions, the results of which are reported in Table 33.1.

From this analysis, leisure-related energy use corresponds to about 3.2% of global energy use and the CO_2 emissions may be around 5.3% of the global total (Gössling, 2002). These levels are significant, but not out of line with the contribution of tourism to global GDP which has been estimated at in the order of 6% to 7% (Fossati and Panella, 2000).

As well as contributing to climate change, tourism is affected by climate change in multiple ways. Global warming will alter the relative attractiveness of particular areas as tourist destinations, for example sea-level rises will affect coastal areas, which are major tourist destinations; warmer temperatures may mean less snow and melting glaciers, and temperature and climate changes will alter the distribution and survival prospects of species and ecosystems which are currently tourist attractions.

Maddison (2001) notes that a major factor in choice of destination and time of travel for British tourists is the temperature at the destination. Thus, if climate change causes warmer temperatures, it could result in British tourists traveling less, with welfare gains to British tourists, lower emissions and less impact on threatened environments. Consequently, climate change may result in changing destinations and areas of development for tourism (Maddison, 2001).

33.2.3. *Land requirements for tourism infrastructure*

Worldwide, large areas of land are used to provide the infrastructure and amenities required to service the tourism industry. In addition to the land

used for building accommodation, tourism also requires airports, roads and railways, ski areas, marinas, golf courses, restaurants and so on. Facilities are also required for waste management, sewage disposal and the provision of water and electricity.

Accommodation must be provided for workers supporting the tourist industry, particularly at more remote or specialised sites such as ski resorts or nature reserves where there is no nearby town.

Where tourism is an important economic activity in a region, the industry may attract migrants in search of job opportunities, who will also require housing and infrastructure services.

Construction of infrastructure can lead to environmental degradation, for example, erosion related to building roads in mountainous and coastal environments. Although in aggregate the land area used for tourism facilities is not large Gössling (2002) calculates about 0.34% of the Earth's land is directly used for this purpose), the environmental impact may be significant because many tourism destinations are in environmentally sensitive areas.

33.2.4. *Coastal and marine environments*

Coastal and marine environments are often both attractive tourist destinations and environmentally fragile. Development can be concentrated in particular areas and may cause considerable damage, with erosion, lower water quality, nutrient enrichment and habitat destruction. Bozec *et al.* (2008) found that coral reefs close to areas of tourist development were considerably more degraded than those near less developed areas.

Cruise ships can have major impacts through the construction of wharfs, reef damage from anchors, pollution and the introduction of non-native species (Gössling, 2002). Damage can also be caused to reefs by people walking on them, dragging small boats over them and taking souvenirs.

33.2.5. *Species and biodiversity*

Tourism can have both positive and negative effects on the conservation of species and biodiversity. The income from tourism can assist in conservation programs and in providing alternative income and employment opportunities to activities which would result in species extinction. The positive experiences and increased knowledge of tourists may result in political pressure and a greater willingness to invest in conservation activities.

Conversely, humans' enthusiasm to observe wildlife can have negative effects, even when intentions are good. These may include interference with breeding and feeding when animals are disturbed, supplementary feeding

of wildlife, and habitat clearing and modification to enable easier viewing (Green and Higginbottom, 2001; Higginbottom and Tribe, 2004).

Wildlife tourism can lead to increased death or injury of animals with varying effects on populations. Killing may be deliberate (hunting, fishing, souvenir collection, elimination of problem animals) or accidental, for example through vehicle collisions, spread of disease, trampling and habitat disturbance (Higginbottom and Tribe, 2004; Gössling, 2002).

33.2.6. *Sustainability issues in tourism*

Tourism has the potential to be a long-term sustainable industry compared to many alternatives such as forestry or agricultural development, but sustainability will depend on the scale of the industry. There can be a vicious cycle with tourism and environment — tourism uses environmental resources, the environmental resources become degraded and tourism diminishes (Fossati and Panella, 2000).

Tourism must be sustainable in environmental terms, as well as being viable and productive in economic and social terms. If the business is not sustainable economically, there will be insufficient income to ensure conservation of the environment and the resources on which tourism is based. If an economic downturn causes tourism businesses to fail, there may be insufficient resources to rehabilitate the site that the business used.

Ecotourism is promoted as a special case of tourism that is likely to be more sustainable and have less impact on the environment than mass tourism or other alternative uses, but ecotourism also has some difficulties. It can be considered as an elitist activity, largely confined to the wealthy, and it may result in local communities being displaced or denied access to certain areas. The presence of humans will impact on wildlife, even if numbers are controlled, and tourist infrastructure is still required.

33.2.7. *Valuation of environmental resources*

Tourism relies heavily on the use of environmental resources. The 'public good' nature of many environmental attributes, in particular non use values, means they are generally underpriced as there is no competitive market in which to establish a price for them. This in turn results in the quantity of environmental goods and services supplied (or natural areas conserved) being too small (Jakobsson and Dragun, 1996; Tisdell, 2003).

As well as the failure to recognise the positive value of the environment, the failure to appropriately price negative externalities arising from tourism (such as pollution and species loss) also leads to market distortion and an

incorrect allocation of environmental resource use. There has been limited economic analysis of the externalities of ecotourism, and further research is warranted in order to evaluate the costs and improve the allocation of resources.

33.3. Perspectives on Tourism Policy

Tourism policy is fundamentally diverse as a function of complex and widely different perspectives of problems and prospects. Current perspectives of tourism policy tend to be dominated by issues relating to maximising the financial income and wealth which can be generated (Skene, 1995; Dwyer *et al.*, 2004), with subsidiary emphasis on tourism being a greater generator of wealth than some alternative industries, being more sustainable than those alternative industries and generally providing more beneficial outcomes for environmental conservation than alternatives. Of course, when tourism is operating, the focus turns directly to the environmental consequences of tourism and the need to deal with the negative impacts.

Where tourism is recognised as a valuable contributor to a nation's financial economy, policy focus turns to the obvious financial issues of employment, investment, foreign exchange earnings, public development in infrastructure and the like (Smith, 1995; Tisdell and Roy, 1998). In terms of environmental impact, the development of infrastructure such as ports, roads, utilities, and accommodation will generate potentially negative consequences, whilst the enhancement of local markets for food and support merchandise can generate additional demands on natural resources (Fossati and Panella, 2000).

As a function of unique spatial and ecological characteristics, it is appropriate to consider different market structures for certain tourism businesses. Monopoly operation might be a relevant structure to manage the level of use of certain tourism resources, and this raises the prospect of considering the extraction of resource rent and applying environmental damage charges directly. The unique environmental characteristics of some alpine areas of the Snowy or the fantastic dunes of Cooloola and Fraser Island invite a strictly managed regime of tourism use which is amenable to considerations of resource rent extraction in relation to the public ownership and interest. Ecotourism questions are a special policy issue in this setting, with a good deal of focus on positive conservation possibilities being challenged by considerations of elitism and equity.

Market failures and distortions generated by public decision making failure can result in tourism infrastructure and industry of inappropriate

size and structure, with over-exploitive and unsustainable environmental consequences. At another level changes in exchange rate policy can cause a national tourism industry to become financially unviable overnight, inevitably bankrupt tourism operators who are then unable to maintain their own infrastructure, let alone have surplus resources to husband and invest in their local natural environment which provides the foundation for their business.

Implicit in much of the writing on tourism as 'good economic business', is the perspective that tourism is an economic activity with better and more sustainable environmental outcomes than some other economic activities (Lundie *et al.*, 2007). Clearly, using a beach for recreational water sports can provide long and ongoing revenues which might be sustainable, whilst mining the beach for minerals provides a once off windfall which forecloses other economic activities and generates environmental damage, some of which is irreversible as in the case of the destruction of aquifers (NSW Department of Infrastructure, Planning and Natural Resources, 2005). In some quarters, tourism as an economic activity can be a form of environmental protection instrument.

Other positive elements of tourism as good economic business, can relate to the preservation of indigenous cultures which can be linked to sustainable environmental outcomes, the extraction and provision of financial mechanisms for specific conservation activities, and a potential disincentive structure for the clearing of land and natural vegetation in areas which might be part of the tourism experience.

It is possibly the case that as a function of a number of the other imperatives noted in this section, the optimal use of environmental resources to sustain tourism has not garnered an abundance of attention. Given the open access and common pool nature of many tourism resources, the prospect of over investment and development is very high. This situation can be exacerbated by failures at the public decision making level where pork barrel politics leads to substantial resource misallocation, over exploitation and environmental degradation. Of course, the demise of a tourism industry as a function of the despoliation of its source environmental base is a fundamental management tragedy.

Tourism is a resource using industry that can generate a wide range of environmental problems. Environments can be degraded with the provision of infrastructure as well as high rates of visitation. Utilities such as water, energy and sewage works all lead to pollution and environmental despoliation. Long distance travel can generate significant carbon emissions.

Endangered species can become threatened by infrastructure developments, visitation and the introduction of feral species with visitors and on site staff (Isaacs, 2000). In such circumstances, the priority is to evaluate the different forms of damage and design environmental quality and pollution control instruments which can be effectively applied to visitors in an appropriate way (Markandya, 2000).

Information and transactions costs are also relevant considerations in tourism related situations given the public goods nature of the resources in question. Clearly, appropriate information is relevant at all stages of the industry operation and management and can be important in reducing transactions costs in relation to optimal management of an industry and also in terms of establishing efficient ways to deal with specific environmental problems.

Finally, the important questions of climate change are highly relevant to the development of tourism policy. At one level it is clear that tourism can generate significant impacts for climate change whilst the viability of tourism itself might be threatened by climate change which changes the fundamental nature of the environmental resources underpinning a particular tourism setting. It is also apparent that climate change has the capacity to significantly alter tourist activity in relation to expectations and preferences for particular experiences.

Ultimately, whilst tourism policy is focused on developing the maximum economic potential from a particular range of natural resources the basic concerns will be with accounting the despoliation of those resources to achieve optimum social outcomes. The economic challenge in this setting is to balance the public good of tourism as against the inevitable environmental despoliation. Given that many of the environmental resources in question are actually in the public domain it would be appropriate to consider rent extraction in relation to the 'goods' and environmental charges in relation to degradation.

33.4. The Tourism Dichotomy

Tourism can often be identified in a dichotomous manner. In one way it is a human resource using and despoiling activity which can operate in an analogous manner to other resource using industries such as agriculture or coal mining. Resources are depleted and externalities by way of pollution may arise. The economic question is then to identify the optimal rate of resource use as well as take account of the resultant damage cost function as a consequence of pollution.

Alternatively, tourism can be viewed as something of an environmental quality instrument. Where other possible forms of human industry might deplete or degrade the target resources and pollute and despoil the adjacent environment, tourism offers a potential to use specified environment in a benign way in terms of aesthetics and non-consumptive activities.

An ideal model in this second theme would be ecotourism. Here the emphasis is on ecologically sustainable tourism rather than tourism which achieves natural ecological preservation — this is probably impossible in connection to humans. However, the perspective of sustainable tourism generally offers much by way of an environmental quality instrument.

The definition of ecotourism adopted by Ecotourism Australia is:

'Ecotourism is ecologically sustainable tourism with a primary focus on experiencing natural areas that fosters environmental and cultural understanding, appreciation and conservation'. http://www.ecotourism.org.au/

In practice, the reality of tourism is probably somewhere in between. Some tourism sites will lead to overexploitation and degeneration so that the original resources are worthless, some other sites have modified the natural condition but are maintaining a sustainable balance and yet other sites towards the ecotourism side are sustaining a relatively complex and natural level of ecology whilst keeping human disruption to a minimum.

Thus, tourism is often considered like any other industry in terms of the ability to employ people and generate income. This perspective is much to the fore in much of the formal tourism economics literature (see *Tourism Economics*, http://www.ippublishing.com/te.htm).

It is notable that the predominant theme in much of the tourism economics literature is to measure the broad financial contribution of tourism in the setting of a rather ubiquitous and decentralised industry. Some of the concern is to identify and differentiate some activities relating to tourism, possibly in relation to travel, accommodation and the like and differentiate them from the activities of other citizens going about their normal business. And the tourism database is improving. Infrastructure investment at a public level as well as private investment in tourism ventures benefit accordingly.

The efficient and equitable operation of the tourism industry has attracted far less attention in cases where it has public good attributes. Predominantly, tourism tends to occur in situations of general open access or where the resources might be characterised as common pool. In this

setting, issues of demand are not straightforward and considerations of the carrying capacity of natural resources necessary to sustain tourism activities are complex.

Tourism can often be characterised by open access, where some rivalry may occur but where participation is generally non-excludable. An example of this type of market distortion is open access to marine parks, where users do not pay the full cost of using the resource. This has consequently resulted in overuse and depletion of the environmental resource (Yacob *et al.*, 2009). In terms of public goods considerations the analytical questions focus on the scale of the industry in relation to constructions of demand where value is not always clear, and provision of resources where many or most of the resources are in the public domain and involve public expenditures as a consequence. Considerations of public rent extraction and payment for public costs then follow.

Tourism development and use will also inevitably lead to environmental degradation and externalities. Isaacs (2000) cites several studies highlighting the negative effect tourists are observed to have had on the environment, such as getting too close to whales causing stress; disturbing sea turtles nesting; feeding wildlife which leads to increased dependency on humans; and increased tourist traffic causing air pollution, and increased animal fatalities. Examples of other negative tourism externalities are abundant (Courvisanos and Jain, 2006; Green and Higginbottom, 2001).

Appraisal of environmental damage in relation to tourism is difficult and costly and consideration of appropriate remedial measures and environmental control instruments fundamentally complex in relation to the ubiquitous public good nature of the industry. In relation to information and transaction costs, it appears that considerable innovation is necessary to design efficient instruments which can be applied appropriately to achieve the desired level of environmental remediation.

The alternative arm of the tourism dichotomy is somewhat of an intellectual leap. In the setting of general and widespread environmental destruction as a consequence of human existence and industry, much tourism is seen as a panacea for conservation. Tourism is seen as a type of environmental policy instrument which leads to better environmental outcomes and sustainable development where the alternative is some form of planet ravaging mining or industry (Müller, 2000). McNeely (2004) notes that significant increase in areas can be put aside in protected areas for conservation of wildlife and much used for tourism, rather than being ravaged by industry.

Examples of tourism as a conservation instrument relative to a destructive industrial/development include:

- Coastal recreation — the enjoyment of natural beaches *versus* mining for mineral sands. Beaches are known to be heavily impacted by mining that they have been rendered unusable for touristic development which equates to loss of potential income (Calvo and Waugh, 1977; Young and Griffith, 2009).
- Ecotourism in Costa Rica *versus* agricultural development and deforestation (Courvisanos and Jain, 2006).
- Wilderness tourism in South West Tasmania *versus* hydro impounding and development in Lake Peddar and the Franklin River etc (Calvo and Waugh, 1977).
- African game reserves *versus* agricultural development and deforestation. African game reserves. In parts of southern Africa, game viewing has been found to be much more productive than farming of domestic livestock, and is the major source of income (Higginbottom, 2004).
- Whale watching *versus* whale killing for 'experimental' and consumptive uses. Whale watching generates considerable value worldwide (O'Connor *et al.*, 2009).
- Rural farm stays *versus* the extension of agricultural monoculture (OECD, 1994). In the Nordic countries, much of the agricultural base is sustained for amenity purposes rather than for actual food production (Idda *et al.*, 2005).
- Ecotourism generally provides a conservation alternative to a range of industrial and environmentally destructive alternatives. Ecotourism a special class of initiative with both characteristics; like any other industry but also specifically conserves environment. 'Ecotourism can play an important role in environmental conservation (Tisdell, 2005). It can provide economic benefits to a local community and subsequently provide an incentive for conservation'. Tourism policies for a range of situations such as Antarctica, the Galapagos Islands, Belize, Kerala, and Palau amongst others, emphasise the ecotourism perspective providing sustainable economic development as against an environmentally diminishing alternative.

Whether this dichotomy is a relevant and meaningful distinction is yet to be clarified. While it would be true to consider that many forms of tourism appear to provide an apparently sustainable pathway to economic development and production, many of the general considerations of optimal public goods determination and environmental quality management are clearly relevant.

33.5. The Optimum Operation of Tourism, Implications for Environment

A large proportion of tourism is based on the use of environmental resources. There is a close relationship between the physical characteristics of a destination and its attractiveness for tourism. Areas with features such as interesting scenery, beautiful beaches, amenable climate, unique landscape features, and unique flora and fauna are desirable tourist destinations (UNESCAP, 2010). Interestingly, different scales of tourism activity may alter or utilise some of these attributes to different degrees. The economic question is to determine the optimal scale of some given tourism activity, which in turn establishes how much of the natural environment might be utilised.

The scale of tourism activity in a particular location must be defined by the carrying capacity of the resource if tourism is to be environmentally sustainable. Any tourism activity will have some environmental impact but the carrying capacity could be considered as the limits of acceptable change to the environment (UNESCAP, 2010). The biological carrying capacity could be defined as a level that prevents degradation of the ecosystem, or as a level that allows regeneration of any damage caused.

Within these ecological limits, the demand for and supply of tourism activities must be evaluated to establish the optimal level of the industry. Public good characteristics of environmental resources make evaluating demand and supply difficult, and the result may be over use and degradation of the resources.

The key here is that generally, private market situations might not result in an optimal allocation of an industry and the environmental and natural resources used in it (refer to Tisdell (2001, 2005, 2009) for a comprehensive coverage of these issues).

Public goods are those goods that are consumed collectively by members of society in a non-rival manner so that one individual's consumption does not reduce the amount available for others to consume. The public goods of tourism can be defined as goods that exhibit both consumption indivisibilities (non-rivalry) and non-excludability.

Non-rivalry, or indivisible consumption, occurs when one person's tourist consumption does not diminish the amount available for others, for example, clean water, clean air, viewing a landscape, or biological diversity at a tourist location. Thus, once a tourist good is provided, the marginal cost of an additional user, and therefore the efficient price, is zero. With tourism, for example, some recreational uses can be non-rival, high quality environments

to support ecosystems are non-rival, whilst water and air pollution and species loss are also non-rival.

Non-excludability means that once a resource is provided to tourism it is not possible to exclude any tourist, whether or not they pay. Examples with tourism would be some recreational uses, the appreciation of a beautiful landscape and the benefits of knowing ecosystems are preserved.

In some cases, known as quasi-public goods, there is non-rivalry in use up to a certain level of utilisation but rivalry develops once some threshold of use is exceeded (Tisdell, 2009, Ch. 3). An example might be a bushwalking track where, as the number of walker's increases, each walker's experience is diminished through crowding and deterioration of the environment.

Where there is non-rivalry but exclusion is possible, for example eco-tourist lodges and national parks with restricted access, the good is known as a quasi-private or club good, and sometimes referred to as an intermediate good (between pure public and pure private goods).

In some tourist situations there is the intermediate case where there is rivalry in consumption but not excludability. These tourist situations are known as common pool resources, for example, recreational fisheries or a national park with no entry fee.

The inability to exclude tourists leads to the free rider issue — even where some tourists are prepared to pay for a public good, others will benefit from the provision of the good but will not pay, and they cannot be excluded. This may result in some of the good being provided because some tourists will pay, but the good will not be provided in economically efficient quantities. The 'free riders' cannot be excluded from using the resource that others have paid for and so it may be overused and degraded.

Under private markets, each individual may wait for the others to purchase the public good so that they can 'free-ride'. In the case of the tourism public good, the market price is not necessarily an efficient mechanism, because the stock of a public good is never 'consumed away'. The reason inefficiency arises in providing public goods is that, unlike price, quantity is not an effective market mechanism. For a given quantity of tourism, individuals will not automatically self-select their optimal price, but will instead wish to pay the lowest price possible when they cannot be excluded from consuming the good.

Many goods associated with tourism are mixed goods in that some attributes have the characteristics of a private good, while others have public good characteristics (Tisdell, 2009, Ch. 3). For example, using a beach for sand mining is a rivalrous, excludable, consumptive use, but using it for recreation has many public good characteristics.

What type of good is tourism? Tourism and its activities do not fit neatly as either a public or private good. Tourism exhibits different characteristics in different situations and at different levels of use (Tisdell, 2009). At the environmental end of tourism, questions of ownership and control of environmental resources as well as the high costs of their provision and maintenance result in provision being a public function in the main. The final end users however, are individuals where consumer demand is determined more as a private good. Thus, on the supply side, the environmental resources underlying tourism tends to be more towards a public good, while on the demand side it can be treated more like a private good, although particular situations vary, ranging from pure public good, quasi-public good, open access, quasi-private, pure private good and various combinations of public and private (mixed goods).

The focus of the public goods analysis of tourism then turns to appraising the wide range of tourism values (non-use values and non-marketed values) to establish tourism demand. In relation to demand it is also necessary to accommodate the public costs of provision and management. When this is done we can establish an optimal scale of tourism and an optimal use of tourism resources.

Where such analysis is not done and existing private markets are used to organise the scale of tourism and the environmental resources used, it is very likely to not be optimal. Because of free riding issues, the quantity and quality of a tourism resource demanded, and hence supplied, will not be optimal. What is supplied will be overused and the resource degraded.

33.6. The Environmental Nexus

Environmental considerations have always been an essential component of the economic analysis of the efficient operation of an industry. Identifying market failure and accounting for externalities is fundamental to the overall specification of the optimal conditions for resource efficiency in any industry and market situation. In the setting of tourism where there is an indisputable and fundamental close and intertwined relationship between the environmental physical qualities of a particular tourism destination and the attractiveness of that site for tourism, it is paramount to identify and deal with negative pressures on those important environmental aspects.

The economic analysis of environmental problems in relation to tourism is consistent with the general economic theory of environmental policy (Baumol and Oates, 1975). Where environmental quality instruments need

special consideration in tourism is in relation to the design of instruments which deal with the incentives of the key generators of the environmental problems. Informational requirements and transactions costs will also be highly relevant in this setting.

33.6.1. *Dealing with environmental externalities*

Some of the environmental externalities associated with tourism can be identified as follows:

33.6.1.1. *Direct visitor impact*

- Congestion and visitor over use.
- Direct physical damage; trampling or interfering with sensitive vegetation and landforms, campfires, reef damage.
- Vandalism, wilful destruction of valuable amenity.
- Water and air and noise pollution in relation to certain activities; boating, trail bikes, off road vehicles, planes.
- Introduction of feral fauna and flora; impacts on sensitive species.
- Accidental killing of sensitive animals.
- Poaching, removal and purchase of flora/fauna souvenirs.

33.6.1.2. *Indirect tourism site modification and management*

- Landscape modification and visual pollution for provision of infrastructure, transport facilities, accommodation, disruption to water runoff patterns.
- Disruption to sensitive flora and fauna in parts of the local ecology, migration and eating paths.
- Disturbance to fauna behavioural patterns, changing prey-predator relationships, impacting more sensitive elements disrupting ecological balance, sustainability of ecosystems.
- Treatment of effluent and wastes, water, sewage.

This distinction between direct and indirect impacts is not particularly definitive, but in terms of problem remediation it may identify a more precise application of an instrument in some cases whilst the generality in another situation might require a different form of instrument.

The process of managing the environmental impacts of tourism sites and destinations tends to become bogged down in management plans and complex institutional structures and regulations which mire operators and visitors in a mountain of transactions costs. While a tourist management

plan or environmental impact assessment can appear to be a small cost in relation to a major development (UNESCAP 2010, suggests 1% might be a relevant consideration), it is not clear that such processes actually enable efficient and effective remediation of specific problems as they arise. Thus, in relation to specific classes of impacts which have emerged at various stages, it might be appropriate to identify relevant instruments and apply them directly as they arise.

The impacts in the indirect class (above) could be remediated by establishing standards of performance which would be realised at the construction phase of infrastructure and accommodation. Similar remediation outcomes might be achieved by applying charges in relation to locational and site modification/intrusion characteristics. Clearly, the existence of penalties would provide an incentive for the development of facilities with less environmental impact. Here there would seem to be considerable value in providing information to property developers as to infrastructure building possibilities and outcomes, but the transactions costs of informing tourists would not appear to be warranted. Tourist operators of course would be free to pass the extra compliance costs on to tourists directly.

Some of the direct impacts could however be remediated by addressing the individual tourists directly. Rather than clean up and 'manage' deleterious happenings and consequences of tourist activity, it is more appropriate and cost effective to deal directly with the incentives and disincentives confronting tourists directly. Thus, if trampling or interfering with sensitive vegetation and landforms, campfires, reef damage in relation to tourists promenading through a tourist site is an issue, then the problem could be efficiently dealt with by requiring an entry fee which explicitly reflects damage. Given the environmental concern of tourists participating in environmentally sensitive areas it is probably the case that the associated informational campaign will provide significant momentum to reduce damage.

In a practical setting it is the case that environmental problems associated with tourism should be considered and remediated as they arise. Generally a range of environmental policy instruments is available for particular circumstances depending on the nature of the problem and the expectations for outcome. Tisdell and Wilson (2004) provide a table of tourism policy instruments in relation to a wildlife tourism situation. These instruments include government regulations and standards, government imposed charges, taxes and fees, creations of markets through, for example, the establishment of tradable permits to use resources, provision of information, quality control (for example, certification of facilities) and legislation.

33.6.2. *Positive environmental externalities*

It is the case that many tourism locations have developed and improved the pre-existing environmental circumstances dramatically. Previously farmed or forested areas have been managed back to a more natural condition. For example, Fraser Island was much logged until comparatively recently. Parts of the island were also mined for mineral sands with rehabilitation continuing. Much of the Australian east coast strip has been re-afforested as coastal tourism has developed. Large areas of Madagascar have been reclaimed (the World Bank, USAID and other organisations are spending large sums rehabilitating previously developed areas). Large areas of Europe are being managed for less intrusive and environmentally damaging rural tourism and farm stay type of activity (Idda *et al.*, 2005; OECD, 1994). Also many tourism destinations have extracted substantial rent to initiate and extend environmental renovation and rehabilitation and have released funds for direct conservation.

This class of positive initiative has often happened incidentally to the progress of tourism development and the benefits can be quite significant. While it is appropriate for negative externalities to incur a charge in relation to damage done, the significant benefits in relation to the positive externalities of tourism warrant payments to encourage such projects to proceed and develop to their potential.

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33.7. Conclusions: A Work in Progress

The development and encouragement of a tourism industry can have some positive consequences for environmental quality. At one level, the development of tourism and the replacement of other dirty industries are broadly seen to be environmentally beneficial. Thus good tourism policy should be good environmental policy.

The institutional setting of tourism however is somewhat ambiguous being strung between private use and operation, open access and common pool resources at many places and public goods resulting in conundrums in relation to the environmental and natural resources which underpin tourisms very operation and success. In political practice, it might be very difficult to establish the optimal resource and operating scale of a given tourist destination with the likely consequences that the industries are too large and are using too many natural and environmental resources. Appropriate public goods analysis of the scale of a tourism activity is vital for determining optimal scale and the environmental consequences.

At an operational level it is also the case that a tourism destination or industry can generate inadvertent adverse environmental externalities and it is appropriate that these issues should be identified and remediated separately from the earlier considerations of optimal scale of the industry. A wide range of environmental policy instruments is available for dealing with pollution and ecological degradation as a consequence of human activities, and these should be implemented appropriately and mindful of transactions costs as specific problems are identified.

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Chapter 34

SUSTAINABLE TOURISM DEVELOPMENT: ITS FEASIBILITY AND ECONOMIC VALUE

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Abstract: The view that the pursuit of economic goals and environmental goals are not mutually exclusive has become prominent in recent economic literature. Their consistency is only possible if tourism is developed in a sustainable manner. Therefore, the long-term viability of the tourism industry in any country is dependent on the maintenance of natural, cultural and historical attractions. This chapter deals with the economic meaning of sustainable tourism. One interpretation is that it involves the maintenance of a constant stock of tourism artifacts, maximising tourism services from these, and minimising the energy level necessary to maintain that constant stock. This chapter also argues that even with sustainable tourism management, there will always be an interaction between tourism and the environment. Thus this chapter will not only be concerned with recognising and monitoring the impacts of tourism on the environment, but also with applying management measures to minimise its detrimental effects on the environment, with the aim of securing the long-term future of tourism resources.

Keywords: Carrying capacity; common property; environment; externality; market failure; public goods; sustainability; sustainable tourism.

34.1. Introduction

The long-term viability of the tourism industry in any country is dependent on the maintenance of its natural, cultural and historical attractions. However, without proper management practices, the tourism industry in any country can degrade the very features on which its future prospects are based.

For many countries, their environment together with friendly people and stability are their greatest assets in attracting international tourists. Worldwide tourism development has expanded rapidly due to advances in transportation technology which has decreased the time and cost of

travelling. Tourism has also benefited from the increase in vacation time, personal wealth in industrialised nations and the spread of education, which stimulates greater interest in foreign places and culture (Bryden, 1973; Sathiendrakumar and Tisdell, 1989; World Tourism Organisation (UNWTO), 2002).

Strengthening of a home country's currency relative to that of the host country also attracts tourism to the host country. In theory, there should be a correlation between the exchange rate at which a tourist can buy foreign currency and the rate at which he or she spends it on tourism in a host country. Foreign exchange appreciation relative to the host country will enable the tourists visiting host countries to pay less for facilities, services and goods than what they would have paid prior to the exchange rate appreciation.

To assess the role of international tourism in economic development, we should consider not only its economic benefits and costs but also its social costs and benefits. Furthermore, its economic benefits in terms of its impact on output, value added, and employment and foreign exchange earnings must be weighed against the costs of dependency and instability in marketing a luxury good (one that is income elastic), which is recession-prone in the generating country and subject to both the host country's political upheavals and the vagaries of weather in the host country. Unfortunately, the main emphasis of tourism plans and policies in many countries has been upon increasing the gross returns from tourism in terms of foreign exchange earnings or raising visitor numbers.

Developing countries received US$177 billion in tourism receipts in 2004, which was the primary source of the foreign exchange earnings in 46 of the 49 least developed countries (WTO, 2005). Although international tourism earns foreign exchange for developing countries, a large percentage of every tourist dollar spent leaks back to developed countries in the form of imports (Sathiendrakumar and Tisdell, 1989). Also a close look at employment in tourism in the Maldives revealed that foreign nationals have held most management level jobs. Jobs held by locals in the Maldives are usually seasonal and many employees migrate from other employment sectors such as fisheries and allied fields during peak tourism season (Sathiendrakumar and Tisdell, 1989). 'Insensitive tourist developments can displace people and destroy traditional livelihoods, leaving many with no alternative but to take up low-paying and exploitative jobs in the tourist sector' (Honey and Gilpin, 2009, p. 7).

The social costs associated with tourism include costs associated with land, water and other resources used to meet tourists' needs which may

compete with those of the local users. As well locals may acquire cultural or social practices from tourists, many of which may be undesirable or incompatible with indigenous values. The environmental impacts of tourism include the ecological impacts, social impacts and cultural impacts of tourism. While the above social costs may be difficult to quantify, they should nevertheless be borne in mind in estimating the net effect of international tourism on the host economy.

Tourism has certain characteristics that distinguish it from most other products. These include resource immobility, capacity constraints coupled with seasonal variations in demand, and the inability of the consumers to experience the product before purchase. However, some knowledge may be obtained from tourist brochures, videos, and from friends or relatives who have visited a tourism place before. Since tourism is an activity that embraces all of the activities that tourists undertake, the role of government in tourism industry is different to its role in other industries (Blake and Sinclair, 2007).

The growth of international tourism in developing countries over the years has resulted in a handful of large firms (oligopolistic in nature) dominating certain sectors of the industry, such as the hotel industry in the developing world (Clancy, 1998; Curtin and Busby, 1999). Furthermore, while international tourism can bring benefits to developing countries, Honey and Gilpin (2009, p. 7) states that 'While tourism can be of enormous benefit to developing nations, setting up a fully functioning tourist industry is beyond the capacity of many'.

A (developing) host country is dependent upon the promotional priorities of overseas tourist companies which assemble package holidays purchased by tourists. These companies have two major objectives when designing a package (which can be supplied to the international tourists through their interests and connections and long established operations in the host country) one is to create a demand in tourism generating countries through television advertising and other means, and the other is to include within the package those operations that can offer the largest commissions to these oligopolistic marketing firms.

34.2. What is Sustainability?

Sustainable development is an approach to development which aims to avoid irreversible damage to the natural, cultural and environmental resources (McIntyre, 1993). There are a large number of definitions of sustainable development. For example, Pezzey (1989) lists 60 definitions

(see Sathiendrakumar, 1996). The World Commission on Environment and Development (WCED, 1987) defined sustainable development as 'development that meets the needs of the present generation without compromising the ability of future generations to meet their own need' (WCED, 1987). Pearce and Warford (1993, p. 49) redefined the WCED definition of sustainable development as 'development that secures increases in the welfare of the current generation provided that welfare in the future does not decrease'. This does not alter the underlying principle espoused by the WCED (1987) that the loss of stock of non-renewable resources available to future generations should be kept to a minimum, and the rate of utilisation of renewable stocks of resources should not exceed their natural regeneration capacity.

Pearce and Turner (1990, p. 24) give a working definition of sustainable development, which is adopted in this chapter as development that 'involves maximising the net benefits of economic development, subject to maintaining the services and quality of resources over time'. This working definition is also concerned with inter-generational equity. To achieve sustainable development, the sustainability principle should take into account not only the resources that we use up in tourism and the resources that we leave behind after tourism development, but also the type of environment we leave behind for future generations, such as the built environment, productive capacity and technological knowledge (Sathiendrakumar, 1996).

34.3. Market Failure Aspects of Tourism Activity

Most economics literature considers free market to be the most efficient means of allocating resources. It is only when there is market failure, that government intervention is regarded by many economists as possibly being desirable (Stiglitz, 1993). Market failure usually is due to any or all of the following:

- Externalities,
- Public goods,
- Common property resources, and
- Asymmetric information.

A well-defined property rights system ensures that the markets are complete, which implies that markets exist to embrace each and every transaction so that resources move to their highest valued use. Free markets do not always result in the supply of socially efficient quantities of goods and services at socially efficient prices because of the market failures mentioned above.

Economic activities often result in direct as well as secondary consequences. Resources which are not privately owned and not marketed are available free of charge, and tend to be over used with obvious negative consequences. Examples of such goods in tourism can include beaches, bushwalking trails, mountain climbing, observing bird and marine life, all of which form some of the focal points of tourist activities.

Markets work well when prices reflect all social values, both explicit and implicit. In relation to environmental assets (natural resources) used in tourism activity, markets fail since market prices do not reflect society's desire and constraints accurately. That is prices can overstate or understate the value of the services provided by the natural resources used in tourism. Market failure occurs when decisions by the tourism sector are based on market prices that do not currently reflect their social economic value.

In economics, the adverse environmental impacts of activities are usually categorised into problems associate with externalities, common property or public goods (Blake and Sinclair, 2007).

34.3.1. *Externalities as a source of market failure in tourism activity*

Externalities arise due to the non-existence of markets for incidental outcomes (side effects) from an economic activity. A market externality involves either an incidental benefit (benefit externality) or an incidental cost (cost externality) incurred by the third party (someone who is not a party to the transaction) due to the decision made either by the producer or the consumer. In the case of a benefit externality (or positive externality), there can be gains for both the third party and the generators of externalities.

The supply and consumption of recreational activities often results in incidental secondary effects. For example, toxic fumes and compaction from tourist's vehicles may damage the flora and fauna present in a tourist destination. In these situations, the costs of incidental secondary effects are borne by the local residents at large, whereas the benefits of the tourism activity accrue to tourists and the tourist industry. This occurs because there is no market for the environment, hence tourists are not compelled to take account of the damage costs they impose on the locals and there is an incentive to 'over-consume' or 'over-pollute' the environment on which the future of tourism depends.

Choy (1991), using Pacific island destinations such as Hawaii, French Polynesia and the Cook islands, argued that current tourism plans have little probability of influencing markets so that they maximise economic welfare

in these destination areas and 'future government planning efforts should be directed to focus on issues such as negative social and environmental impacts which are not ameliorated by market forces' (p. 313).

Economic theory tells us that in the presence of externalities, market price may not reflect the true social value of the environment. Therefore, it may be necessary to create legal and monetary incentives to induce individuals to take account of their external costs imposed on others.

34.3.2. *Common property as a source of market failure in tourism activity*

A resource which is common property (or to which there is open access) is one that is available for use by every member of a society. Neither exclusion nor discrimination is permitted in accessing the resource. That is, a person's right to use a resource in a certain way is held in common with other persons or a group of people. The difference between common property and collective rights is that in the case of collective rights the decision about the use of a resource is taken as a group. But in the case of common property (or open access) each individual makes his or her own decision as to when or how to exercise that right.

Environments used for tourism often have both common property and public good characteristics. A common property resource is one which no individual or firm possesses exclusive rights to exploit, but there is rivalry in its consumption. Typical examples are oceans, flora and fauna found on common land. Since common property lacks the protection conferred upon goods by private ownership, common property tends to be overexploited. Hardin (1968, p. 1244) in his article on 'The Tragedy of the Commons' summarises the end result of this problem as 'Ruin is the destination toward which all men rush each pursuing his own self-interest in a society that believes in the freedom of the commons. Freedom in the commons brings ruin to all'.

In a common property resource situation, the resource may be used for the same purpose by everyone such as fishing in a river or for different purposes, such as swimming, fishing and for the disposal of waste. It should be noted that using a common property resource for a damaging purpose such as using of a river for the disposal of effluent, will affect its non-damaging use, for example, for swimming.

If supplies of open-access resources are finite or exhaustible, common use may lead to their depletion in the long-run. When tourism is based on the use of common-property resources, it can, therefore, fail to be sustainable.

However, proper management of the tourism industry is possible with government involvement and full participation by all the players in the tourist industry. In order to prevent damaging use of the environment, governments could impose taxes on the damaging use of the environment. Such taxes will encourage non-damaging use of resources by tourists such as swimming and sailing. Governments are also able to protect the environment from the damaging use of the tourism environments by legal means. Such laws should be aimed at encouraging only the non-damaging use of the tourism environment, and the penalties imposed on the damaging use should be very high to act as real deterrents. Nevertheless, the economic theory of pollution/degradation indicates that some pollution can be economically optimal.

34.3.3. *Public goods as a source of market failure in tourism activity*

A public good exists when a person cannot be excluded from its provision and when one individual's consumption of that good does not reduce its availability to any other individual. These two conditions of non-excludability and non-rival consumption differentiate a public good, from a private good, which is both excludable and rival in consumption.

Pure public goods are either undersupplied or not supplied at all when the supply is left to private individuals. Some quasi-public goods are supplied and operated by private enterprise, e.g., toll roads and tunnels. Therefore in general, public goods must be provided collectively in some form, either through direct or indirect government provision or through compulsory membership schemes.

To give an example, high air quality can be regarded as a pure public good because no one can be excluded from enjoying it. However, individuals have no incentive to maintain high air quality in public spaces in the absence of government controls. Therefore, since polluting public air space is a free activity, they have no incentive to maintain air quality in public spaces. Furthermore, global warming can be regarded as a public bad. The tourist industry and other industries contribute to global warming.

Tourism is particularly vulnerable to public goods and common property resource problems. International tourists from developed countries are lured to their low cost destinations in developing countries by the attractive features of the environment in host countries, the use of which has little or no government control. However, since the environment is an unpriced common resource in many developing countries receiving tourists, there is a tendency

to over develop tourist resorts in host countries, to the long-term detriment of all users of tourism products and to the society at large in the local area.

34.4. The Effects of Tourism Development on the Environment

An acceptable quality of the environment (both man-made and natural) is essential for growth in tourism in any country. Tourism involves many activities that may have adverse environmental effects. Negative impacts are visible when the level of visitor use of the tourism environment is greater than the environment's ability to deal with this use within the acceptable limits of change. These negative impacts of tourism development on the environment can gradually destroy the environmental resources on which the survival of tourism depends.

Environmental resources pertaining to tourism might be divided into three groups, namely:

- The natural environment (the range of natural resources pertaining to tourism).
- The social and cultural environment (the set of traditions, history, customs, culture and hospitality which characterises a given area).
- The urban environment (including services such as transportation and communication infrastructures which are available for local residents as well as tourists).

On the demand side, tourists are unlikely to be able to maximise their utilities from the simultaneous use of all the above three environmental resource areas. Even if this is possible on the demand side, on the supply side, it is impossible to simultaneously supply all the above three environmental resources to achieve maximum desirability of each.

Tourism has both negative as well as positive effects on the natural environment, the social and cultural environment and the urban environment. Since many journal articles (Sathiendrakumar and Tisdell, 1989; Bramwell and Lane, 1993; Choy, 1991) and books on tourism economics (Bull, 1991; Tisdell, 2001) have dealt with these general positive and negative effects in detail, this chapter will not dwell on this issue.

Potential negative effects from tourism include marine pollution, an increase in the incidence of crime and overcrowding of tourist attractions which may reduce personal satisfaction and be excessive in terms of the carrying capacity of sites. The deleterious effects of tourism can impact on mountainous areas, vegetation, wildlife, coastal and marine environments and water resources, just to mention a few possibilities. Also noise pollution

and the construction of environmentally unfriendly buildings (for example, in some cases high-rise buildings or dense building) associated with tourism development causes environmental deterioration. Measures that may also help in increasing the level of tourism in a given area are improvements in transport and communication networks, maintaining biodiversity in the area, safeguarding and improving the urban environment and ensuring the hospitality of local residents.

To a great extent, the relationship between tourism development and the environment is determined by the relationship between external agents, such as tourists and providers of tourism services, and the local resources, which includes both the local population and the natural environment. Unfortunately, in many instances, the powers of the external agents outweigh those of the local human resources. This leads to attempts by the external agents to obtain short-run net benefits at the expense of long-run social benefits and can culminate in unsustainable tourism development.

Three elements can be identified as important because of their effects on the environmental systems in tourism areas. They are: the market, the local residents and the government.

34.4.1. *The market and its impact on the environmental degradation of tourism areas*

On the demand side, there are the tourists and other intermediary agents such as the tour operators. On the supply side, there are those managers involved in tourism directly and those involved indirectly in service industries that support the tourism industry. Four types of market (structures) can be identified, namely:

34.4.1.1. *Non-organised demand with labour-intensive supply*

This is a model in which small accommodation facilities dominate. The operating channel is direct, which may be either individual or consortium-mediated. An example of this is 'olden days' tourist resorts which favoured the growth of local family enterprises such as the 'bed and breakfast' places. This has minimum impact on environmental degradation with respect to the buildings where tourists stay.

34.4.1.2. *Non-organised demand with capital-intensive supply*

The operating channel is real estate agencies. An example of this is residential tourist areas with holiday homes. This might have a higher impact on the environmental degradation compared to the previous one due to the very

locations where they are constructed, such as closer to beaches, (resulting in beach and sand dune erosion) or in mountains thereby causing soil erosion and earth slides in the long run.

34.4.1.3. *Organised demand with capital-intensive supply*

Here the tour operators determine the tourist flows to any destination and therefore on the supply side, an intensive and standardised model exists. The operating channels are large tourist operators. Examples of this are the high-rise hotels in sun-sand-sea resorts. Over building and extensive shoreline development such as marinas and breakwaters can result in destruction of marine habitat and disruption of land–sea connections (such as sea-turtle nesting spots) and also resulting in beach and sand dune erosion. In the Philippines and the Maldives, mining of coral for resort building materials has damaged coral reefs and depleted the fisheries that sustain local people and attract tourists. Clear undervaluation of the environment occurs leading to pollution of the environment and this is likely to be detrimental to the long-term sustainability of the tourism industry.

34.4.1.4. *Organised demand with labour-intensive supply*

This is a relatively underdeveloped market structure. These are small clusters of small tourist businesses under the control of a single firm. The channels of operation in this case are small, specialised tour operators. An example of this might be ecotourism which presumably leads to minimum environmental degradation compared to the previous three market structures. Therefore, this will be relatively more sustainable in the long-run compared to the other three market structures.

34.4.2. *The local residents and their concerns about environmental degradation of tourism areas*

The people who enjoy, or suffer, the main impacts of tourism are those who live in tourism areas. Therefore, the concerns of local communities need to be taken into consideration. That is, part of the resident population contributes directly to the tourism market. This different level of participation may lead to polarisation of the resident population into those benefitting the most from tourism, those benefitting something from tourism and not benefitting at all from tourism in their area. Furthermore, there may be asymmetric information between the parties engaged in environmental damage via tourism and the affected parties or between the decision makers and the people responsible for tourism.

Unfortunately, in many countries, we do not have an established framework to determine which concerns of the local population need to be considered and what factors should enter into the planning process. Furthermore, the ability to enforce laws and regulations in many developing countries is also diminished when such enforcements would hamper the activities of interest groups outside the community such as the resort or hotel operators. In other cases, the community may have little or no legal authority to deal with tourism development. For example, such powers may be vested with regional or central governments. Therefore, in such economies, it is an important component of tourism policy to reconcile any conflict between the pursuit of private profit and the desire for social gains. Where the state is determined to maximise social benefits, tourism investors may exert considerable pressure to overturn such regulations in order to maximise their private benefits. Furthermore, where enforcement machinery is weak or where there are lots of loopholes in the law or where there are corrupt officials willing to bend the rules, these regulations may be ignored by tourism developers.

Considerable educational literature (Altman, 1975) suggests that, over time public education programs exert a strong influence on social behaviour and attitudes. In the absence of an educational program, the environmental damage from tourism development is often the result of short-sighted and non-cooperative behaviour of individuals acting in their own self interest. Educating the local residents to appreciate and value their environment is an important aspect in preserving the natural resources used in tourism development (Forsyth *et al.*, 1995).

The education process might involve the public in monitoring environmental damages from tourism projects, either through schools or the work of specialist voluntary groups (NGO) who might have an incentive to maintain their credibility and therefore, are likely to provide complete and unbiased information on the impact of tourism on the local environment including their natural resources.

34.4.3. *The government and its impact on the environmental degradation of tourism areas*

Due to the lack of property rights in the general environment, neither the market nor the resident population is capable of self-regulating environmental rights. The government, therefore, has the responsibility of regulating and improving the various aspects of the environment in order to achieve tourism that will be sustainable. The impact of the government is both direct, when

it promotes initiatives aimed at improving or at least maintaining the environment, and indirect, when it fixes limits to the amount of damage, so that the damage will be reversible. Therefore, the government should regulate the impact of tourism agents on the environment. In this respect, proper planning for improved environmental management by government becomes an important tool.

Cleaner production techniques in the building of tourist resorts can be tools for planning and operating tourism facilities in a way that will minimise their environmental impacts. Furthermore, waste treatment and disposal are major, long-term environmental problems in the tourism industry. Therefore, pollution prevention and waste minimisation techniques are important for the tourism industry.

It is vital to recognise, that even though provision of tourism facilities through markets may be imperfect, sometimes provision through the public sector may be equally unsatisfactory. The latter problem is known as public failure in public choice theory. Central to the public choice theory, is the assumption that politicians and bureaucrats make decisions so as to maximise their own welfare, similar to private sector agents. However, politicians are not directly rewarded, unlike private agents, for maximising profits of enterprises. Instead, the rewards, in the form of votes, arise as a result of the benefits received by these special interest groups from the assistance given for certain public sector projects. Lobbying is profitable for these interest groups, as benefits from the project accrue to this group, but costs are dispersed across all tax payers.

The theory of public choice suggests that politicians are unlikely to be concerned with the future costs of environmental damage, unless these are represented by powerful lobby groups, such as the green movement. Furthermore, as the political benefits of tourism development is immediate and environmental costs are borne by the future generation, who may have no say in the current voting pattern, there may be a tendency to over exploit natural resources used in tourism industry. Therefore, it can be concluded that neither the government nor the private sector can solely be relied upon to achieve the appropriate level of tourism development.

34.5. Sustainable Tourism

According to Bramwell and Lane (1993), sustainable tourism is aimed at reducing the tensions and frictions created by the complex interactions between the tourism industry, visitors, the environment in the host country and the local community where the tourist spend their leisure time.

Unfortunately, according to Tisdell and Wen (1997) there is no clear definition of sustainable tourism in the literature. Tisdell and Wen (1997) argue that, even though there has been much discussion of this topic 'there appear to be few, if any, rigorous definitions of the concept of sustainable tourism. This is unfortunate because without clear concepts, scientific analysis is likely to be hampered and policy advice imprecise and confusing'. Also in their article, they raise the question of what tourism attributes should be sustained? Should it be the number of tourist, tourist days, tourist receipts or some other characteristics?

In this chapter, I consider optimising the net benefits of tourism over time and taking care of the intergenerational equity as the aim of sustainable tourism.

Sustainable tourism management does not imply the complete avoidance of environmental impacts by tourism. Moreover, there is no possibility of having 'zero impact' from tourism. Even ecotourism, which is defined as 'travelling to relatively undisturbed or unconstrained natural areas with specific objective of studying, admiring and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations' (Butler, 1991), will have some impact on the environment. Therefore, under sustainable tourism management there will always be impacts of tourism on the environment. Thus the sustainability approach to tourism is not only concerned with recognising and monitoring its impacts on the environment, but also involves applying management measures to minimise the detrimental effects of tourism on the environment, with the aim of securing the long-term future of tourism resources.

Sustainable tourism is an activity which not only conserves natural resources but which also generates income and employment opportunities for both the current and future generations. In the context of tourism, sustainability should emphasise the need to use and develop resources that are utilised in tourism in a manner which not only allows enjoyment for the tourist, who consumes the product, but also ensures that these resources will be preserved for utilisation of future generations. Thus, pursuing the growth of tourism without paying necessary attention to the environment is unlikely to lead to sustainable tourism growth.

34.5.1. *Policy incentives for over-development and for under-valuation of the environment*

Tax systems create distortions and incentives which may affect the behaviour of those in the tourism industry. They influence the investment behaviour

of tourism firms and the manner in which these firms utilise environmental resources. Three types of tax incentives have mainly been used by governments to support tourism industries: accelerated depreciation, investment allowances and capital write-offs.

Accelerated depreciation, allows a greater proportion of the cost of an asset to be written off in the initial period than straight line depreciation. This raises the present value of the depreciation deduction when the investment is made. Where the total cost of the asset can be depreciated in the first year, accelerated depreciation is the same as immediate write-off. Investment allowances provide a certain fraction of the value of the asset to be written off in the year of purchase, plus normal depreciation over the life of the asset. Under this scheme, it is possible for over 100% of the asset to be deducted for tax purposes.

All these allowance schemes are basically subsidies provided to tourism firms. These allowances lower the initial cost of the investment and will encourage investment in projects with relatively short-life spans. Because of these subsidies, tourism firms may have little incentive to take account of the long-term consequences on the environment of their actions. This can result in a tendency to over exploit environmental resources, which may result in an irreversible damage.

Undervaluation of the environment by not taking into account any externalities created by the tourism industry also may result in environmental damages that are irreversible. This provides a further reason for protecting the tourism environment.

Any tourism policy should take into account either the future profits or the opportunity cost of resource use in the industry. In the absence of tax distortions, a profit-maximising tourism firm will utilise the environmental resource so that the rate of return is at least as great as the interest rates expected over the life of the tourism investment project. Therefore, if the rate of profits for the tourism industry is expected to fall below future interest rates, there will be a tendency to increase resource use in the tourism industry, regardless of the regenerative capacity of the environmental resource over time. On the other hand, if expected future profit rates in the tourism industry rise by more than the interest rates, it pays to slow down current production, and allow the environmental resource to regenerate. Therefore, the depreciation allowance scheme in the tax system for the tourism industry, by raising current profits, may encourage short-sighted investment behaviour that will result in over use of the environmental resources in the tourism industry.

34.5.2. *Irreversible environmental damage*

A major source of uncertainty about the environmental damage caused by tourism is due to the fact that it is difficult to measure and evaluate the damage resulting from environmental degradation. Furthermore, stochastic models which seek to integrate elements of uncertainty become rapidly unmanageable and therefore, are not practical. It is hypothesised that at low levels of tourism development, growth in tourism development does not lead to irreversible damage to the environment, even though a small part of the environment may be damaged reversibly.

34.5.3. *Long-term viability of tourism industry*

To achieve the long-term viability of tourism in any country, the growth path pursued in developing tourism should maintain the country's historical, cultural and natural attractions. Consequently, proper tourism management for long-term viability of the tourism industry in any country is only possible with government involvement and full participation by the tourist industry. Moreover, the environment of many countries is its greatest asset in attracting tourists to that area. If sustainable tourism is to be pursued, then this environmental asset needs to be managed properly. That is, the damage to the environmental asset should be minimised. This could be achieved by monitoring the environmental impact of tourism activity in any area, and taking corrective actions if necessary.

Sustainable tourism is an activity that not only conserves natural resources but also promotes their capacity to generate income and employment for both the current and future generations. In the context of tourism, sustainability should emphasise the need to use and develop resources in a manner which not only allows enjoyment for the tourist, who consumes the product, but should also ensure that these resources are preserved for utilisation by future generations. Thus, pursuing the growth of tourism without paying necessary attention to the environment is unlikely to lead to sustainable growth.

The objective of sustainable development should be to maximise service to throughput. If we are to maximise service to throughput then two subobjectives have to be met (Sathiendrakumar, 1998, p. 66); namely:

- Maximise service to a given stock; and
- Maximise stock to throughput.

Throughput is the entropic flow of energy that is required to maintain a given stock of resources. Thus, 'maximising service/throughput' could be

redefined and represented in an equation as: {[Maximise (service/stock)] [Maximise (stock/throughput)]}.

Since, one of the necessary conditions of sustainable development is sometimes claimed to be maintaining a constant stock of natural resources (Pearce *et al.*, 1990; Pearce and Warford, 1993; Tietenberg, 1992), the sub-objective of sustainable development is to maximise service relative to that given stock, which is known as allocative efficiency. The other sub-objective is to maximise stock to throughput. With the constant stock assumption, maximising stock to throughput can only be achieved by minimising throughput necessary to maintain that constant stock, which is known as maintenance efficiency. As allocative efficiency (both static and dynamic) is an important area in economics and discussed in all text books, this chapter will not deal with it.

Thus, sustainable tourism development should aim at optimising the tourism services that can be obtained from a given stock of natural environment. At the same time, it should endeavour to minimise the damage to the environment created by tourism activity. In other words, if the damage to the stock of environment is minimised, then the energy level required to bring it back to the original stock level will be minimised. Furthermore, the perceptions of the tourists, about the environmental quality of a destination will influence future tourist visitation levels to the destination. Therefore, environmental degradation will lead to revenue losses from tourism that will affect the host country's future generations (intergenerational effect), as well as the current generation (intra-generational effect). It should be noted that not all areas suffer equal amounts of environmental damage from similar number of tourists. Therefore, minimum acceptable levels of negative impacts will vary from place to place.

34.6. Possible Management Strategies

As mentioned earlier, market forces by themselves are unlikely to achieve optimal levels of tourism development in any country. Some form of government action may be necessary to protect the environment from irreversible damage. There are three alternative controls that are commonly suggested in economic literature namely: financial incentives such as taxes to discourage environmental damage, legislative controls or setting of standards and the assignment of property rights.

34.6.1. *Taxes*

In 1920, the economist AC Pigou, was the first to suggest the use of taxes to correct the externality problem, which was in fact a direct and

an incentive-based solution (Pigou, 1920). In theory, the government may impose a per unit tax on those tourism activities which damage the tourism environment. The amount of tax levied should be equal to the true social cost of the damage resulting from tourism activity.

Such taxes are said to internalise an externality because they make individuals take account of the social cost of their action on the tourism environment. But the major problem is to measure this true social cost of the damage from tourism activity. In theory, pollution taxes are efficient in that they have the inbuilt advantage of the economic incentives. That is those who choose to pay the tax do so because the benefits that they obtain outweigh the social cost of their action. However, it could be argued that in practice, the imposition of successful pollution taxes is the exception rather than the rule (see Sathiendrakumar, 1995 for other problems with this tax).

34.6.2. *Legislative controls*

Legislative control specifies directly the extent to which tourism activity should take place. Statutes require the standard to be established at a level sufficiently stringent to deter tourist from damaging the tourism environment in an irreversible manner. However, there are problems with standard setting. For example, if it is possible to approximate the true costs of environmental damage resulting from tourism then it follows that it is possible to stipulate an upper limit on the level of allowable damage/pollution that may be reversible. But it is highly unlikely that it is possible to approximate the true costs of environmental damage caused by tourism, especially when you take into consideration the lagged effects of damage.

Legislative controls can be effective only when there is some form of policing, coupled with penalties for violators. Furthermore, there may be other difficulties associated with legislative controls such as not encouraging technological progress in pollution control, also there are problems of estimating the social cost of pollution (Sathiendrakumar, 1995). Also, controls may be expensive to administer, and may be politically unpopular.

34.6.3. *Assigning property rights*

In 1960, economist, Ronald Coase, identified the lack of well-defined property rights as the cause of externality problems (Coase, 1960). The key assumption of the pollution rights equilibrium put forward by Coase was that these rights are well defined and tradable with zero transaction cost.

The working of the market system is assisted by the protection of private property rights. Imperfect property rights or lack of property rights sometimes creates perverse incentives resulting in dissipation of rent from

market failure that lead to environmental degradation (see Tisdell, 1982, for a detailed exposition of the theory).

When individuals are able to appropriate property rights to a resource, then the marginal product of the individual's effort is the relevant measure with which to compare his/her income in alternative employment (Tisdell, 1982). In such a situation the marginal cost will be equated to the marginal social product and the rent from the resource will be maximised.

Property rights are the legal rules regarding what individuals and firms can do with their property. An efficient property rights structure requires the following characteristics (Tietenberg, 1992, pp. 45–46):

1. Universality: All resources privately owned and all entitlements completely specified.
2. Exclusivity: All benefits and costs of using resources should accrue to only the owner either directly or indirectly by sale to another.
3. Transferability: All property rights should be transferable in a voluntary exchange.
4. Enforceability: Property rights should be secure from encroachment or involuntary takeover by others.

In the presence of environmental externalities, there exist opportunities for mutually beneficial trade between individuals. If we assume that these people who involve themselves in such trade are: rational and profit-maximising agents; then the failure to undertake such transactions by these people implies that the total cost including the transaction costs must exceed the potential benefits from such trade. Therefore, reassigning property rights is a solution only if it serves to minimise these transaction costs. In practice, the use of this method will depend on the nature of these transaction costs and the type of externality.

Furthermore, the process of reassigning property rights is also compounded by information problems that arise when damage caused by tourism activities is difficult to estimate and or occurs with lagged effects and thus, may become only noticeable in the future when the damage becomes irreversible. Therefore, in the absence of future contingent markets, bargaining between parties may not occur and reassignment might not be a workable.

34.7. Carrying Capacity

34.7.1. *Monitoring and carrying capacity*

Monitoring of the environment is necessary for the development of a management system that utilises an area's resources for tourism activities in an

environmentally sustainable manner. The system of monitoring should not only focus on measuring the impacts at sites as a result of tourism, but also identify the forms of change and damage that may be considered irreversible and which will require management measures to be undertaken. Therefore, the aim of monitoring should not be just trying to establish a relationship between levels of use by tourist and their impact. An example of the latter is the concept of ecological carrying capacity, which too is highly problematical, as discussed below.

Mathieson and Wall (1982, p. 21) define carrying capacity as 'the maximum number of people who can use a site without an unacceptable alteration in the physical environment and without an unacceptable decline in the quality of the experience gained by visitors'. I assume that unacceptable decline in quality of the experience implies that the threshold to be one beyond which irreversible damage will occur and this threshold is an inherent quality of a particular site. Therefore, the objective will be to determine this threshold scientifically for each site.

A large number of studies have been carried out to establish carrying capacities at well-defined sites with visitor counts and ecological monitoring. However, none of these studies has provided any meaningful results. That is, there is no objective figure for the number of people a site can take without irreversible damage. This is because, even though the number of tourists visiting two similar areas may be the same, the tourists in these two areas may undertake different recreational activities. Some recreational activities may be more damaging than others to the environment. The carrying capacity concept is subjective rather than objective. In practice, the carrying capacity studies often set the status quo as a target to defend (Burton, 1974; Lime and Stankey, 1979; McCarthy and Downer, 1979; Tivy, 1972).

Instead of re-evaluating the levels for a particular site, carrying capacity studies tend to assume that the current level is the norm and increased use is assessed against it. Another tendency is to determine appropriate management levels by peak-level use. Adopting this approach can lead at times, to providing facilities over and above those utilised during normal or average pattern use.

The concept of carrying capacity has hindered the development of new and different objectives for site management (Griest, 1976; Hendee *et al.*, 1990; Stankey, 1980; Wagar, 1974). The question has also been raised of whether a monitoring program should look beyond ecological and physical variables in assessing the carrying capacity to assess the sustainability of tourism (Culberston *et al.*, 1993; Whelan, 1991).

34.7.2. *Monitoring and limits of acceptable change*

Limits of acceptable change (LAC), a more recent concept for establishing gross tourism capacities for tourism areas, involves a wider assessment of social and economic conditions in the area, in order to examine whether tourism is having detrimental effects in a wider context. These detrimental effects includes, distorting the housing market, encouraging too many newcomers to the area of concern for the purpose of creating seasonal employment, overloading local services, and even an increase in the local crime rate/or prostitution. In other words, a holistic approach, such as limits of acceptable change, is required to assess the sustainability of tourism.

The limit of acceptable change concept is an evolution from the carrying capacity concept developed by the US Forest Service for the resolution of conflicts in the management of designated wilderness area. The LAC system has been adopted for the management of some ski developments in the Scottish Highlands (Bayfield *et al.,* 1988).

The objective of the LAC system is to fix acceptable resource conditions that can be defined by measurable parameters. It analyses the relationship between the current condition and the acceptable target condition and then identifies the management tools that are needed to move towards the target condition, and in doing so monitors the effectiveness of the management process (Hendee *et al.,* 1990; Stankey *et al.*, 1985). Therefore, the LAC system is a resource management system based on site monitoring. The LAC system is dynamic, in that limits can be changed in response to changes at monitored sites. Thus, the LAC system is more flexible and adaptable than the carrying capacity approach, which is based on the concept of a single relationship between use and impact.

Rather than trying to establish the causal links between the levels of damage and the levels of use, the LAC system relies on the judgment about the acceptability of the level of impact identified by monitoring. Therefore, the LAC system reduces the need for detailed visitor counts for specific sites, which may be a very costly exercise and may even outweigh the benefits derived from sustainable tourism. Thus, according the LAC system, through the process of monitoring, the management response to damage can be modified empirically until the level of damage is brought bellow the LAC threshold.

While the LAC may be a more practical concept than that of carrying capacity, it is not clear what rules should be applied in determining the limits of acceptable change and how and by whom those limits should be determined. Thus it is like the carrying capacity concept, a bit 'open ended'.

The questions that have to be raised with LAC are: How might the application of this approach affect sustainable tourism? Will it make for greater or less sustainability or are its implications unclear?

34.8. Conclusions

In many countries that rely on tourism for their development, both the government and the private sector invest considerable sums of money and have exerted considerable effort to achieve a successful tourism industry. The overall aim of government policy in many countries is to increase the growth of their economies. Tourism has the potential to increase public appreciation of the environment and to spread awareness of environmental problems as it brings people into closer contact with nature and environment, and it can stimulate economic growth.

In many countries, government-operated tourism boards or authorities are ultimately responsible for the development of tourism industry, which is either sustainable or unsustainable. Therefore, the decision-makers in countries relying on tourism for their growth have to strike a balance between using the environment in an irreversible manner (or damaging manner) for the sake of current increase in growth or for preserving the environment by using it in a reversible manner for the sake of sustainable tourism growth.

For sustainable tourism to be achieved in the long-run, the interest of both the current and future generations has to be taken into consideration. Therefore, to make tourism development sustainable in any country, the respective governments must assess the effects of tourism on environmental, cultural and economic factors. Without this information, governments are unlikely to be able to manage tourism development so that it is sustainable.

If tourism is to be sustainable, then there is also a strong need for the development of a strategic partnership between the public and private sectors. Also if is to be sustainable in the long-run, tourism should incorporate the principles and practice of sustainable consumption. Sustainable consumption is achieved by creating and maintaining consumer demands for products that have been made using cleaner production techniques and by incorporating the price of using the environment into the pricing of products. With respect to tourism services, the aim should be to provide services in a way that minimises their adverse environmental impacts.

In many countries, the private sector is responsible for tourism investment, which also involves considerable risk-taking on the part of the investor, as well as for product development and product promotion. On the other hand, in many countries, the government sector is responsible for the

provision of infrastructure and environmental maintenance. Therefore, if sustainable tourism industry is the main goal of any country dependent on its tourism sector, then it is important for the parties, namely the government and the private sector communicate effectively on matters such as environmental constraints and development strategy.

Finally, sustainable tourism will require the allocation of financial resources both for protection of the environment and for conducting environmental audits. Such financial resources could be raised through the taxation of tourists. There are many ways in which tourists can be taxed (for example, bed taxes, visa fees, entry/departure taxes) and charges can be imposed to collect government revenue such as park entrance fees and charging fees specifically for the protection and management of environmentally sensitive areas if and when these tourists visit them. These special fees for park and wildlife operations or conservation activities can be collected from tourists or from tour operators. But care should be taken when dealing with such a policy because, while economists usually favour such an approach, this is not always practical nor economic (Tisdell, 1995). There can be other types of policy instruments such as education which can be more effective than economic ones in the long-run. Sustainable tourism involving the sustainable use of natural resources by tourists can significantly contribute to environmental protection, conservation and restoration of biological diversity, and it can also help to conserve heritage and cultural resources.

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Chapter 35

ECOTOURISM AS AN INSTRUMENT TO CONSERVE BIODIVERSITY

Andreas Hohl
Ecotourist Travel Guide, Germany

. . . admit that the waters
Around you have grown
Then you better start swimmin'
Or you'll sink like a stone
For the times they are a-changin'.
(Bob Dylan, 1963)

Abstract: In a world that is experiencing its sixth mass extinction of species, ecotourism has been hailed as a potential saviour of nature. In order to fulfil such high expectations and create a symbiosis of business, community development and conservation, ecotourism:

- has to be established in regions that are ecologically especially valuable — a central data bank on species and their distribution may give recommendations for ecotourism development,
- can only thrive in relatively secure countries having a minimum provision of public goods — restrictions on national sovereignty in the case of failed states or military interventions against poachers and illegal loggers may be necessary,
- has to be attractive for paying customers — where the classical ecotourism product fails, supporting markets such as hunting or gambling tourism may have to be developed,
- has to be careful to preserve its resource base-ecological accounting, international monitoring and the setting of industry standards could be valuable instruments,
- has to be politically feasible and socially acceptable realpolitik and reformed aid may help to balance the interests of different stakeholders.

Despite all the difficulties in establishing the appropriate concepts and monitoring their implementation, ecotourism can play a central role in helping part of biodiversity through the survival bottleneck.

Keywords: Carrying capacity; conservation; ecotourism; human greed; political feasibility; social acceptability; sustainability.

35.1. Shadows of the Future — *Homo Sapiens* between the Singularity and the Age of Loneliness

In the above quotation, Bob Dylan indicates that the times are changing. (Bob Dylan, 1963), and it is not only rising waters and disappearing icecaps that are of concern. Change is encompassing the entire biosphere. What is happening is momentous, it is monstrous and it is happening fast, extremely fast. Some scientists call it the Great Acceleration (Kolbert, 2011a).

A naked ape (Morris, 1999) called *Homo sapien* has managed to escape in the laboratory of evolution (Wright, 2004). He/she is changing the rules of the game, thereby creating havoc for the life-supporting systems and most species on the planet (McNeill, 2000). Now, these apes can be found everywhere between the Equator and the Poles in huge numbers. They are swamping the entire biosphere, trampling with a combined weight of roughly 350,000,000 tonnes on the planet, and greedily consuming whatever resources they can extract from the land. Most of the landmass of the planet is now cultural landscape, formed by manmade fires for at least 400,000 years and by agriculture and animal husbandry for more than 10,000 years. The seas are relentlessly hunted out and humans are quickly learning how to become farmers and herders of aquatic life as well.

For most of human history, nature has seemed limitless, an unending frontier (Richards, 2003) waiting to be exploited. Efforts to take stock and to record change have only commenced quite recently. But the numbers that have surfaced are mind-numbing.

Two thousand years ago, the entire human population was 200 million. Two hundred years ago it reached one billion. Over the last 50 years, this population has more than doubled again, and reached approximately a massive 7 billion in 2011 (Kunzig, 2011). Almost all the growth in this population has occurred in the last 500 years.

World product, however, has only exploded after humans transcended what is called the Malthusian World (Clark, 2007), a world in which any increase in productivity was translated directly into an increase in pounds of baby. The Industrial Revolution brought monumental change by enormously improving productivity and transforming economic growth not entirely into more babies but into rising incomes as well. From 1820 to 2000, Gross World Product swelled 55-fold (Ghemawat, 2011). It has more than doubled again in the last 30 years, reaching about US$75 trillion. This average hides huge differences, the GDP of the rich nations of Europe and Japan only increased by about 75% from 1980 to 2009, while China's GDP grew by an incredible

1500% (Kunzig, 2011). The rich are getting richer and many of the poor are becoming middle class. People from Brazil, from Nigeria, from India join the developed nations' battle cry of consumption: 'More, more, more!'

Species that serve the needs of humans are thriving, 52 billion chickens, 2.6 billion ducks and 1.3 billion pigs populate the planet (NGM, 2011). About 20 plants provide humans with most of their food. Only three crops — wheat, rice, and maize — account for roughly 60% of the calories and 56% of the protein that humans consume directly from plants (WRI, 2011). Humans appropriate over 40% of the organic matter produced by photosynthesis (Wilson, 2002).

But for those species that are neither considered useful nor able to adapt to human habitats, there is no more space on the planet.

For most of the great web of life on Earth, the accumulated effects of the activities of mankind are catastrophic, similar to asteroid impacts or massive volcanic eruptions. The devastating loss of biodiversity is usually referred to as the sixth extinction event (Leakey *et al.*, 1995).

Homo sapiens' influence and control over the planet is growing extremely fast. Human civilisation has been pushing back nature relentlessly for millennia but by far the biggest changes have happened in our lifetime:

- Half of tropical Asian nations have already lost more than 70% of their forest cover (Laurance, 2007).
- Coral cover in the Caribbean decreased 80% between 1977 and 2001 (Kolbert, 2011b).
- Every year, the planet loses 12 million hectares of land to desertification, and this is rising (IFAD, 2011).

The result of such developments is a vastly altered planet, a hiatus in the history of life. Paul Crutzen (Anon, 2011) suggested the term. 'Anthropocene' for the current geological period. EO Wilson (2002, p. 77), more emotionally, called the coming era the Age of Loneliness. The most fitting name, however, comes from film director Franny Armstrong who chose 'The Age of Stupid' for his 2009 movie on climate change.

There is a tragic dichotomy between long-term conservation of biodiversity — that is, conservation for the sake of itself or for future generations of mankind — and short-term profit interests of members of the living generations of *Homo sapiens*. The preservation of gene pools and natural evolutionary processes and development of human civilisation seem to be irreconcilable enemies. Even where remnants of nature are protected in

reserves, a growing human population, with its ever-increasing hunger for resources, is pushing back the boundaries, crying: 'Parks or people?'

The reasons for this kind of behaviour are found in human evolution. Wilson (2002, p. 40) points out:

> 'The relative indifference to the environment springs, I believe, from deep within human nature. The human brain evidently evolved to commit itself emotionally only to a small piece of geography, a limited band of kinsmen, and two or three generations into the future. To look neither far ahead nor far afield is elemental in a Darwinian sense. We are innately inclined to ignore any distant possibility not yet requiring examination. It is, people say, just common sense. Why do they think in this short-sighted way? The reason is simple: it is a hard-wired part of our Paleolithic heritage. For hundreds of millennia, those who worked for short-term gain within a small circle of relatives and friends lived longer and left more offspring — even when their collective striving caused their chiefdoms and empires to crumble around them. The long view that might have saved their distant descendants required a vision and extended altruism instinctively difficult to marshall'.

So, will nature inevitably lose the war that is waged against it by humans? Will the entire planet be domesticated by *Homo sapiens*? Will most of the genetic 'libraries' be burned, paved over or turned into monocultures? Into what future will the naked ape steer the small and vulnerable spaceship Earth?

Should current trends continue, combining strong human population growth, exponential growth of consumption and the application of revolutionary technologies to domesticate even the most marginal lands for humans use, wild nature could be wiped out more or less completely with little chances of a comeback. There is little that could be done in such a case apart from saving some survivors among the debris. In this scenario, nature might live on in the private reserves of wealthy philanthropists or in the resource-poor nature reserves of rich nations.

If the demographic transition unfolds as many demographers predict, the level of human population will stabilise at around 10 billion (Kunzig, 2011). However, the number of people is not that important. What counts is their ecological footprint, and while population growth rates have slowed down in the recent years, resource consumption and waste production keep exploding.

But maybe a new model of civilisation would emerge where the frantic race with the Joneses to accumulate ever more material goods would be replaced by other ways of achieving status within the social hierarchy, e.g., to become wise or 'good' instead of rich. Maybe economic growth will continue to be the 'heart' of civilisation but it will be dematerialised and decarbonised. New technology might push the carrying capacity of the planet higher, e.g. if nuclear fusion is mastered and energy becomes abundant. There are optimists who believe that one day speciesism will be considered as wrong as racism or sexism (Singer, 1991).

Transhumanists and other 'positive thinkers' see a brilliant future for humanity (for example, Nicholas Bostrom), some even imagine the coming of the so-called singularity that will eventually fill the universe with (super-)human intelligence (Kurzweil, 2005). In such bright scenarios of the future, there might be more chances for biodiversity. But even then, it will have to pass through an extreme bottleneck before it might get a chance to bounce back.

An optimistic minority among humans, belonging mostly to the well-educated middle classes of Western countries believe that helping a good part of nature's diversity to survive is a clever idea and that there is still some hope for its survival.

However, merely *setting up protected areas will be not enough to save biodiversity.* The pressures on nature parks and the difficulties in defending them are guaranteed to increase in the future as formerly poor nations scale up production and consumption. Any piece of land that can be used to make money will be occupied by humans.

Parks that are not profitable will be given up. *Nature either has to pay its way and out-compete other land uses or it will vanish.*

An idea that became popular in the 1990s was that *nature-based tourism would provide short-term economic benefits for people and preserve nature long-term at the same time*, thereby somehow squaring the circle. Ecotourism became a textbook example for sustainable development. In many cases, ecotourism may be the only chance to halt the destruction of nature.

Without doubt, ecotourism is a roaring economic success. Tourism is the second-largest legal industry on the planet and ecotourism has been its fastest growing sector for the last two decades. In 2004, the UN's World Tourism Organisation (UNWTO) estimated that ecotourism and nature tourism were growing three times faster than the tourism industry as a whole (Honey, 2008, p. 7). The near future will see a further sharp rise in demand for tourism products as the growing middle-class of the developing world enter the market.

But, amidst all the economic gains, some open questions remain. Will ecotourism be able to keep its promises as far as conservation is concerned? What are the prospects of ecotourism in a changed world that will be flat, hot and crowded (Friedman, 2008)? Can ecotourism be a central instrument to helping nature through the bottleneck?

35.2. Definitions and Evaluation Criteria of Ecotourism

The term ecotourism was coined in the 1960s (Weaver, 2001), worked its way into the general vocabulary in the 1980s and became inflationary after 2000. There is no generally agreed upon definition of ecotourism, anybody who uses the word seems to understand something different by it. There are overlaps with other kinds of tourism and a great number of competing terms. If someone goes on a ski tour in the mountains, enjoys the view and takes pictures of wildlife, is she a sports-, nature-, wildlife-, adventure-, photo- or eco-tourist? And how do responsible tourism, sustainable tourism, green tourism, voluntourism, geotourism, pro-poor tourism, low-impact tourism and ecotourism-lite differ from 'real ecotourism'?

What is understood as ecotourism depends on the partial interests of the different players involved. A major distinction between different definitions can be made by differentiating the term ecotourism used as a marketing tool for the tourism industry from one that predominantly stands for a conservation effort.

As Wight (1994, p. 39) points out:

> 'There seem to be two prevailing views of ecotourism: one envisages that public interest in the environment may be used to market a product; the other sees that this same interest may be used to conserve the resources upon which this product is based. These views need not be mutually exclusive'.

Today, the differences between those two views of ecotourism have become more pronounced. Over the last decade ecological issues have become fashionable in the mainstream of society and business and use and abuse of the terms 'green' and 'eco' has skyrocketed. One has to look twice to differentiate the 'greening' of the tourism industry from mere 'greenwashing' mainstream tourist operations (Wight, 1993; Honey, 2008).

On the other hand, those searching for the formula of 'real ecotourism' have found it necessary to make concepts of ecotourism increasingly multi-dimensional and are now emphasising issues such as interests of local stakeholders, cultural sensitivity and human rights.

In 1990, the International Ecotourism Society (TIES) defined ecotourism as 'Responsible travel to natural areas that conserves the environment and improves the well-being of local people'. (TIES, 1990). At the 1995 World Conference on Sustainable Tourism held in Lanzarote, it was agreed that:

> 'Tourism is sustainable when its development and operation include participation of local population, protection of the total environment, fair economic return for the industry and its host community, as well as a mutual respect for and gratification of all involved parties'. (Jafari, 1996)

Martha Honey (2008), director of the Center on Ecotourism and Sustainable Development, lists seven characteristics in her definition of ecotourism:

- Involves travel to natural destinations;
- Minimises impact;
- Builds environmental awareness;
- Provides direct financial benefits for conservation;
- Provides financial benefits and empowerment for local people;
- Respects local culture;
- Supports human rights and democratic movements.

Such comprehensive definitions are often based on quite idealistic win–win scenarios that are rarely found in reality. Whether any ecotourism operator can fulfil all of Honey's criteria in practice is doubtful. Such criteria are more an appeal that the ecotourism industry should strive for the best practice possible.

Without a generally agreed upon definition, ecotourism is also hard to evaluate. And it does not help that the usual measure of success of an ecotourism operation is its 'sustainability', another ambiguous and insufficiently defined term. In a world where the only constant is change, it is not surprising that the measurement of the sustainability of ecotourism is subject to controversy (Tisdell and Wen, 1997a, 1997b).

To define a sustainable ecotourism operation, Aylward *et al.* (1996) use visitation, finance, economics and ecology as cornerstones. Wells (1992) chooses negative variables to characterise the sustainability of ecotourism. Failure looms when there is lack of infrastructure, difficulties in access, political instability, ineffective marketing and absence of spectacular or readily visible natural features. According to the more comprehensive definition of Tisdell (1998) the sustainability of ecotourism depends on its economics, the

extent to which it is consistent with conserving its resource-base, its social acceptability and its political feasibility.

Many different factors have to come together (more or less simultaneously) to make ecotourism successful in the long run, and they cannot always be neatly separated. The following section looks at some of those determinants and how they can be favourably influenced for the future development of ecotourism.

35.3. Factors Determining the Possibility of Ecotourism

35.3.1. *The resource-base of ecotourism*

In order to start ecotourism, one has to know where and what the genetic resources are. This is not as obvious as it sounds. Humans know the surface of the moon better than their own biosphere and it is not even roughly clear how many species exist on the planet (Wilson, 1992). However, from the works of Linné, Humboldt, Wallace or Darwin to UNESCO's Man and the Biosphere Program and the International Census of Marine Life, it has become clear that the diversity of life is enormous and that the productivity of the biosphere depends on many organisms working together. Biodiversity is a crucial good that is not evenly distributed in the biosphere. Taxonomists have delineated so-called hotspots of biodiversity and endemism (Myers *et al.*, 2000).

Ecotourism can only make a substantial contribution to conservation, if it performs well in the regions of highest priority. Tropical rainforests on land and coral reefs in the sea account for about half of the known species.

In some cases, such biodiversity hotspots are congruent with regions of mainstream tourist interests. Healthy coral reefs attract many divers and snorkellers. In other cases, tourists have little interest in hotspot regions because there is a lack of charismatic species or the region is inaccessible. While Kenya and Tanzania are high-profile ecotourism destinations, their most threatened habitats, the tiny fragments of surviving coastal forests with many endemic species, receive almost no attention and therefore little protection from tourism.

Basic biological data have to be complemented with legal and political information. A central issue for ecotourism and the conservation of biodiversity is whether a society is able to set up and defend large nature reserves.

On the bright side, there are some politically and economically stable countries with rather law-abiding citizens. In the Scandinavian countries and in Costa Rica, it is possible for conservation-minded governments to set

up a national park, delineate the borders and send a few rangers on patrol in order to ensure the survival of wildernesses.

On the dark side, there are very many countries where conservation zones exist only on paper and politicians and local communities alike are exclusively interested in transforming nature into goods and cash. In the case of Indonesia, there are no significant social forces that are interested in stopping deforestation. Not only business people, national and regional governments but also most local communities are in favour of logging. There is no military solution to stop illegal logging in Indonesia because the army and the police are the main perpetrators. Indonesia is a powerful state and able to repel outside intervention, so that its national sovereignty remains unchallenged.

What would be useful is to collect such data and compile them in a global inventory to determine where conservation efforts and the ecotourism market are working well, where there are indicators of over-use, where demand is low but could be raised with the right incentives and where ecotourism is not viable and other forms of conservation efforts are necessary.

The objective is to create large conservation networks that comprise regions of high conservation priority. In addition to the hotspots, there are other important, auxiliary conservation areas. Fragmentation of habitats is an ever-increasing problem that can only be addressed by setting up migration corridors between protected areas. Where human impact is massive, buffer zones between conservation areas and domesticated land can help to defend biodiversity. A recent example of a planned conservation network is Alan Rabinowitz' brainchild 'Tiger Corridor Initiative' (Panthera, 2011) that is supposed to link the remnants of tiger habitats on the southern slopes of the Himalayas.

35.3.2. *Safety and rule of law — the prerequisites of the travel industry*

The establishment of ecotourism relies on some form of state structure that provides at least two public goods, security and a certain level of rule of law. Security is first. When a tourist starts thinking about possible travel destinations, she usually excludes those places where she is likely to be hassled by marauding militias, mugged, kidnapped, sexually assaulted or shot at with AK47s or mortars. Only risk-taking special interest-tourists travel into war or high crime zones. The highly species rich and extremely threatened western African rainforests are rarely visited by tourists because civil wars (e.g., in Liberia, Sierra Leone, Cote d'Ivoire) are frequent. Nigerian gangs or Colombian drug barons (alias guerilla leaders) try to abduct foreigners

in particular because they fetch higher prices than locals — which is also rather counterproductive for the tourism industry.

Second, tourism relies on at least a minimal version of the rule of law. Countries where every little road-block-king and clan chief make their own laws to extort bribes as in parts of central Africa or central Asia are usually not mainstream tourist destinations. Tourists travelling in their own car in Russia, have to face the fact that the cost for gifts for charming police forces equal that for petrol.

Tour operators prefer countries for their activities where their assets are not likely to be confiscated by local politicians. Where incompetent and corrupt governments milk investors too much or build up maddening Kafkaesque bureaucratic obstacles, operations are relocated to other destinations. Unfortunately, many of the world's genetic hotspots are located in developing nations that are extremely corrupt, have no rule of law and are prone to resolve conflicts with political violence. Decades of aid have failed to lift them out of poverty (Moyo, 2009), and Western-style elections have made them more and not less stable and prone to violence (Collier, 2009).

From a conservation point of view, it would be very important to make ecotourism work in those states. But how can customers travel in regions that are chronically unstable?

There are signs that the holy cow of absolute national sovereignty will be slaughtered or at least put on leave in the worst cases of state failure. Liberia is now ruled by reformers under President Ellen Johnson-Sirleaf, but before this change in government, the ruling kleptocracy was so out of bounds that aid donors introduced a system called Governance and Economic Management Assistance Program (GEMAP), in which the finance ministry could not incur expenditure without the approval of donors (Collier, 2009). More far-reaching is the UN's proposition 'responsibility to protect (R2P)', saying that the international community has the right to intervene to protect citizens from their own governments (Collier, 2009). R2P is applied, at the time of writing, in Libya with the unwritten aim to topple Colonel Gadhafi. Libya has rich oil deposits which might explain why Western air strikes to help the opposition were rapidly decided on whereas nobody seems inclined to oust an insalubrious president such as Robert Mugabe.

One aspect of restricting national sovereignty is to guarantee safety in tourist regions. But at least hypothetically, there is another benefit. When extremely optimistic conservationists get very drunk, they fantasise about rapid intervention forces and peace-keeping missions not only to protect

people against their own governments but also to protect precious species against people.

An international intervention could have saved the Northern White Rhino from extinction in the wild by keeping armed bandits in check, capturing the last rhinos and air-lifting them to Kenya.

> 'Devastated by poaching, only about 30 animals remained in DRC's [the Democratic Republic of the Congo's] Garamba National Park by 1995. Garamba suffered from repeated incursions from the janjaweed militia and now the Lord's Resistance Army. Manageable, containable subsistence poaching in the Park for bushmeat was replaced by full-scale poaching for rhino horn and elephant ivory. In 2005, a planned emergency translocation of five NWR from Garamba National Park to a sanctuary in Kenya became ensnared by political and local and national divisions and subsequently was cancelled' (Saving Rhinos, 2011).

Massive restrictions of national sovereignty will remain rare and will be reserved for failed states that have oil, diamonds or minerals to offer. But, at least in conservationists' dreams, such a partial takeover of state functions by the international community could include deals in favour of the environment.

Security problems in nature reserves may arise even in otherwise stable states where rebels or organised criminals take an interest in poaching, illegal logging or mining. For a tourist, it can easily become unhealthy to snoop around in illegal gold or diamond mines in the jungle or take too much of an interest in the activities of ivory poachers. Usually, such criminal activities have political protection, and can go on relatively undisturbed.

However, where strong conservation-minded power groups exist, they may succeed under favourable circumstances in building a relatively uncorruptible wildlife service. As head of the Kenya Wildlife Service in the 1990s, Richard Leakey built up a ranger army with 'shoot-to-kill' orders to stop armed gangs engaged in large-scale poaching. The French Government takes no chances, it unleashes the Légion Étrangère to deal with poachers in French Guayana.

A top-down militarised approach to conservation that was popular in colonial times is now usually considered a temporary measure. It only promises sustainable solutions when there is an enemy who comes from outside the region. After the Shifta War during 1963–1967, a secessionist conflict in Kenya's Northern Frontier district, many Somali fighters turned

to banditry and massive poaching of elephants and rhinos. In the following decades, Kenyan armed units were helped by British special forces to hunt the Shiftas. Although the British were the old colonial power, the intervention was supported by the local non-Somali population.

Military solutions are expensive and hard to keep up when the population adjacent to the protected area is involved in the illegal activities. In such cases, defending national parks by military means quickly resembles the asymmetrical wars fought by Western armies in the 21st century where the opponents hid behind women and children.

Therefore, usually a community-based approach is chosen. This can mean making a deal with the poachers and offering them employment if they stop hunting. In Mount Cameroon National Park, for example, former ivory poachers are employed by aid organisations to track the movements of the last elephants and to guide tourists up the mountain.

35.3.3. *Countering insufficient demand — ecotourism markets beyond the pure gospel*

A fundamental problem of ecotourism is that the golden path between too little and too much is extremely narrow. Either there are not enough tourists to create substantial short-term economic benefits or there are too many to allow for the long-term conservation of natural resources. In the first case, nature cannot pay its way and will vanish in favour of forestry, agriculture and other intrusive forms of human land-use, in the second case nature is simply loved to death.

Ecotourism resources have to be competitive in a world market that is ruled by supply and demand. An ecotourism destination is deemed attractive for paying customers when all or several of the following factors are present (Krüger, 2005; Honey, 2008):

- Richness in spectacular natural features, be it landscapes, flora or fauna.
- Presence of flagship or charismatic species. No safari is complete without the Big Five.
- Wildlife has to be easy to see. Whale watching without whales is no fun.
- Rare or endemic species are valued more highly than common ones. Flying foxes on the island of Rodriques do not look any different from common ones but they are a major tourism attraction because of their rarity.
- Closeness to markets with wealthy, educated people with high environmental awareness. Ecotourism in Central America took off because of its closeness to the US market.

- Accessibility of attractions in terms of transport and of transportation fees.
- Existence of suitable tourism infrastructure, hotels, restaurants, guides, porters.

Where all (or most) of those factors are present, ecotourism can generate large incomes.

Where there are high-class natural resources and flagship species, and consumer markets are not too far away, private investors will find a way to build infrastructure and make resources accessible to customers even in weak states. Where resources are attractive and good revenues can be expected but necessary investments are large or perceived to be risky, development agencies or conservation organisations often give funds to start up ecotourism activities.

However, many sites that are important for conservation do not fit either of those descriptions. Only a minority of protected areas have the potential for large revenues through ecotourism. Krüger (2005) found in his meta-analysis of ecotourism studies that of 'the 25 hotspots of biodiversity identified by Myers *et al.* (2000), at most six are partially covered by countries making the top 10 in ecotourism case studies... This indicates that there are many areas with a high conservation priority where it is unlikely that ecotourism could make a substantial contribution towards conservation'.

Future scarcity might improve the profitability of ecotourism in some regions. In the coming decades, the attractiveness of the last remnants of nature might vastly increase. The majority of humans will be cramped into megacities like aphids on rose buds — just that they do not smell lovely flower scents but stale urine and diesel fumes. For people who have grown up in such environments, seeing five trees together will already be a thrilling experience.

Nevertheless, there will still be places hardly anybody can or want to visit. How can nature pay its way in less endowed regions?

One option would be to make direct transfer payments to local stakeholders that exceed the potential gains from exploiting the given natural resources. Funds could come from sites more favourable for ecotourism that generate good income in the form of entrance fees or taxes, from state budgets dedicated to conservation or from national or international donors. Payments could be given out in cash or goods under the condition that the communities protect the natural resources. In countries with high levels of corruption, it has to be assured that politicians receive bribes in the order

of magnitude they would receive from the perpetrators of illegal activities. This kind of aid is discussed in more detail in Subsec. 35.3.5.

Another option could be to explore alternative marketing possibilities for nature and integrate them into the classical ecotourism approach. Nature sports, for example skiing or white-water rafting, have passed the threshold to become mass tourism in many places and cannot be called ecotourism. However, they are money-generating industries based on the existence of natural areas. They can be used to finance or protect natural areas in the vicinity that otherwise might fall under more deleterious forms of land use such as clear-cutting or grazing by sheep and goats. Intensively used nature sport areas can make an adjacent national park pay its way.

Hunting tourism ironically can be an ideal complement to ecotourism. Photo-tourists want to see large numbers of animals in attractive and at the same time accessible locations with good infrastructure. Hunters, on the other hand, are willing to travel long and arduous routes and to sleep rough. They are not primarily interested in the beauty of a landscape and they need to see only a few animals — the ones they have paid to kill. Revenue from a single hunter exceeds that of 50 or even a 100 photo-tourists (Honey, 2008, p. 244). Their impact on the environment in relation to the dollar spent is relatively low.

Well-organised hunting tourism can be the best possible way of protecting wildlife, even superior to strict nature reserves in countries with weak law enforcement. In many African countries, poachers caught by park rangers have to be handed over to the police force where they can easily pay their way out. In the rare cases, a law suit follows and they are bought out by their employers — often politicians or rich businessmen. Commercial hunters, on the other hand, tend to avoid the authorities and approach the poacher problem quite effectively on site with large-calibre bullets.

Honey (2008, p. 244) concludes: 'Although some of those involved in conservation and nature tourism find hunting distasteful, cruel and ethically reprehensible, many admit that if properly managed, trophy hunting helps curb poaching, does less environmental damage, and brings in much more foreign exchange than do photographic safaris'.

Canned hunting is popular in the US and southern Africa. 'Canned' means that animals are raised on farms or ranches and then set free in some sort of privately owned wilderness enclosure where hunters, with little time or stamina but much money, can blast them away. A milder version of canned hunting is similar to catch-and-release fishing. The animals are shot with tranquiliser darts and revived after the great hunter has had his hero picture taken.

A potentially very profitable species that is not yet widely used for canned hunting are tigers. There are only about 3000 tigers left in the wild and the prospects for their survival are extremely bleak. A cut up tiger can fetch thousands of US dollars on the Chinese traditional medicine market.

> 'In Taiwan, a bowl of tiger penis soup (to boost virility) goes for $320, and a pair of eyes (to fight epilepsy and malaria) for $170. Powdered tiger humerus bone (for treating ulcers rheumatism and typhoid) brings up to $1,450 lb. in Seoul' (Tigers in Crisis, 2011).

Even if poachers only get a small fraction of that money, the incentive to kill the last wild tigers is great. If tigers were to be mass produced on farms in a similar way to domestic animals, the prices for tiger-products would go down. And if the profits from farms could be partly used for serious conservation measures in tiger reserves, some tigers might survive in the wild. Due to rising wealth in China and other Asian countries, demand for tiger products is going to increase enormously. 'The use of endangered tiger products and their medicines is seen as a symbol of high status and wealth. . . . In many places in China, tiger parts are a delicacy that is served at special private banquets' (Tigers in Crisis, 2011).

To add value to tigers raised on farms, they could be sold to hunters who could shoot them without danger in enclosures. Instead of 'Pick your own strawberries!' the slogan could be 'Mince your own tiger!' In this business model, wealthy Chinese could earn prestige by serving their businessmen partners and friends truly homemade tiger penis soup or supplying them with tiger medicine. The big money they would have to pay for this pleasure could potentially help to save the last free-roaming tigers.

Other complements of ecotourism and conservation zones are theme parks and casinos. In the former South African homeland of Bophuthatswana, the hugely successful pleasure palaces and theme parks of Sun City and Lost City were built next to a game park, Pilanesberg National Park. The casinos create revenues that also benefit local people and help conservation. The 'symbiosis' between gambling casinos, national parks and rural communities has worked surprisingly well (Honey, 2008).

Killing wild animals in enclosures and building casinos next to national parks might be seen as absolutely revolting by many conservationists. But the time for preaching the pure gospel has long passed. Either nature presents viable economic alternatives to financially attractive but environmentally destructive industries or it will be swept away. Honey (2008, p. 364) quotes the South African tourist expert Alan Mountain: 'You have

to have ecotourism projects which match other forms of development. For conservation to survive, you have to fight fire with fire'.

35.3.4. *Preventing excessive demand: Preserving the natural resource base*

Tourism is a predatory industry that is mining paradises. Nature's nirvanas are converted into highways, hotels, fast food restaurants, souvenir shops, massage parlours, golf courses, marinas, garbage heaps and stinky sewage (Vivanco, 2002). 'Some 898 million international tourists are invading beaches, historic monuments, great cities and even greater wilderness areas, doing irreversible damage' (Becker, 2008). 'The negative impacts of tourism development can gradually destroy environmental resources on which it depends' (UNEP, 2001; Sunlu 2003). 'Paradise found is paradise lost' (Wilson, 2002, p. 102).

Proponents of ecotourism assure us that real ecotourism is different, that it is possible not only to 'greenwash' but to 'green' the paradise mining industry, to go from good concept to good practice.

The ecotourism industry has put great efforts in setting standards for the behaviour of its members in its tourism certification programs. One of the most ambitious of these programs is the Sustainable Tourism Stewardship Council, 'a global accreditation system to help socially and environmentally responsible tourism suppliers and consumers effectively contribute to biodiversity conservation and social welfare' (Rainforest Alliance, 2003). Doubtlessly, there have been great success stories. Without ecotourists, Costa Rica's rainforests would have been converted into plantations, the great herds of the Serengeti would have been put on the barbeque, the sea around the Galapagos Islands would have been fished out. But combining tourism and conservation to create a *sustainable* win–win situation is a formidable task.

Ecotourism can only be successful if it is able to preserve its resource-base in the long run. Ecotourism and conservation are two sides of the same coin.

Costa Rica's cloud forests, the savannahs of the Serengeti and the flora and fauna of the Galapagos Islands may have survived because of ecotourism but they are far from safe. The great popularity and profitability of such destinations puts them under great pressure from development and over-use (Honey, 2008).

Tisdell (1998) describes the possible 'self-destruction of tourism' in attractive destinations: 'Once an area becomes a profitable ecotourism

destination, an ever-increasing number of tourist developers may wish to share it. As numbers increase, the tourism resource base is eroded and the profits to other tourism operators decline'.

It is not easy to find the right balance between commerce and conservation.

Krüger (2005) conducted a meta-study of ecotourism studies and identified four main causes for the failure of ecotourism projects. In about half of the studies describing unsustainable projects, the main cause was habitat alteration, soil erosion or pollution created by tourists. In about a quarter of the unsuccessful cases, the main cause was the lack of local community involvement, resulting in consumptive land-use by the local population. In a fifth of the unsustainable projects flagship species were affected, their population declined or they showed serious behaviour alteration. In every tenth failed project, not enough revenue was created for conservation and local communities continued to practice consumptive resource use.

Krüger's results illustrate the tension between 'too little' and 'too much' ecotourism development. Ecotourism is only sustainable if there is enough income created to keep local communities interested to forfeit or postpone consumptive forms of land use. However, if ecotourism becomes too successful, vast numbers of tourists are likely to destroy habitats and will negatively influence the populations and behaviour of flagship species.

The boundaries of sustainability, between the 'too little' and the 'too much', are often close together and there is only a fine line to be walked. In order to be successful, ecotourism projects require a high degree of management quality and control (Tisdell and Wilson, 2001).

A number of concepts have been developed to evaluate changes in nature and adjust the human impact accordingly. IUCN's Hector Ceballos-Lascuráin (1996) discusses environmental impact assessment, carrying capacity, limits of acceptable change and visitor impact management. Other important concepts are ecological footprint and safe minimum standard.

While straightforward on paper such concepts are often difficult to operationalise in practice. They suffer from the imprecise definition of the underlying concept of sustainability of the natural resource base. Natural systems are dynamic, there is no definable steady state. Ecosystems can fluctuate within wide borders or even develop into something completely new. If one wants to measure changes what is the reference point? As humans' understanding of nature is limited, there will always be decisions made according to subjective preferences.

A good example is decision-making based on measures of the ecological footprint. Patterson *et al.* (2007) calculated the ecological footprint of tourists in Italy's Merse valley by converting consumption and waste generation into land surface values. The touristic infrastructure of the Merse region consists mostly of agroturismo, or farm tourism, meaning tourists sleep on farms and consume mostly locally produced food. Spending their holidays in such a way, the ecological footprint of tourists in the Merse valley itself was low, even slightly less than that of residents. However, when the transport of tourists to and from the travel destination was entered into the calculation, the ecological footprint of visitors skyrocketed and became seven times higher than that of local residents. Transport accounted for 86% of the ecological footprint.

The conclusion one draws from such results depend on the scale and location of the resource-base one is looking at. Globally, there is the problem of the greenhouse effect. If one wants to minimise carbon dioxide emissions, then the only sensible form of ecotourism is to stay at home and spend one's holiday on the porch or balcony. In other words, giving priority to the reduction of global warming, real ecotourism is non-tourism.

At the local or regional level, however, there might be a great need to conserve a natural habitat in order to save threatened species. A local community might be willing to protect the resource if it receives value from it. In such a case the carbon dioxide emissions have to be weighed against the opportunity to protect biodiversity. Ecotourism companies are aware of those problems and usually recommend their customers to pay into carbon offset schemes to compensate for the emissions caused by travel (Planet Green, 2011).

Carrying capacity is a popular concept used to limit tourist numbers and manage tourist streams in order to protect nature. In some developed countries, the national park service implements restrictions for natural resource use and enforce laws and regulations. In New Zealand, the number of tourists allowed on popular hiking treks is strictly limited. In Australia, only a limited number of tour companies get licenses to raft on a river or to dive in a certain section of the Great Barrier Reef.

Theoretically, a combination of scientifically determined safe minimum standards could lead to an objective determination of the tourism carrying capacity of an ecotourism region. Safe minimum standards are applied in many situations in everyday life. Health authorities measure pesticide residues in fruits, heavy metals in vegetables, radioactivity in mushrooms, ozone concentrations in the air or the number of faecal bacteria in the water of beach resorts. Foresters calculate how much tree cover is needed on a slope

to prevent avalanches or mud slides. Geneticists try to determine minimum population sizes of species in order to prevent inbreeding.

Tourists can cause water pollution, soil erosion or drops in the population size of species. For such parameters environmental standards could be set. However, many regions with high biodiversity have been hardly studied, so it might be impossible to come up with scientific data for tourism impacts. More importantly, ecotourism is not a controlled field experiment to determine a scientifically based carrying capacity; it is a dynamic real life operation, where social and economic pressures usually take precedence over ecological considerations.

Tisdell (1998) discusses the concept of carrying capacity using the example of the remote island of Fernãndo de Noronha in Brazil. He concludes: 'Even this simple Brazilian case indicates the complexity of the carrying capacity/sustainable tourism concepts.... The limits on the number of tourists allowed to visit Fernando de Noronha appears to have been determined by a combination of ecological, social and public revenue considerations all of which entail value judgments...'.

The problems with managing the natural resource base can be divided into two categories. First, there is the difficulty of collecting data, defining desirable states of nature, measuring aberrations from those states and coming up with to-do lists to counter undesirable developments. East African savannahs can show great deal of variation in vegetation cover, sometimes developing towards forests, and sometimes turning into almost treeless steppes (Leakey *et al.*, 1995). The reasons can be fluctuations in climate or in density of tree-consuming elephants. When elephants become too numerous in a national park, should they be culled or is there the possibility to open up a migration corridor to less populated habitats or even to capture and relocate the animals? Such management decisions are complex and can only be answered by scientists.

On the other hand, there are many parameters that can be easily monitored by park managers or tour guides. When one visits the same place many times, one can tell, for example, if the numbers of a certain flagship species have increased or declined, if rivers that have been full during the dry season now run dry because of logging, or if human populations adjacent and in protected areas have increased. Even ecotourists who visit a park only once can tell if there is illegal logging, bush fires or signs of poaching (such as traps, cartridges or carcasses).

Especially visible are changes in the environment caused by tourists because they move along beaten tracks. Habitat alteration, track erosion, pollution or behaviour change in animals, e.g., begging for food, are easy to

detect. Where there is no functioning monitoring system by local authorities, tourists themselves could engage in data collection. There are myriads of travel websites and chat rooms on the internet. Why not set up a website that records the experiences of tourists in protected areas around the world? Even if such subjective monitoring would not satisfy scientific standards, it would be global, cheap, could identify problems and spur action.

Despite all difficulties, it should be possible to come up with a list of recommendations to conserve nature in almost any tourism destination.

The second category of problems regarding the preservation of the natural resource base of ecotourism comprises the implementation and control of measures. Of all the parties involved in ecotourism, nature has the weakest stand. Ecotourism markets heed the demands of paying customers not threatened species. Value judgments regarding tourism revenue, integration of local communities and preservation of nature are likely to consider the natural resource-base last.

Isaacs (2000, p. 61) sums this up: 'Ecotourism is a proxy market designed to align consumers' preferences for recreation with the protection of environmental assets. Because it does not necessarily address the direct protection of those assets, it is prone to market failure. Pressures on governments and firms involved in providing ecotourism services will impair their ability to minimize detrimental effects of human economic behavior. Ethical appeals to minimize harmful practices face serious obstacles'.

The implementation and control of measures to preserve the natural resource rely much less on scientific recommendations than on what Tisdell (1998) called political feasibility and social acceptability. These factors are discussed in the following chapter.

35.3.5. *Ecotourism and realpolitik — controlling greed and giving conditional aid*

Within and between societies, different stakeholders vie for influence and power to pursue such policies that serve their interests. National governments, provincial governments, local communities, aid organisations or conservation NGOs may all follow their own agendas.

Where there is money to be made, everybody wants a piece of the cake and the potential for conflict is great. Honey (2008, p. 218) remarks on Tanzania: 'Ecotourism is flourishing, but the rapid rise in the tourism values of this 'African Eden' creates winners and losers in the scramble to cash in'. The losers might easily turn against nature and resume consumptive

ways of land-use. Therefore, a sustainable ecotourism industry can only be established, where a balance between the different levels of power in society can to be achieved.

There are many frontlines and often they run through muddy lands and murky waters. Often, it is not easy to tell who the villain is and who the hero is:

- Attitude towards nature: There are societies with a strong environmental ethic, and those where the environment traditionally does not count. The leaders of Malaysia and Indonesia have decided that the best way to embrace the future is to convert most of their countries' territory into giant palm oil plantations. On the other hand, tiny Bhutan wants to preserve its forests and calculates progress not in growth of GDP but in growth of Gross Domestic Happiness. Japan is very protective of the environment at home, but brutally predatory abroad.
- North against South: Developed countries became rich by exploiting their natural resources in historical times, thereby massively reducing biodiversity and emitting greenhouse gases (Williams, 2006). Many developed nations are now in favour of environmental protection and want other countries to join their course. However, developing countries are claiming their right to become rich by exploiting their natural resources, even if that means massively reducing biodiversity and emitting greenhouse gases. Arguments are passed to and fro, and nature loses.
- Single country against International Community: Strong countries such as the US or China do their own thing and strictly reject attempts from outside to influence their environmental policies. Weak countries in the developing world are often largely financed by aid and therefore can be at least theoretically influenced by a carrot-and-stick policy of donors. But as long as this shining beacon of virtue, the United States of America, has not even ratified such milestone treaties for good environmental behavior such as the Convention on Biological Diversity or the Kyoto Protocol, one could question why a sub-Saharan developing country should be motivated to comply with the conditionality of aid.
- Conflicts between power groups within a country: Differences of interest may arise between tribes or political factions, between central and provincial governments, between government and local communities. For example, ecotourism development may be the best economic option for communities living in or adjacent to rainforests. But the dictator in the national capital may prefer to give out logging concessions to family and

friends (Colmey, 1999). Local communities may try to find opportunities in game-viewing tourism but government officials may see revenues and bribes from trophy hunting as more promising (Honey, 2008, p. 248).

- Conversely, national or regional governments might further ecotourism development but local communities might be hostile to it because they have little economic gain or see it as a threat to their lifestyle and livelihood (Mishra, 1982; Tisdell, 1998). Without sufficient remuneration from ecotourism, they may continue to poach, fell timber or burn native vegetation to make room for fields (Krüger, 2005).
- Distribution conflicts not only arise between governments and local communities but also between clans, families and individuals. Honey (2008, p. 465) writes about the CAMPFIRE project in Zimbabwe: 'Ecotourism ... has been going through difficult times because of the country's ongoing political and economic crisis. This has been compounded at the village level by corruption, clan patronage, and decline in community participation ...' Tourism revenues disappear in the pockets of village leaders when they should have been spent on community projects.

But, where are the noble savages sharing lovingly and responsibly the fruits of creation? They are nowhere to be found. No matter where one looks, the world is full of bickering, in-fighting humans employing greed, envy, conspiracy and treason in the eternal quest for short-term gains. In all this muddle of interests, in this cacaphony of voices shouting 'I! Me! Myself!' there is only one party who is never heard. Nature cannot talk. And those who talk for her often follow their personal agenda.

Homo sapiens are capable of cooperative action to an extent otherwise only found in social insects. But there are striking differences in the results of such working together. In the hard-working societies of bee hives, ant nests and termite mounds, the individual is rather stupid but the cooperation of many insects following simple rules results in the emergence of amazing collective intelligence (Wilson and Hölldobler, 2009, 2011).

In *Homo sapiens*, on the other hand, the individual is relatively clever and capable of rational decision making. But taking the actions of many humans together leads to the emergence of stunning collective stupidity. Open-access resources such as the open sea or the atmosphere are exploited and polluted as if there would be no tomorrow. Coral reefs are dynamited and doused in cyanide, rainforests are slashed and burned. Why conserve the planet's biodiversity for future generations or at least for future profits when you can make a quick buck now? Humans leave no genetic bridges into the future, they burn them as they move on.

Ecotourism is not and will never be the only means for the conservation of biodiversity, but it is the only one that can instrumentalise a central driving force of human behaviour: greed. Where people can reap higher profits with tourism than with logging, hunting or mining, wilderness might get a chance to survive. In favourable cases, ecotourism makes more money in the free market than alternative land-uses. Gorillas are worth more when they are shown to tourists than when they are sold as steaks to restaurants and on bush meat markets.

A major problem with free market reliance is that tourism is a highly volatile business. Countries go in and out of fashion like skirt lengths, even minor disturbances in a country can ruin a tourist season and the aid caravan always moves to the fattest pastures. Where incomes from tourism are sinking, chain saws, hunting rifles, traps and fishing nets are quickly back into action.

When there is such a downturn in the markets or when resources are not attractive enough to draw enough paying customers, the gap in profitability needs to be made up by subsidies. Wealthy countries can finance this from their own budgets. Poor countries rely on help given by international aid agencies or conservation NGOs, at least during the initial phase of ecotourism establishment.

Motivated by political reasons (especially during the Cold War), by the wish to gain access to resources, but also by post-colonial guilt or simply the wish to do good, Western nations have developed a vast aid industry. Aid money is now a substantial source of income in many countries and under certain circumstances can influence policy decisions. For decades, aid has been given with the aim to rectify power imbalances between and within societies, alleviate the fate of the poor, school the illiterate, empower women or prepare weak economies to compete in international markets.

A precondition for the sustainability of conservation and ecotourism is that social tensions do not result in widespread insecurity or environmentally destructive activities. It is, therefore, necessary to gain the cooperation of the people living in or near the areas destined for preservation. This is the logic behind the community-based approach of ecotourism and related aid projects. It is not enough to make the president and the provincial governor richer and to ensure profits for the businesses involved in ecotourism, the local communities have to get a piece of the pie too. The local stakeholders will only protect what they receive value from.

Community-based approaches that promise financial benefits in exchange for not exploiting natural resources have become popular since the IUCN

World Congress on National Parks in Bali 1982. Community-based ecotourism projects have been funded by many international development agencies, World Bank, USAID, IDB, a range of UN-agencies, most prominently by the Small Grants Program of UNDP, and a myriad of NGOs (Honey, 2008). Additionally, many tour companies have guest donation programs that support community-based projects.

Funding conservation and ecotourism projects furthers economic activities or makes transfer payments that are more profitable than traditional environmentally deleterious activities. It is a special brand of conditional aid. Simply speaking, donors' messages to recipients are something like: 'If you do not chop down this rainforest or shoot those elephants, we will help you to make money with ecotourists or we will build a school and a hospital in your village or we will simply line your pockets'.

Potentially, it could be such a pretty picture. Where markets fail and governments blunder and plunder, international aid steps in like a knight in shining armour to save the poor. But the reality is sobering. After decades of aid programs, it has been neither possible to lift the poor out of misery nor to stop the devastating environmental destruction in many developing nations.

There is rising acknowledgment that aid is not part of the solution, but part of the problem (Easterley, 2001; Collier, 2009; Moyo, 2009; Polman, 2010). The aid trap is as dangerous as the oil trap. Both natural-resource windfalls and aid 'are susceptible to theft and have provided unlimited opportunities for personal wealth accumulation and self-aggrandisement'. (Moyo, p. 48).

Organisations collecting money for 'green' projects are just as subject to structural pressures and moral hazard as the mainstream aid industry. The first concern of conservation organisations is to collect donor money, spend it all before the end of the fiscal year and to write reports saying there has been progress, but not quite enough and that there is need for more aid. The second concern is to please powerful men in the countries where they want to operate. Few organisations have jeopardised jobs by speaking out against the incumbent president. Sometimes, even long-established conservation organisations seem to forget that the central purpose of their existence is to care for threatened nature (Schuster *et al.*, 2007).

Even the do-gooders sometimes succumb to temptation, and as long as human nature does not change — think of the transhumanists' ideas — such problems will not go away. Humans are not altruistic ants but hierarchical, selfish primates. There will always be distribution battles and resulting inequalities. There will inevitably be losers in society and poverty will not

vanish any time soon. Powerful leaders will direct revenues from natural resources towards their own power base, usually their own tribe or clan, or pocket them themselves. Aid often will not reach its originally planned recipients but will support dictators, governors and village leaders, will finance armies, SUVs with tinted windows and luxurious lifestyles.

Those facts are well known and there seems to be a change of attitude away from unrealistic UN 'Millennium Development Goals', big push and take-off theories based mainly on massive injections of money. There are fresh ideas how to partly get rid of aid in favour of market approaches, follow the Chinese way of infrastructure-against-resources deals or circumvent corrupt governments in the aid system (Moyo, 2009). Some of these might work for ecotourism and conservation projects, but others will not, e.g. the Chinese way to deal with the environment, will not. The following changes have been suggested for giving international aid:

- Increase transparency and control: In Western countries, there are taxpayers' organisations which control government spending. Corruption is monitored by organisations such as Transparency International. 'NGO watchdogs' such as the American Institute for Philanthropy or Charity Navigator try to sort the white from the black sheep amongst non-governmental development aid and conservation organisations. The internet also has greatly increased the possibilities of finding out who does what and who spends money how.
- Professional and coordinated approach: A new tough breed of philanthropists, sometimes very wealthy men such as Bill Gates, Warren Buffett, Ted Turner, Paul Tudor Jones or Douglas Tompkins and their respective organisations, have brought a more efficient and businesslike approach to development aid and conservation. Competition between development teams and stringent control of progress are supposed to lead to improved performance. Those active in conservation have bought up huge natural areas and transformed them into reserves, leading both to applause and suspicions of conspiracy.
- Combining conditionalities and a community-based approach — Conditionalities, that is restrictions placed on the use of aid, have failed miserably in the past. An unholy alliance has formed between bad governments and colluding aid organisations which have to keep the aid flowing to justify their own existence. The World Bank (2011) now champions the idea of paying cash to the poor for better behaviour. These so-called conditional cash transfer programs or CCTs exist in more than 30 countries. They circumvent the government by paying directly into the hands of the

targeted people. Examples include cash given for school attendance, to decreasing child labour, for seeing doctors to improve health or for using condoms to stay HIV-negative. Similar programs by organisations such as the German Gesellschaft für Internationale Zusammenarbeit or the London-based Flora Fauna International have tried to further ecotourism with payments for building tourist accommodations, for demarcating hiking tracks and assisting with finance and marketing. Needless to say, the long-term success of such programs depends on sufficiently honest and incorruptible people who can competently measure good behaviour and distribute cash only to those who deserve it. Maybe genetic engineers will succeed in cloning some saints for this job.

- Linking conditionalities, carbon credit and a community-based approach to conservation: Currently, one of the hippest concepts for conservationists is REDD, or Reducing Emissions from Deforestation and Forest Degradation (Minas, 2010). In such a project, communities in the Indonesian province of Aceh aim to reduce deforestation and forest degradation and thereby cut down greenhouse gas emissions. These foregone emissions are then certified and put on sale by the Acehnese government. The future buyers of the resulting carbon credits use them to counter their own emissions in order to help meet their greenhouse gas reduction targets. However, REDD does not stop here. To ensure control of the reduction in logging and degradation, ex-guerilla fighters, loggers and poachers are trained as rangers. It is assumed that the new rangers value their now continuous salaries high enough to refrain from illegal activities, refuse bribes and to catch their ex-colleagues who are still in business. Additionally, REDD-project forests have the potential to become an asset in ecotourism programs. It can only be hoped that such a beautifully constructed scheme will somehow survive the rude contact with Indonesian reality.

Yet why not coerce polluting industries to run such projects themselves? Big Oil surely knows how to protect resources and how to deal with presidents and local communities alike. Fight fire with fire . . .

35.4. Concluding Comments

In past years, short-term thinking, incompetence and the seemingly limitless greed of key players have shaken the trust given to market economies and liberal democracies. Adding insult to injury, even the saintly realms of the 'do-good' communities have lately come under critical scrutiny. Is ecotourism, the celebrated synthesis of business, community development and conservation, any better in fulfilling its promises? Can an industry that is

mining paradises help to save the last natural ecosystems on Earth? The answers to those questions depend on context and on the acceptance of lesser evils as solutions.

It has been pointed out above that, in order to be successful, ecotourism

- has to be established in regions that are ecologically especially valuable — a central data bank on species and their distribution may give recommendations for ecotourism development,
- can only thrive in relatively secure countries with a minimum provision of public goods; restrictions in national sovereignty in the case of failed states or military interventions against poachers and illegal loggers may be necessary,
- has to be attractive for paying customers; where the classical ecotourism product fails, supporting markets such as hunting or gambling tourism may have to be developed,
- has to be careful to preserve its resource-base — ecological accounting, international monitoring and the setting of industry standards could be valuable instruments,
- has to be politically feasible and socially acceptable — realpolitik and reformed aid may help to find a balance of interests of different stakeholders.

Despite all the initial difficulties in establishing and finding the appropriate concepts and monitoring their implementation, ecotourism can play a central role in helping part of biodiversity through the survival bottleneck. Increasing human pressure on the last wildernesses will lead to a scarcity of natural resources. New tourism markets will develop, with most of the future tourists coming from Asia. Falling supply and rising demand will drive up prices with the potential for good ecotourism profits that can prevent a range of valuable habitats from annihilation. When money can be made with ecotourism and managers are able to restrain their greed, ecotourism can indeed make a valuable contribution to conservation.

The times they are a 'changing', and the waters are rising, but there is no reason for gloom. The reshaping of planet Earth will continue but humans will not be lonely. Rats, cockroaches and mosquitoes will thrive in terrestrial habitats, and the seven seas will teem with algae and jellyfish. Where nature can pay its way, pockets of wilderness will hold out, waiting for an opportunity for a new beginning. The biosphere will survive the sixth mass extinction as it has survived the previous ones. Life will go on.

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Chapter 36

ECO CERTIFICATION IN QUEENSLAND'S WET TROPICS WORLD HERITAGE AREA: IS IT GOOD FOR BUSINESS?

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Abstract: Certification is heralded as one of the most effective measures for advancing the sustainable tourism agenda. Yet, if it is to do so, it must encourage tourism operators to alter their behaviour. When assessing the success of a certification scheme, it is, therefore, essential to look at the degree to which the scheme engages those who would otherwise be uninterested — hypothesised here to be those who are primarily motivated by profit. Reasoning that certification can raise profits if it raises revenues and/or decreases costs, this chapter examines both existing literature and new empirical data on the popular Australian *ECO Certification* scheme to draw tentative conclusions about the circumstances in which certification is likely to increase operator revenues. It finds little evidence to suggest that certification will raise revenues unless consumers can, simultaneously, be convinced that certification is capable of 'making a difference'. The policy implication of this finding is that certification schemes must be able to clearly articulate and market this message to tourists if they are to attract more voluntary members and thus advance the sustainable tourism agenda. This is, of course, unless they are concurrently able to lower operator costs — a topic worthy of future study.

Keywords: Certification; ECO Certification; sustainable tourism; willingness-to-pay.

36.1. Introduction

Over the last two decades, tourism has emerged as one of the world's major economic activities contributing to global GDP, employment and capital investment (Saji and Narayanasamy, 2009). With such positive economic

impacts, it is no surprise that this multi-billion dollar industry[1] continues to occupy the development policy agendas of many governments (Cornelissen, 2005). History has shown that whilst the industry is volatile,[2] it is also incredibly resilient with the ability to bounce back quickly after adverse shocks (Christ *et al.*, 2003). This is supported by the fact that tourist arrivals around the world continue to boom, with over 124 million global arrivals in just the first two months of 2011 — 5 million more than in the same period of 2010 (UNWTO, 2011).

But the news is not all good. With predictions that the industry will reach 1.6 billon arrivals by 2020 (UNWTO, 2009), and given the abundant evidence of the adverse environmental and social consequences of tourism (Moscardo, 2008) there are concerns whether the industry will be able to develop in a 'sustainable' manner (Conaghan and Hanrahan, 2010). If it is to do so, it is imperative that tourism is well managed.

Of the many tools proposed to regulate development and management of the tourism industry, certification is potentially the most prominent and is lauded for its ability to align private incentives with social and environmental values (Melo and Wolf, 2005). Defined as '. . . a voluntary procedure that assesses, audits and gives written assurance that a facility, product, process or service meets specific standards', certification 'awards a marketable logo to those that meet or exceed baseline standards' (Honey and Rome, 2001). This allows 'responsible' enterprises to be identified, so that consumers who want to practice sustainability in their actions are able to make appropriate choices (Bakas, 2005; Chamorro and Banegil, 2006; UNEP and WTO, 2005).

Promoters of the concept thus maintain that certification renders benefits to certified businesses, to consumers, governments, local communities and to the local biophysical environment (Bien, 2007; Font and Buckley, 2001; Honey, 2002; UNEP, 1998).

A handful of researchers have examined operator perceptions of certification programs and found that while awareness of and involvement with certification schemes is increasing, there is still uncertainty among operators about the potential impacts of certification. It appears that operators perceive significant barriers to certification (Darling, 2010), with the costs and

[1]In 2010, international tourism receipts are estimated to have reached US$919 billion worldwide (693 billion Euros), up from US$851 billion (610 billion Euros) in 2009, see (UNWTO, 2011).

[2]Several external factors can result in significant setbacks for tourism, for example, terrorism, political instability, global economic shocks, environmental disasters, negative media portrayals, etc.

fee structure of certification schemes being the main deterrents (Cheyne and Barnett, 2001; Darling, 2010; Rowe, 2004). This is consistent with literature on what drives firms to implement sustainable practices: many intrinsic and extrinsic factors affect implementation, but in most cases, it is a financial factor that operates as the main driver[3] and also a financial factor that operates as the main obstacle. While some businesses recognise non-monetary benefits to themselves and to society from improved environmental performance, others treat environmental decisions as just another business decision, to be determined on the basis of profitability alone (Darling, 2010). Businesses such as these are thus only likely to subscribe to the idea of certification if it can be proven to be in their best interests financially (Reinhardt, 1999).

But if certification is to make a genuine difference, there must be *additionality* (Schneider, 2009; McKenney and Kiesecker, 2010). That is, it must be capable of altering the behaviour of firms rather than simply providing a logo for those who would have 'done the right thing' anyway. As such, when assessing the success of certification as a means of advancing the sustainable tourism agenda, it is essential to look at the extent to which certification schemes are able to engage those who would be otherwise uninterested — hypothesised here to be those who would only be likely to subscribe to the idea, if they were convinced that it would increase their profitability. The literature tells us that in some instances, businesses may be able to lower costs when incorporating elements of sustainability into their operations (Stoeckl, 2004). But perhaps the most appealing of motivations for joining certification schemes is that certification promises businesses a marketing advantage and hence a competitive edge by attracting clients who are willing to pay a premium for a certified product (Teisl *et al.*, 1999; Tjolle, 2008).

There is an array of research investigating the veracity of such claims, looking specifically at consumers' awareness and willingness-to-pay (WTP) for certified products. However, most of these studies have focused on the food sector (e.g., Aryal *et al.*, 2009; Krystallis and Chryssohoidis, 2005) and on the forestry sector (e.g., Aguilar and Vlosky, 2007; Manaktola and Jauhari, 2007). In tourism, such investigations are relatively few and far

[3]Examples of some of the drivers for the implementation of sustainable measures include financial gains; ethical stance/moral; obligation; response to customer demand; improved image; marketing/competitive advantage; fear of negative PR; demonstrate role of leadership; prestige and pride. Obstacles include for example, high costs (investment and running costs); lack of time and knowledge; fear of jeopardizing customer satisfaction; and difficulties in involving staff (Ayuso, 2007; Bohdanowicz, 2006; Miller, 2001; Stabler and Goodall, 1997; Vernon *et al.*, 2003).

between, despite previous research noting that certification schemes have flourished (Fairweather *et al.*, 2005; Schott, 2006). Indeed, very little is known about consumer views of tourism certification schemes (Schott, 2006).

Consequently, the purpose of this chapter is to consider the hypothesis that certification can increase the profits of tourism operators by looking for evidence that it is able to increase revenues. The perplexing and equally important question of whether certification is also capable of lowering costs is a matter for further research.

To facilitate this goal, the chapter examines existing literature and also presents new empirical data on the popular Australian *ECO Certification Program.*[4] In Sec. 36.2, we use insights from the literature in conjunction with the primary data collected in a survey of visitors to the Wet Tropics of Queensland World Heritage Area (WTQWHA) in Australia, to try to determine whether consumers are willing to pay a 'premium' for certified tourism-related products (specifically, accommodation, tours and attractions). We also use the primary data to assess the impact that such price (and associated quantity) changes would have upon operator revenues, assuming no change to the existing customer base. We follow by looking at whether certified operators might be able to supplement their existing customer base with new customers, who might be more likely than others to pay a premium for certification (Sec. 36.3). In Sec. 36.4, we examine the significance of knowledge and visitor perception of certification with WTP. We conclude in Sec. 36.5 with a synthesis of those findings and we make recommendations for future research.

36.2. Are Tourists Willing to Pay More for Certification?

36.2.1. *Previous literature*

Some researchers — for example Bakas (2005) — caution against investing in certification as the extent of demand is mostly unknown. However, there exist a few studies that have measured visitor's expressed WTP for certification.

[4]The *ECO Certification Program* is run and operated by Ecotourism Australia. The program is said to assure travellers that certified products are genuine, are of high quality and are backed by well-managed commitment to sustainability (Ecotourism Australia, 2010; Warnken *et al.*, 2004), and is well-established with several operators subscribed to this scheme. Its popularity also extends internationally. According to its promoters, *ECO Certification* is a globally recognised brand and is now being exported worldwide as the *International ECO Certification Program.*

Based on those findings, it appears that visitors are likely to pay a premium for certified products. To illustrate, in a survey of almost 500 Danish visitors staying in *Green Key* certified accommodations, 69% expressed WTP extra for hotels with ecolabelling, with 34% of them expressing willingness to pay \$0.25–\$5.00 more to stay in a certified hotel. Remarkably, 2% were even willing to pay \$25 more (cited in Chafe, 2005). In Queensland, Australia, visitors indicated that they were willing to pay a 5% premium to use certified businesses (Enhance Management, 2000).

Yet before concluding that an expressed WTP necessarily translates to increased revenue, it is important to analyse the results of such studies a little more rigorously, as was done in the study outlined below.

36.2.2. *New insights*

36.2.2.1. *Study area*

The Wet Tropics of Queensland World Heritage Area (WTQWHA) in Australia stretches from near Cooktown in the north to near Townsville in the south and borders the Great Barrier Reef along a considerable part of the coastline (Fig. 36.1). It covers almost 900,000 ha and includes several national parks, with most of Australia's extensive remaining area of wet tropics rainforest protected there (Wet Tropics Management Authority, 2009). Its World Heritage status means that it is recognised as a globally significant ecosystem meriting special protection (Vogel, 2009). It hosts more than five million visitors each year, and these tourists make an important contribution to the region's economy (Gillespie Economics, 2008; Buckley, 2004; Driml, 1997, 2002; Prideaux and Falco-Mammone, 2007).

36.2.2.2. *Questionnaire*

Reasoning that certification can increase revenues if it can EITHER

(a) increase visitor numbers

AND/OR

(b) increase the price operators are able to charge (without causing a significant decline in visitor numbers),

we used a contingent valuation-type approach, to determine how tourists would respond to ECO Certification — with, and without, an accompanying price increase.

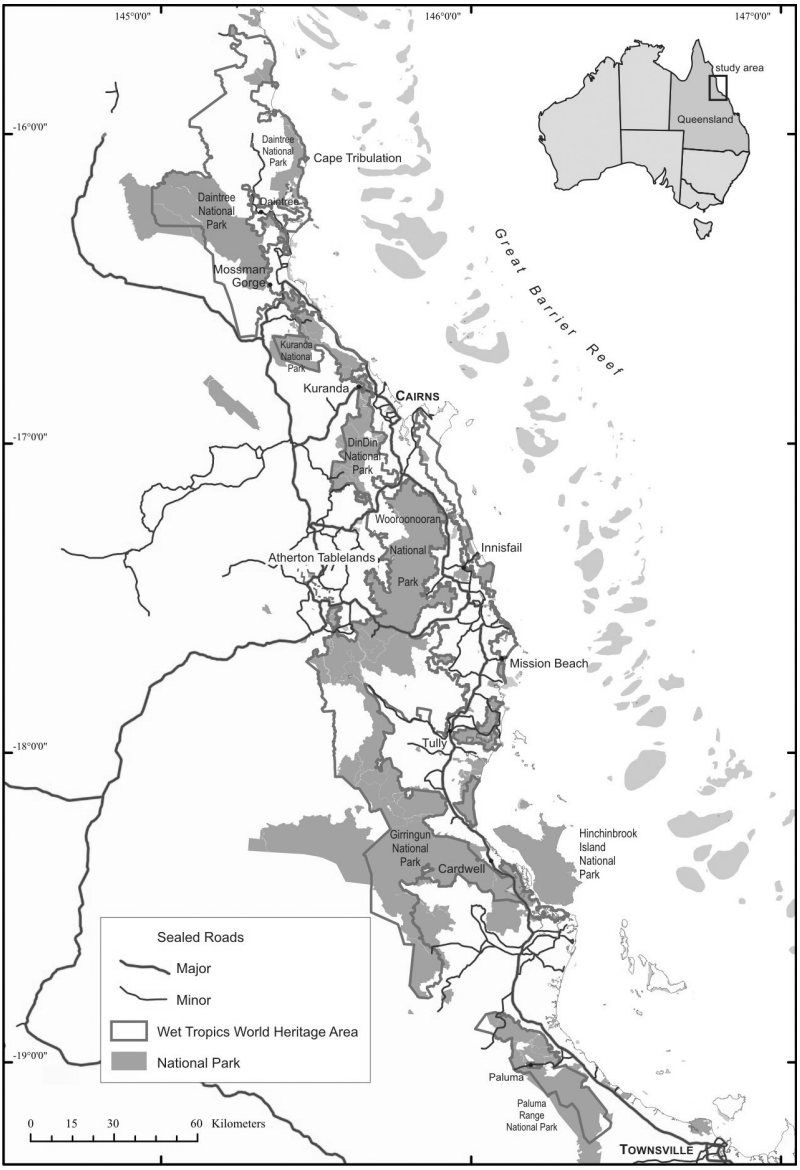

Fig. 36.1. The WTQWHA and environs.

Specifically, we asked two questions (Fig. 36.2):

Formally, the second set of questions is a variant of the double-bounded dichotomous[5] choice form of the contingent valuation technique. Additional

[5]As recommended by the NOAA panel, it is best to use a dichotomous choice format in contingent valuation (CV) surveys, since it is incentive-compatible, simple

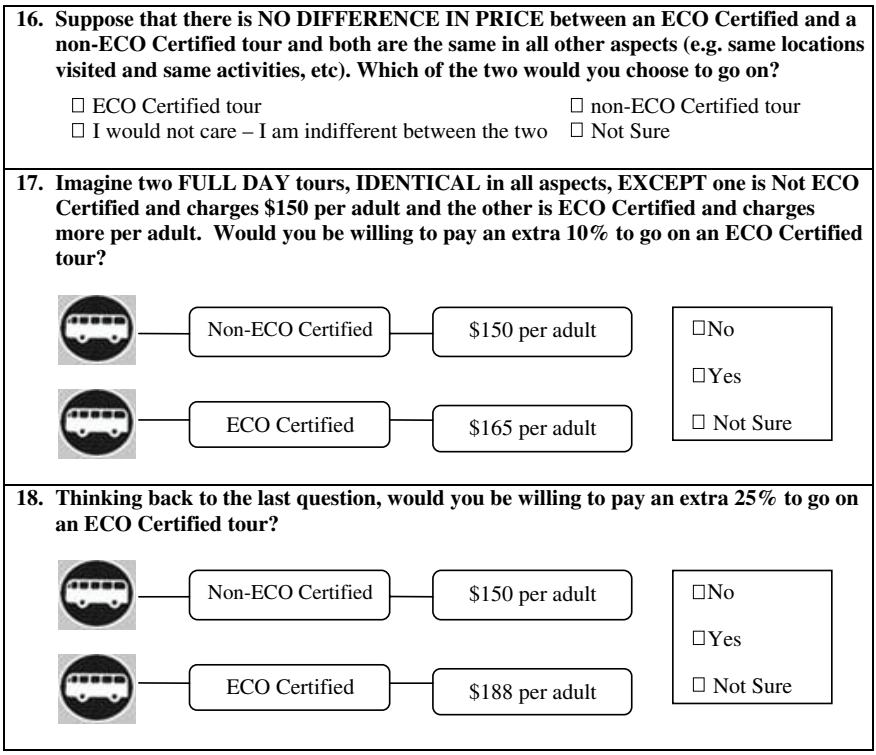

Fig. 36.2. Excerpt of version 1 of the tour survey.

pay options were varied from 10% to 50% of the average price for similar accommodations/attractions/tours. Because of the dichotomous approach adopted, and because of the need to keep surveys simple, two versions of each type of survey (i.e., specifically developed for accommodations, tours and attractions) were developed: version 1 comprised price increments of 10% and 25% while version 2 comprised price increments of 30% and 50% as shown in Fig. 36.2. These premium increments were in line with previous, related research (Aguilar and Vlosky, 2007; Gil *et al.*, 2000; Vlosky *et al.*,

and cognitively manageable. Furthermore, respondents face a familiar task, similar to real referenda. However, this format has received some criticism for the inconvenience of providing the researcher with only limited information. To mitigate this, some researchers, for example Hanemann *et al.* (1991) proposed adding a follow-up question. This is the double-bounded model. However, it is subject to starting point bias, that is, respondents anchor their willingness-to-pay (WTP) to the bids, implying that WTP estimates may vary as a function of the bids (Flachaire and Hollard, 2007).

1999; Thompson *et al.*, 2010; Xia and Zeng, 2006). To minimise response bias due to misunderstanding of the region, and of the notion of certification, the first set of survey questions asked about visitor's trip to the WTQWHA,[6] and a definition of certification was provided in each survey.

36.2.2.3. *Data collection methods*

Following a pilot study, it was decided to elicit the help of tourism operators when distributing the questionnaire. A database of tourism operators in the WTQWHA and surrounds was compiled and sorted according to type of operation and ECO Certification status. Operators were contacted with an initial email, which described the study and requested their help in distributing the surveys to their clients.

As depicted in Fig. 36.3, both versions of the survey were fairly distributed across all three business sectors.

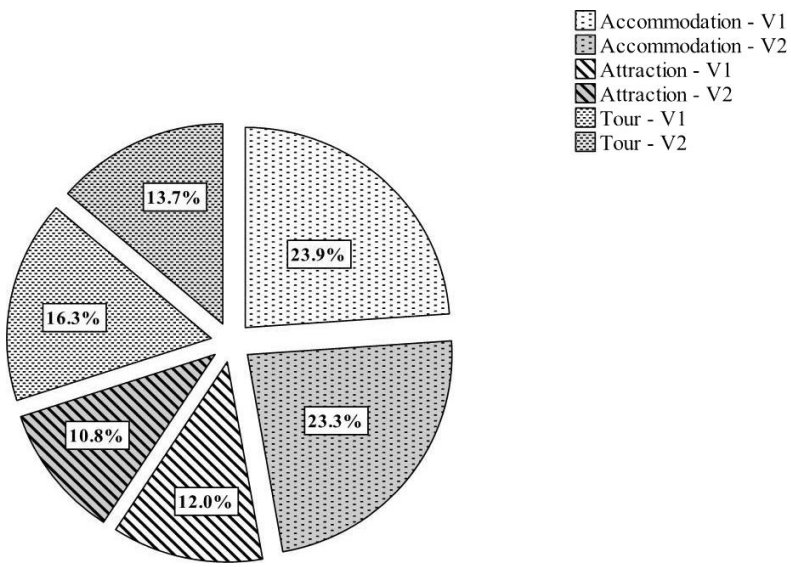

Fig. 36.3. Proportion of the two versions of the questionnaire received across sectors.

[6]Questions included length of time spent visiting the WTQWHA, awareness of its WHA status and whether or not it influenced their decision to visit the area. Frequency of visitation was also solicited.

36.2.2.4. *Willingness to pay for ECO Certification*

With no difference in price, ECO certified operations were the more popular choice (92.1%, 68.5% and 90.2% for accommodations, attractions and tours respectively). Few respondents preferred the non-ECO certified counterpart (1.3% at accommodations, and 1.1% on tours). However, some respondents did not seem to care if a business was certified or not, with 6.6% (accommodations), 31.5% (attractions) and 8.7% (tours).

Nevertheless, the preference for certification is clearly responsive to price.

For the majority of our survey respondents (60–70%), a 10% increase in price was accepted (Table 36.1). However, as the price differential increased the proportion of respondents expressing a WTP a premium for ECO Certification declined. Respondents overwhelmingly declared their unwillingness to pay the 50% premium for ECO certified products.

As expected, our results also show clear evidence of starting point bias (Flachaire and Hollard, 2005, 2007; Whitehead *et al.*, 1995; Collier and Mahooney, 1996). In all cases, the proportion of visitors expressing a positive WTP the 30% premium (in version 2 of the questionnaire, where 30% was the lowest premium presented) exceeded the proportion of visitors expressing a positive WTP the 25% premium (in version 1 of the questionnaire, where 25% was the highest premium presented). As such, one cannot (indeed should not) use these raw estimates to draw definitive conclusions about the absolute levels of WTP for ECO Certification.

Still, irrespective of whether or not starting point bias exists, it is possible to use these results to draw *inferences* about the likely impact on operator

Table 36.1. Proportion of respondents *unwilling* to pay a 10%, 25%, 30% or 50% premium for ECO certified products in the three different industry segments.

Willingness to pay a premium			Accommodations base price = $130 room/night	Attractions base price = $41 per adult	Tours base price = $150 per adult
V1	10%	No	23% ($n = 65$)	42% ($n = 31$)	28% ($n = 46$)
	25%	No	77% ($n = 56$)	86% ($n = 28$)	72% ($n = 43$)
V2	30%	No	54% ($n = 56$)	67% ($n = 30$)	41% ($n = 34$)
	50%	No	91% ($n = 65$)	96% ($n = 28$)	85% ($n = 40$)

revenues of price premiums for ECO Certification. Clearly, there are at least some customers who are willing to pay a premium for ECO Certification, and on the surface, this seems like good news for tourism operators. But on closer examination, it becomes apparent that in each and every case, the proportion of respondents unwilling to pay an increased price exceeds the proportional increase in price. For instance, an increase in price by 10% is likely to result in a reduction of visitors by 23% at accommodations. Since the percentage reduction in quantity exceeds the percentage increase in price, the resultant impact on revenues must be negative.

The implication here is that unless businesses are able to either:

(a) cut costs, for example by using less energy and water as part of running an ECO Certified business;

and/or

(b) attract new customers,

then signing up for ECO Certification and charging a price premium to cover any associated transaction costs does not make financial sense, since the (%) loss of existing customers exceeds any prospective gains from higher prices.

However, as emphasised in (b), businesses may counteract this situation if they are able to attract new customers who are both dedicated to sustainability in travel and tourism and who are also willing to pay more. The next section attempts to identify such types of customers.

36.3. Which Types of Visitors are Willing to Pay Most for ECO Certification?

Research identifying the profiles of consumers who are willing to pay more for sustainability or green products is abundant. These studies are important for marketers as identification of those characteristics enables marketers to develop marketing strategies specifically targeted at those customers. For the most part, these studies find that females are more likely to be willing to pay more for environmentally friendly products than males due to their stronger environmental attitudes and behaviour (e.g., Klineberg *et al.*, 1998; Davidson and Freudenburg, 1996; Diamantopoulos *et al.*, 2003; Schubert *et al.*, 2010; Vaske *et al.*, 2001). Other demographic characteristics that have been identified as determinants of WTP include income, education, and age.

As to WTP a premium for certified products specifically, most previous studies have looked at sectors other than tourism. Of the few studies

Table 36.2. Proportion of respondents *unwilling* to pay a 10%, 25%, 30% or 50% premium — according to age.

Willingness to pay a premium			Accommodations base price = $130 per room/night		Attractions base price = $41 per adult		Tours base price = $150 per adult	
			Below 50 yrs	Above 50 yrs	Below 50 yrs	Above 50 yrs	Below 50 yrs	Above 50 yrs
V1	10%	No	18% ($n = 34$)	29% ($n = 31$)	29% ($n = 17$)	57% ($n = 14$)	21% ($n = 19$)	33% ($n = 27$)
	25%	No	73% ($n = 30$)	81% ($n = 26$)	73% ($n = 15$)	100% ($n = 13$)	67% ($n = 21$)	77% ($n = 22$)
V2	30%	No	60% ($n = 25$)	48% ($n = 31$)	63% ($n = 19$)	73% ($n = 11$)	29% ($n = 14$)	50% ($n = 20$)
	50%	No	89% ($n = 37$)	93% ($n = 28$)	100% ($n = 16$)	92% ($n = 12$)	83% ($n = 12$)	86% ($n = 28$)

Note: Shaded values indicates significance at the 0.05 level.

which have investigated WTP more for certified tourism products, none have considered the link between demographic characteristics and WTP, and have instead, presented the findings as a percentage of respondents who were likely to pay more for products that are certified (as was done in the previous section).

To address this gap in knowledge, responses to the above-mentioned questions about WTP were divided according to socio-demographic variables (also collected in the survey) and the Mann Whitney U test was used to test for the statistical significance of differences in responses. Only income and age were found to be statistically significant determinants of WTP. The relationship between the groupings so investigated and WTP are shown in Tables 36.2 and 36.3.

In relation to age, only one subset of the data (that relating to a 25% price premium for attractions) showed a statistically significant difference in the response of old and young tourists. But the findings are consistent with other studies (Forsyth *et al.*, 1999; Xia and Zeng, 2006) which found that younger[7] people were more likely to pay a premium. According to Krystallis

[7]The average age being 39 in the case of Forsyth *et al.*'s (1999) study, between 20–30 in the case of Xia and Zeng's (2006) study, and lower than 50 years old in the ECO Certification's study. In the case of the latter, age were categorised as a

Table 36.3. Proportion of respondents *unwilling* to pay a 10%, 25%, 30% or 50% premium — according to income.

			Accommodations base price = $130 per room/night		Attractions base price = $41 per adult		Tours base price = $150 per adult	
Willingness to pay a premium			Below $60,000	Above $60,000	Below $60,000	Above $60,000	Below $60,000	Above $60,000
V1	10%	No	43% ($n = 14$)	18% ($n = 51$)	64% ($n = 11$)	30% ($n = 20$)	7% ($n = 14$)	38% ($n = 32$)
	25%	No	100% ($n = 11$)	71% ($n = 45$)	100% ($n = 11$)	77% ($n = 17$)	64% ($n = 11$)	75% ($n = 32$)
V2	30%	No	79% ($n = 14$)	45% ($n = 42$)	63% ($n = 8$)	68% ($n = 22$)	40% ($n = 10$)	42% ($n = 24$)
	50%	No	89% ($n = 18$)	92% ($n = 47$)	100% ($n = 7$)	95% ($n = 21$)	93% ($n = 15$)	80% ($n = 25$)

Note: Shaded values indicates significance at the 0.05 level.

and Chryssohoidis (2005), this can be attributed to the fact that younger people tend to have greater environmental awareness.

As regards income, respondents with incomes of $60,000 and above were statistically more likely to be willing to pay premiums of 10%, 25% and even 30%[8] to stay at an ECO Certified accommodation. This is not surprising, as income is often noted as the principal factor in determining a purchase decision. Interestingly, the association between income and WTP was negative for small, 10% price premiums on tours — although this might be due to other confounding factors — e.g., a negative association between age and WTP, and also between age and income as might be expected for backpackers. This highlights the need for more sophisticated, multivariate (rather than simple bivariate) analysis to control for such interactions.

With the single exception of that one group of 'relatively poor' consumers of 'tours' (which begs further investigation), the percent of respondents who indicate an unwillingness to pay a price premium is always greater than the

bivariate variable with respondents below the age of 50 in one category and those above 50 in another.

[8]10% ($U = 267.00$, $z = -1.97$, $p < 0.05$), 25% ($U = 176.00$, $z = -2.02$, $p < 0.05$) and 30% ($U = 196.00$, $z = -2.15$, $p < 0.05$).

percent increase in price (e.g., 18% of 'rich' tourists say they would not be willing to pay a 10% premium for certified accommodation). This indicates that demand for the ECO certified tourism products considered in this study is elastic — even for high income tourists. Evidently, even when dealing with 'rich' or 'young' consumers, it seems that price increases are likely to lead to revenue decreases.

36.4. Knowledge and Perception as Influences on Consumers' Willingness to Pay for Certified Tourism Products

Some studies (e.g., Seraj, 2008) have found a link between heightened awareness and WTP for environmentally friendly commodities. In this context, the next section examines whether being informed about what certification entails makes a difference to WTP. Additionally, it discusses visitor perception of the contributions certification makes and its relationship with WTP.

36.4.1. *Level of knowledge*

Part of the claimed benefits of certification to operators is that marketing of their certified products will give them a competitive advantage. Unfortunately, as attested in the literature, such advantage does not necessarily follow, as visitor awareness of certification remains low. Moreover, simply being 'aware' of certification may not be enough: it is important to gauge how informed visitors are, and whether knowledge of certification translates into a WTP a premium for certified products.

With the exception of Schott's (2006) study, we are unaware of any other study about consumer knowledge of certification schemes. This particular study investigated visitor's level of knowledge of the *Green Globe 21* certification program, specifically knowledge about the characteristics and meaning of the scheme. Schott found that although three quarters of respondents had some knowledge, their level of knowledge was predominantly minimal.

In addition to asking questions about WTP, our study of the ECO Certification scheme also queried visitors about their knowledge of the types of things that operators must do to achieve ECO Certification. Results showed that while the proportion of those who considered themselves to be 'informed' was higher amongst those respondents who had purchased ECO certified products than those who had not, overall between 70–90% of respondents admitted to knowing very little about the requirements of ECO Certification (Fig. 36.4).

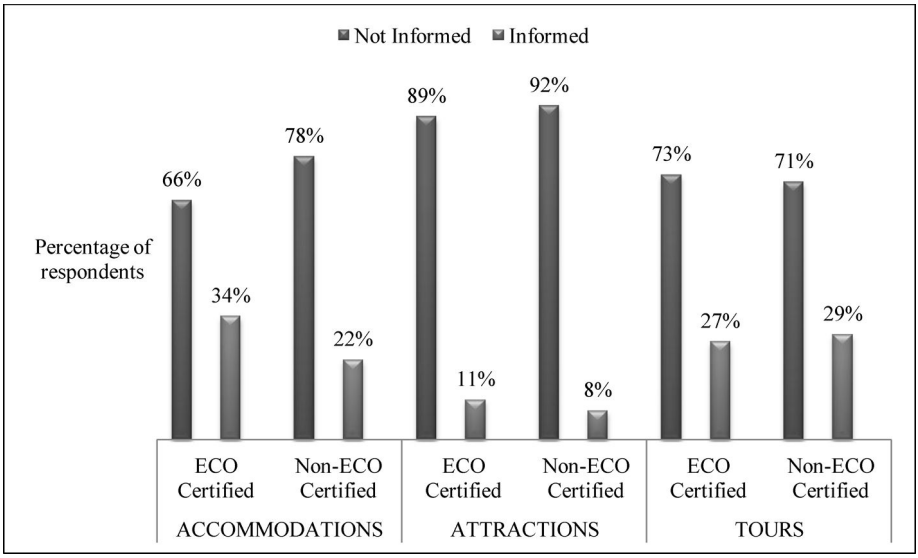

Fig. 36.4. Respondents' knowledge about the requirements of ECO Certification — sample segmented according to business's certification status.

Table 36.4. Knowledge and willingness to pay.

			Accommodations base price = $130 per room/night		Attractions base price = $41 per adult		Tours base price = $150 per adult	
Willingness to pay a premium			Not Informed	Informed	Not Informed	Informed	Not Informed	Informed
V1	10%	No	24% ($n = 41$)	17% ($n = 23$)	38% ($n = 29$)	100% ($n = 2$)	24% ($n = 34$)	42% ($n = 12$)
	25%	No	85% ($n = 33$)	62% ($n = 21$)	85% ($n = 27$)	100% ($n = 1$)	77% ($n = 30$)	62% ($n = 13$)
V2	30%	No	59% ($n = 46$)	30% ($n = 10$)	69% ($n = 26$)	50% ($n = 4$)	50% ($n = 24$)	20% ($n = 10$)
	50%	No	91% ($n = 54$)	91% ($n = 11$)	100% ($n = 24$)	75% ($n = 4$)	96% ($n = 27$)	58% ($n = 12$)

Note: Shaded values indicates significance at the 0.05 level.

Table 36.4 summarises the percentage of respondents who were willing to pay a premium for certification based on whether they were informed or not for each of the increments. As was observed in Table 36.1, there

is evidence of starting point bias but we can confidently note that being informed does not necessarily mean that visitors would pay a premium. In fact, a higher proportion of those respondents who were not informed about what operators do to achieve ECO Certification were willing to pay a 10% premium, than those who did at attractions and on tours. However, statistically, the difference in WTP between the two groups (i.e., 'informed' versus 'not informed') is only significant at the 50% premium for both attractions and on tours.

36.4.2. *Perception of the contribution of certification to sustainability*

While there are studies which found that visitors who understand the perceived benefits of certification would support their further development (Fairweather *et al.*, 2005; Chafe, 2007), it must be noted that most of this understanding and support focuses on the environmental aspects only. This is perhaps not surprising, considering that most certification schemes cover criteria aimed at reducing the environmental impacts only of tourism activities. In the context of sustainability, social and economic aspects of certification schemes are also important. Currently, there is a lack of understanding on visitors' perception on these aspects. The ECO Certification program is one of two schemes known for inclusion of all three aspects.

Therefore, this study sought to examine visitors' perception of the difference in contribution to sustainability between ECO certified and non-ECO certified businesses. To gauge respondent's perceptions we presented them with the following question (Fig. 36.5).

15. In your opinion are ECO Certified tours doing more (than non ECO Certified tours) to help improve or protect:

	Much more	More	About the same	Less	Much less	Not sure
a) The ENVIRONMENT?	□	□	□	□	□	□
b) The LOCAL COMMUNITY?	□	□	□	□	□	□
c) The OPERATORS financial performance?	□	□	□	□	□	□
d) Your PRODUCT EXPERIENCE?	□	□	□	□	□	□

Fig. 36.5. Question about the contribution of ECO Certification — excerpt of the tour survey.

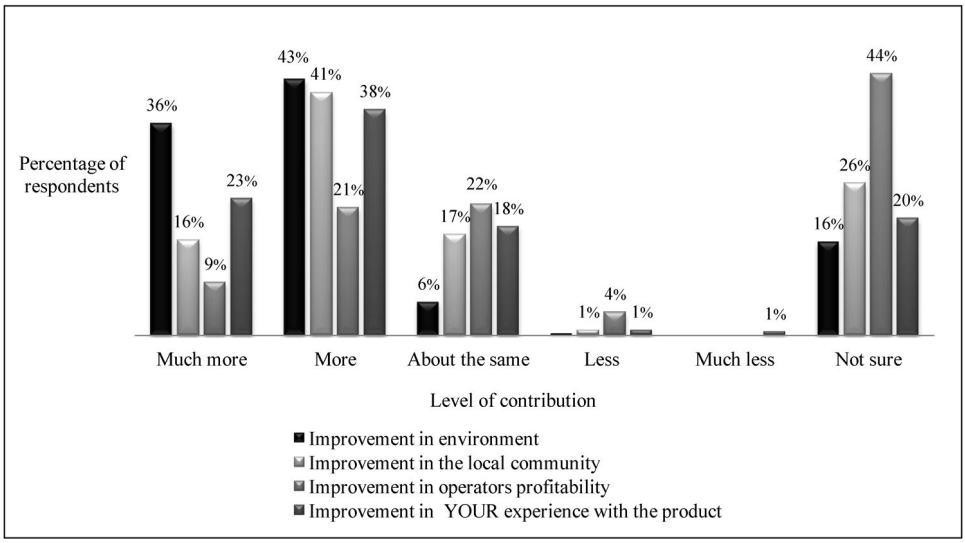

Fig. 36.6. Perceived contribution of ECO Certification on sustainability and experience with the product.

Visitors generally perceived ECO certified firms to be contributing 'much more' or 'more' than non-ECO certified firms to improving the environment, the local community and their product (accommodation, attraction or tour) experience (Fig. 36.6). The generalised perception that ECO certified firms contributes more towards sustainability and the consumer experience is highly significant. When consumers have confidence that their product choice will make a significant contribution to desired collective outcomes they are more likely to show preference for those products and are more likely to pay a premium (Thompson *et al.*, 2010). Indeed, this was evident when perception of contribution was correlated with WTP measures (Table 36.5). A similar conclusion was drawn by Aguilar and Vlosky (2007) who found potential premiums by those who believed certification can help reduce deforestation in the tropics.

36.5. Implications and Further Research

Despite claims that certification will give firms a competitive edge by attracting consumers who are willing to pay a premium for certified products, to date, there has been no evidence supporting these claims. This chapter set out to explore the potential revenue implications of certification — specifically looking at consumers' WTP for ECO certified tourism products. Based on the findings several important implications can be drawn:

Table 36.5. Correlation between respondents' perceived contribution of ECO Certification with their willingness to pay (WTP).

Aspects of sustainability and product	Accommodations				Attractions				Tours			
	WTP 10%	WTP 25%	WTP 30%	WTP 50%	WTP 10%	WTP 25%	WTP 30%	WTP 50%	WTP 10%	WTP 25%	WTP 30%	WTP 50%
Environment	** $r = 0.33$	* $r = 0.27$			** $r = 0.53$		* $r = 0.35$		** $r = 0.50$	* $r = 0.32$	* $r = 0.39$	** $r = 0.47$
Local community			* $r = 0.31$						** $r = 0.42$	** $r = 0.44$	** $r = 0.65$	** $r = 0.48$
Operators' financial performance			** $r = 0.46$	** $r = 0.45$						** $r = 0.52$	** $r = 0.51$	
Experience with the product	** $r = 0.43$	** $r = 0.40$	** $r = 0.47$	** $r = 0.33$			* $r = 0.34$		** $r = 0.39$	** $r = 0.47$	* $r = 0.37$	

Note: Single and double asterisks denote significant correlation at the 0.05 and 0.01 levels respectively.

Firstly, it was found that visitors are willing to pay more for ECO certified products. This is consistent with other studies and, on the whole, should be positive news for operators. However, this study demonstrated that increases in prices will result in a loss of customers, hence, the option to increase prices may ultimately reduce revenues, thus lowering profits, if not associated with a simultaneous reduction in costs. This highlights a vitally important question for further research: does certification lower operator costs? And if it does, how the increase in price for ECO certified products can be justified?

In the medium run, it is quite possible that profits may increase (even if costs do not fall) if customers of previously non-ECO certified products switch to the more environmentally and socially friendly option. We note nonetheless, that this reallocation of customers, if it eventuates, will take time and some of the smaller businesses might lack the resilience to cope, requiring some form of external assistance in the interim. Moreover, in the long run, economic theory predicts that any excess profits accruing to those businesses will eventually dissipate — returning all to the expected (zero) economic profits.

That point aside, there is concern over whether an expressed WTP really translates into actual payments. It is argued that an individual's stated WTP may well be just intentions and not necessarily followed by actual behaviour (Chao and Lam, 2011; Fairweather *et al.*, 2005; Vermeer *et al.*, 2010). In certain instances, these answers may be subject to social desirability bias, with respondents feeling the pressure to appear socially and environmentally responsible, while in reality they are rather focused on comfort, quality and price of the product (Chao and Lam, 2011; Jarvis *et al.*, 2010). According to Weeden (2008), consumer intentions are simply poor indicators of actual performance. Importantly, if those who participated in our study of WTP for ECO Certification in the WTQWHA were inclined to give socially desirable responses, then our empirical research may overstate the potential positive revenue effects of the scheme. In other words, if social desirability bias is a true issue for this study, then operators who choose to charge a premium for certification may see an even more significant fall in revenues than is suggested here.

Fortunately, there are other avenues that can be pursued, which may still enable the firm to raise its revenues. For example, the marketing of certification products that target the financially well-off and the young visitors could be worthwhile, seeing that these two groups of visitors are statistically more likely to express a WTP for certified products than others — although there are clearly many complex interactions across such variables, highlighting the need for more sophisticated (e.g., multivariate) analysis of the link between

such demographic variables and WTP. We also note that other studies argue that the impact of demographic characteristics in general, have little impact on consumer's behaviour and their WTP (Heidt and Firmin, 2009; Laroche *et al.*, 2001). Therefore, to better understand the true extent of consumer behaviour with certification, it is perhaps best to also examine their values and/or attitudes.

In addition, some studies suggest that the more informed a customer is, then the more likely he/she will be willing to pay a premium. Our research suggests that being informed about certification *per se* is actually not effective in determining WTP. Rather, it is consumer perceptions about the *effectiveness of certification* that is most significant. Customers who think that certification makes a positive difference to the environment and the local community, are statistically more likely to be willing to pay a premium for certified products than those who do not. As might have been expected *a priori*, it is not the general awareness of schemes, but rather their credibility that matters to consumers. Further research on this issue, and on the link between visitors' perceived importance of specific attributes of sustainability and WTP for certification could also help those who seek to design certification schemes to identify and prioritise attributes of sustainability that are important to consumers.

In conclusion, this chapter focused on the financial aspects of certification only. However, we note the importance of and need for more information on the biophysical and social aspects of certification. Information on all three features will provide a better indication of whether certification schemes are really effective in promoting sustainability. If irrefutable evidence shows that certification benefits the operator, the environment and the community, then the message that certification leads to better outcomes may sell more easily. If certification is found to be unprofitable to businesses, but good for the environment and community, then there may be a *prima facie* case for subsidised certification schemes especially in environmentally sensitive areas. If on the other hand, certification is found to be good for businesses but bad for the environment or community, then perhaps, more emphasis will need to be put on other initiatives. In fact, this view is shared by many who think that certification would be most effective as a 'policy bundle or pyramid' when coupled with environmental regulations (Dreike, 2007; Buckley, 2001). The same can be said if certification is found to be neither profitable to businesses nor good for the environment and community.

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Chapter 37

THE ECONOMIC VALUE OF NATIONAL PARKS AND PROTECTED AREAS AS TOURISM ATTRACTIONS

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Abstract: This chapter considers national parks and other protected areas as tourism attractions, with examples from Australia. The focus in this chapter is on measures of economic value and impact based on expenditure by tourists. National parks are important tourist attractions in Australia — a recent national level study found that over one-fifth of all tourism expenditure was incurred by people who visited national parks as part of their trip. This chapter places the expenditure approach into the context of economic valuation methods and discusses the most appropriate ways to separate out the attraction effect of the national park from all tourism expenditure. A number of case studies conducted in Australia at regional and state levels are included to illustrate methodology and results. Managers of national parks and protected areas, government funding agencies, the tourist industry and regional communities are all interested in gaining an appreciation of the economic value of these areas in order to inform decisions on appropriate funding for management and presenting and promoting these areas for sustainable tourism.

Keywords: Australia; economic value; national parks; protected areas; tourists' expenditure.

37.1. Introduction

Protected areas and other natural environment areas are significant tourism attractions. Images of beautiful and interesting wildlife and natural areas feature in tourism advertising that aims to bring people to countries, regions and specific destinations. Increasingly, protected area managers, governments which fund protected area management, the tourism sector and regional communities are seeking information on the economic value of tourism to the protected areas, in order to inform decisions on promotion, management and funding.

How do we place an economic value on tourism to a protected area? The economic value of these areas is not directly revealed in a market. For many protected areas there are no visitor entry fees, or they are administratively set at a low level and do not in themselves reflect the real value of the protected area to the visitors. In addition, often there is little or no accommodation or other services within a protected area, so a major part of tourists' expenditure associated with visiting the protected area occurs in the adjacent region, not in the protected area itself.

Protected areas which are also tourism resources have been said to have the characteristics of public goods (non-excludable, non-rival) (Rigall-I-Torrent, 2008), but it is perhaps more correct to classify them as common pool resources (difficult to exclude users, but use can become rival) (Ostrom, 2002). In both cases, it is difficult to reflect value through the market mechanism and therefore management for environmental and economic sustainability of the resource requires intervention, usually in the form of government management agencies.

Economists have developed approaches to estimating the economic value of tourism to protected areas and their adjacent regions for several reasons. One reason is to assist understanding of the economic value of nature conservation in protected areas. It is well accepted that protected areas provide for a range of market and non-market goods and services, and that direct use through tourism is only one component of the broader total economic value (TEV) of natural environments (Pearce and Moran, 1994). However, it is often easier to make an estimate of tourism value than other values such as ecosystem services or option, bequest and existence values. In this case the tourism value can provide a minimum bound estimate of the TEV.

Another reason for seeking an economic value of tourism to protected areas is in order to inform decisions on applying funding to management of tourism and nature conservation in these areas. Historically, the main interest in this kind of information in Australia has come from government agencies with the responsibility of designing, implementing and funding protected area management (Driml, 2010). Often, these agencies must make submissions to central treasury departments for funding. The availability of economic value information is seen as useful for this purpose.

A further reason is interest by tourism promotion agencies, the tourism industry and regional communities in understanding the place of protected areas in their region's tourism attractions and broader economy. This is often illustrated by considering the counterfactual notion of the economic value of tourism that would be lost from the region if the protected area was not there, or not accessible.

This chapter first provides the context for understanding the expenditure based approach to estimation of economic values of protected areas. Methodologies applied to, and results derived from, estimating the economic values of protected areas are then illustrated via case studies of recent studies in Australia. The final section of this chapter reflects on the future challenges for management of protected areas and how economic valuation can assist.

37.2. Approaches to Economic Valuation

There are two main approaches to placing an economic value on tourism to protected areas. One is to estimate the consumer surplus accruing to the population of tourists who visit the protected area (Bennett, 1995). This is a net welfare measure which arises where the willingness of tourists to pay to be in a protected area is higher than the amount actually paid. It theoretically captures not only direct use value but also other non-use benefits experienced by the tourists. This approach was used in the first studies to estimate economic values for recreation in natural areas (Krutilla and Fisher, 1975). The typical characteristics of the recreation use were that the visitors provided their own transport; camping and recreation equipment; food and other supplies brought from home, and may have faced low or no entry fees to the protected area. The visitors were obviously making a considerable effort in terms of time and expenditure of their household budget to get to an area but generally spent only a small proportion of total cost of the trip in the area of the natural environment they were visiting, so there was no evident market for the protected area *per se*.

Methodologies for estimating the consumer surplus include the revealed preference method of travel cost analysis (Bockstael, 1995) and the stated preference methods of contingent valuation (Carson, 2000) and choice modelling (Bennett, 1999). The consumer surplus measure is the appropriate measure to use in cost benefit analysis of proposals, for example to establish new parks (Keske and Loomis, 2008).

The other main approach is to estimate the economic impact in a region of expenditure by tourists attracted by protected areas located in that region. This approach is able to be applied where visitors to a protected area are likely to spend money in the region adjacent to a protected area, and in the protected area itself, on a mix of goods (food, fuel etc. bought from retail outlets) and commercial services (accommodation, tours etc.) and any entry fees. This information is generally collected by survey of a sample of visitors.

It is important to connect the expenditure by visitors to a region to the attraction of the protected area. A broad approach is to include expenditure by all visitors to the region who visit the protected area while in the region. This is certainly a legitimate measure of actual expenditure associated with visits to the protected area, and is a common basis on which to report direct spending in a region associated with protected area attractions (Centre for Agricultural and Regional Economics, 2006a, 2006b, 2006c).

This measure has been termed the 'attribution factor' (Carlsen and Wood, 2004), the 'traditional spending' (Lindberg and Destanii, 2004) and 'National Park-associated spending' (Ballantyne *et al.*, 2008; Driml *et al.*, 2011) in recent Australian studies. The three different terms reflect somewhat different approaches by the authors.[1]

However, some visitors may visit a protected area while in a region even though this is not their primary or only reason for being there. This possibility has led some researchers to try to drill down to isolate that group of visitors who came to the region because of the protected area. This is generally addressed by asking respondents whether they would have visited the region if the protected area was not there or not accessible. Only the expenditure by visitors who would not have visited the region in the absence of the protected area is then measured as the attraction of the protected area. This subset of expenditure has been termed 'substitution factor' (Johnson and Moore, 1993; Carlsen and Wood, 2004) 'conservative spending' (Lindberg and Destanii, 2004) and 'National Park-generated spending' (Ballantyne *et al.*, 2008; Driml *et al.*, 2011). Lindberg and Destanii (2004) also asked if the visitors stayed in the region longer in order to visit the protected area, and the proportion of expenditure for the longer stay is included in their 'conservative spending' measure.

It is interesting to note that in recent Australian studies, the more narrowly defined measures of 'substitution' and 'national park-generated spending' are less than 20% of the equivalent broader measures on a regional basis (Driml, 2010). Where Lindberg and Destanii (2004) included length of stay, their 'conservative spending' ranged between 34% and 76% of 'traditional

[1]Carlsen and Wood (2004) interviewed a sample of all tourists to a region and used measures of motivation and activities to select those in the 'attribution category'. Lindberg and Destanii (2004) interviewed only tourists who had visited a national park for inclusion in 'traditional spending' and included length of stay in the 'conservative spending'. Ballantyne *et al.* (2008) included only tourists who had visited a national park to calculate the 'national park-associated spending' and 'national park-generated spending'.

spending' over four regions. Thus, it can be seen that narrowing down the definition of what spending to include as due to the attractions of protected areas can have a significant effect on the estimated spending by tourists. It is also indicated that more work is warranted on refining methodology to get a more standard approach and exploring whether to incorporate length of stay.

Thus far in discussion of economic impact, only direct spending has been discussed. Once a direct spending estimate has been calculated, there is an option to put this in context of the broader economy of the region using economic models available based on Input–Output Analysis or Computable General Equilibrium (CGE) Modelling. As 'tourism' is not usually a standard economic sector in such models, the augmentation of Input–Output or CGE models is generally needed before these models can be used for economic impact analysis of tourism expenditure. For many years, regional Input–Output models have been adapted to model tourism expenditure impacts (New South Wales National Parks and Wildlife Service, 1998). In Australia, Tourism Satellite Accounts have been prepared for Input-Output tables at the State level (Pambudi *et al.*, 2009) and there are also now regional CGE models with a tourism sector for some regions (Pham *et al.,* 2010).

Using such models, the contribution of direct tourism expenditure to Gross Regional/State/National Product may be estimated. Another economic impact measure of interest, direct employment supported by the direct expenditure, may also be estimated. It has also been common to estimate the indirect or flow on effects in terms of output, GDP and employment supported in other sectors of the regional economy in studies of tourism expenditure (Centre for Agricultural and Regional Economics, 2006a, 2006b, 2006c; Gillespie Economics and BDA Group, 2008).

37.3. Australian Case Studies

37.3.1. *Australia: Expenditure by tourists who visited national or state parks in Australia*

The first case study described here is included to give some context to the results of other studies, rather than to illustrate methodology. It provides national level estimates of expenditure associated with tourism visits to national and state parks in Australia. Tourism Research Australia (TRA) regularly publishes estimates of expenditure by domestic and international tourists in Australia as a whole and in states and regions of Australia. Information is collected from tourists via the National Visitor Survey and the

International Visitor Survey, in which tourists are asked about their travel behaviour (including regions, destinations and attraction visited) and their expenditure. Expenditure estimates are made using a methodology which is described by TRA (Tourism Research Australia, 2008a, 2008b).

In 2008, TRA published average and total expenditure estimates for visitors who had visited a national or state park sometime during their trip (Tourism Research Australia, 2008c).

Domestic day trip visitors who visited a national or state park accounted for 3% of all day trip spending and spent $511 million in a year. Domestic overnight visitors who visited a national or state park accounted for 15% of all domestic overnight spending. At an average of $146 per night, these visitors spent $6.6 billion in total. A high proportion of international visitors (44%) included a visit to a national or state park and at $92 per night, spent $8.3 billion. In total, expenditure by tourists who visited a national or state park as part of their trip totalled $15.4 billion, which was 21% of the $73.6 billion spent by tourists in Australia in 2007 (Tourism Research Australia, 2008a, 2008b). This figure of over one-fifth of all expenditure by tourists in Australia, by tourists who actually visited a national or state park, illustrates that protected areas are indeed a significant component of tourism attractions in this country.

37.3.2. *Australian world heritage areas*

A study commissioned by the Australian Government provided estimates of the economic activity associated with 15 of the 17 Australian World Heritage Areas[2] (Gillespie Economics and BDA Group, 2008).

This study was undertaken using both primary and secondary data supplied for each World Heritage Area by management agencies. The study modelled the impact of government expenditure on management and expenditure by visitors. Government agencies are often interested in understanding the economic impact of what they spend on protected area management, including the number of direct and indirect jobs supported, especially in remote regions. The authors found that just 5% of impacts were from management expenditure.

The authors used a broad estimate of tourist spending, which they defined as 'money spent by visitors to protected areas during their trip to the region'. Unfortunately, little information is provided on the method of

[2]The Great Barrier Reef and the Heard Island and McDonald Island World Heritage Areas are not included.

compiling the visitor expenditure, except that it was based on estimates of visitor numbers from park management agencies and expenditure from the TRA.

The report does provide a description of how regional Input-Output tables were constructed for the purpose of this study from state/territory level tables, to best represent the regions in which the WHAs are located. Expenditure on park management and by visitors were separated out in the tables and adjusted for imports. The models were then run to generate results for park management and visitor expenditure.

For each of the 15 World Heritage Areas, estimates are reported for management and for visitors of: direct output (expenditure), value added, income and employment and also total direct and indirect effects of each of these indicators. In addition, the effects are reported at the regional, state and national levels. While there is far too much data to comment in detail, a few interesting results are noted here.

The addition of the national level contributions from all 15 WHAs gives a national level contribution of:

- $16.1 billion in annual direct and indirect national output;
- $7.2 billion in annual direct and indirect national value added;
- 83,349 direct and indirect national jobs.

Large differences in size and proportions of economic activity can be seen across sites. Results are shown for the Wet Tropics World Heritage Area Queensland, which has the largest visitor expenditure for a non-urban WHA and for the Naracoorte South Australia site of the Australian Fossil Management Site with the lowest visitor expenditure (see Table 37.1). It is interesting to note that management expenditure in Naracoorte comprised $600,000 of the direct output and directly supported 14 jobs, which however is a significant contribution when visitor numbers are low.

Table 37.1. Two World Heritage Areas, direct plus indirect state/territory level impacts based on impact of visitor spending, 2006–2007.

	Direct plus indirect output $million	Direct plus indirect value-added $million	Direct plus indirect employment jobs
Wet Tropics Qld	3,036.0	1,354.0	17,654
Naracoorte AFMS	4.6	1.9	29

Source: Gillespie Economics and BDA Group (2008).

37.3.3. *New South Wales regional studies*

A series of studies have been conducted over a number of years to provide a picture of the significance of national parks and other protected areas to regional economies in the state of New South Wales. These studies have been undertaken for the state government and have provided information relevant to decision making on national park management in that state. The general approach has been to provide estimates for a region of direct and flow-on impacts of both government expenditure on national park management and visitor expenditure, in terms of regional value added activity, household income and employment.

The earliest studies focussed on the regional economic impacts of single national parks, while in 2009, the NSW government released a set of five studies that covered wider regions with many protected areas within them (Department of Environment, Climate Change and Water, 2009). The basis for estimates of visitor expenditure was visitor surveys undertaken in a sample of national parks, scaled up using records and estimates of visitor numbers to the parks. This provides a broad estimate of visitor spending, being expenditure by all visitors to the region who visit the protected area while in the region. Regional Input-Output tables have been augmented with this data on expenditure on park management and by visitors, taking account of 'leakages' of spending from regional economies. The 'regional value added activity' value is the direct plus indirect value added component of direct expenditure. 'Household income' is the direct plus indirect wages and salaries earned in the region.

Results for the five regions are shown in Table 37.2. It is noteworthy that in the more remote regions, the economic impact of expenditure on park management is close to that of visitor expenditure, while in the regions closer to the coast and population centres, visitor expenditure impacts are much greater. Regional value added (direct plus indirect) from tourism to protected areas ranges from millions of dollars in the remote regions to hundreds of millions of dollars in the coastal regions. Direct plus indirect employment supported by tourism to protected areas rises from hundreds of jobs in the remote regions to thousands of jobs in the coastal regions.

37.3.4. *Statewide value of national parks in Queensland*

A study undertaken for the government of the state of Queensland estimated the economic value (to the state)from all the national parks in that state (Ballantyne *et al.*, 2008; Driml, 2010; Driml *et al.*, 2011). This study

Table 37.2. Regional economic impact of expenditure on park management and by national park visitors, New South Wales.

	North East NSW	Far South coast NSW	Western pastoral region	Wheat-sheep belt	Greater Shoalhaven
Park management					
Direct expenditure		$7.6 m	$5.8 m	$8.4 m	$13.5 m
Total* regional value added	$17.0 m	$8.0 m	$6.3 m	$7.5 m	$13.0 m
Total* household income	$13.0 m	$4.8 m	$4.0 m	$5.3 m	$8.0 m
Total* employment,	265 jobs	108 jobs	101 jobs	138 jobs	208 jobs
Visitor expenditure					
Direct expenditure in the region	$111.0 m	$78.0 m	$8.7 m	$11.7 m	$207.0 m
Total* regional value added	$107.0 m	$54.0 m	$6.1 m	$8.8 m	$152.9 m
Total* household income	$59.0 m	$19.5 m	$2.6 m	$4.1 m	$67.8 m
Total* employment	1,650 jobs	813 jobs	102 jobs	157 jobs	3,219 jobs

*direct plus indirect.
Source: Department of Environment, Climate Change and Water (2009).

was aimed at providing information on a statewide scale in order to inform decision making on the state government's budget for national park management. This aim was met by estimating the contribution to gross state product (GSP) of tourism specifically generated by the presence of the state's national parks.

A novel approach in this study was to use the 13 'tourism regions' in the state as a basis to scale up to state-level estimates. This approach was able to be taken because data was available on the number of tourists, visit days in each region and the origin of tourists (domestic, international). Estimates could be made of the total number of visitor nights spent in the region by tourists who visited national parks and this became the population data used to scale up data collected from samples of tourists.

The regions were classified as either 'iconic', 'urban', 'remote' or 'outback' in terms of the types of attractions and patterns of use of the national parks in the region. One region in each classification was selected and surveys were conducted of national park visitors in the region.

Survey respondents were asked about their expenditure and whether they would have visited the region if the national parks did not exist. The mean per visitor day spending by respondents in each of the regions where surveys were conducted was estimated and this value was then allocated to each of the regions in the same classification. The population data for each region was used to scale the means up to total spending in each region and this was in turn added up to a state total.

The study generated two estimates of visitor spending in each region. 'National park-associated' spending is all spending by tourists to a region who visited a national park while in the region. A subset of that is the 'national park-generated' spending, which is spending by those tourists who would not have visited the region, or locals who would have gone elsewhere, if they could not visit the National Parks in the region.

Sensitivity analysis was carried out using a Monte Carlo type approach. The estimates selected for reporting were a national park-associated spending of $4.43 billion per annum and national park-generated spending of $749 million per annum. To place this into context, all tourism spending in Queensland was $15.9 billion in 2007 (Tourism Research Australia, 2008a, 2008b) and therefore the national park-associated spending was 28% of all tourism spending in Queensland the national park-generated spending was 4.7% of this total.

A further novel approach of this study was to interpret the spending in terms of contribution to GSP and compare this with the government's budget for tourism management in national parks. This step reflected a stated preference by officials of this government to use information on contribution to GSP in decision making. The proportion of national park tourism expenditure that is a contribution to GSP was estimated based on a Queensland tourism satellite account (TSA) that indicates that 46% of all tourism expenditure is contribution to GSP (Office of Economic and Statistical Research, 2006). A conservative approach was taken using the national park-generated spending, estimating a $345 million per annum contribution to GSP (direct only). This was compared with annual expenditure on tourism management in national parks of approximately $67 million per annum (McNamara, 2008) and found to be five times that amount. The TSA account was also used to estimate that national park-generated spending supports 4,413 full time equivalent jobs (direct only) in tourism in the state.

Further information on the methodology and suggested improvements are included in Driml (2010) and Driml and McLennan (2010).

37.4. Discussion

The careful management of protected areas will be necessary in order to sustain their integrity under the face of pressures from tourism and other activity in adjacent regions as well as broader threats such as pests and climate change. Tourism, as a direct use of protected areas, is potentially both an economic justification for conservation and a threat to conservation if not well managed. In many areas of the world, better understanding of the economic value of natural environments managed for tourism will be important in planning for land use patterns which will sustain communities in the long run. Thus, the need for good information on the economic value of tourism and the potential to manage protected areas to maintain or enhance that economic value is essential to informing the overall management challenge.

The brief history of placing economic values on tourism in protected areas in Australia illustrates a focus on the expenditure approach and providing economic impact measures (Driml, 2010). Much of the research has been commissioned by Australian state or national government agencies and thus the methodologies employed have reflected their preference for such measures. Some state government agencies have asked for 'narrow' measures of direct expenditure in terms of additions to the state or regional economies that are due to the attractions of the protected areas (would not occur if the opportunity to visit the protected areas were not available) (Carlsen and Wood, 2004). One State government agency expressed a preference for reporting additions to GSP (rather than all direct expenditure) (Driml *et al.,* 2011). Other government commissioned work provides the full range of direct and indirect economic impacts (Department of Environment, Climate Change and Water, 2009). It is worth noting that the consumer surplus approach has not featured highly in work commissioned by government. This may reflect that the economic impact measures are easier to understand and articulate by our current decision makers and managers.

As the case studies in this chapter illustrate, tourism expenditure that can be associated with visiting protected areas is an important component of tourism in many regions in Australia, and for Australia as a whole. This has policy and management significance from the national to regional to individual national park level. Protected areas are clearly a significant economic resource. Therefore, the balancing of visitor use and environmental protection in these special areas will continue to be a challenge. Economic information can assist in many ways.

The studies described in this chapter describe the status quo with regard to tourism expenditure associated with protected areas. The information

can be used to illustrate the relative significance of natural environment attractions. If used in the way described in the Queensland study, the expenditure by government on tourism management in protected areas may be put into perspective in terms the contribution to GSP of the tourism expenditure. This type of information may be used by agencies to argue for budgetary allocations to provide what they determine is adequate management for sustainable tourism and conservation in protected areas.

The status quo information may also be used to make rough predictions of tourism behaviour and expenditure in light of measures such as declaration of additional protected areas or changes to management regimes. Ideally however additional economic research would be employed to focus on predicting marginal changes in economic impacts that may arise from potential major policy or management actions. Such policy or management changes may include changes in areas open to tourists, investment in tourism infrastructure, and introduction of, or increases in, entry fees. The use of economic methodologies such as choice modelling may be useful in informing management decisions where different options are under consideration.

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Chapter 38

COMMUNAL MANAGEMENT OF ECOTOURISM BASED ON USE OF COMMON POOL RESOURCES: SELF IMPOSED RULES ON MINAMI-JIMA ISLAND, JAPAN

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Abstract: In Japan, several rules for community-based ecotourism management (CBEM) and the management of nature apply to the Ogasawara Islands. This chapter provides an institutional history of the CBEM system in Ogasawara and the process of developing self-imposed management (SIM) rules in order to overcome problems of common pool resources (CPRs). It focuses on SIM rules and their appropriate use on Minami-jima Island under the agreement of guidelines (AGs) between governments. Failure to comply with the SIM rules under AGs does not result in a legal penalty but the rules have gradually become more comprehensive and concrete under the Guidelines for the Protection and the Appropriate Use of Nature in the Islands of Tokyo (Governor's Decision Making) in July 2002. In other words, the SIM system relies on the leadership of a public authority (using the guidelines in the agreement) to address problems of CPRs. Institutional management of CBEM on Minami-jima Island has been successfully implemented by using the SIM rules under AGs for the coexistence of both nature conservation and local economy. After the registration of Ogasawara Islands as a World Heritage Site in June 2011, the SIM rules are going to face new challenges for CBEM due to greater environmental pressures expected as a result of an increasing number of visitors in the near future.

Keywords: Ogasawara Islands; Minami-jima Island; the agreement of guidelines (AGs); self-imposed management (SIM); community-based ecotourism management (CBEM); common pool resources (CPRs); World Heritage Site.

38.1. Japanese Ecotourism and Ogasawara Islands

Increasing support for ecotourism became an international trend in the 1990s. Ecotourism is promoted as a means of conserving the natural environment, providing high-quality sightseeing services while supporting sustainable economic development of local communities. (Honey, 2008; Fenell, 2008).

In recent years, ecotourism has also gained in popularity among the Japanese. According to Japan's Ministry of Environment (2004), Japanese ecotourism began with the foundation in 1987, of the Japan Environmental Education Forum, an NGO, involved in environmental education (Table 38.1). Private sector businesses started operating ecotours in the 1990s, and around the same time, two whale-watching associations

Table 38.1. The institutional history of Japanese ecotourism movement.

Year	Incident
1987	Foundation of Japan Environmental Education Forum
1989	Foundation of Ogasawara Whale-watching Association
1991	Release of 'the survey for propulsive direction of tourism and ecotourism use in Okinawa' by Ministry of Environment
	Foundation of Zamami Whale-watching Association
1992	Accession of Japan to the Convention concerning the protection of the World Cultural and Natural Heritage
	Ecotour operators in private sector commence business
1993	Registration of Shirakami Mountains and Yaku-shima Island as World Natural Heritage
1994	'Guideline for Ecotourism' is issued by The Nature Conservation Society of Japan (NACS-J)
1996	Foundation of Iriomote-jima Island Ecotourism Association
1998	Foundation of Ecotourism Driving Convention in Japan
	Foundation of Profession of Thinking Ecotourism in Hokkaido
1999	Foundation of Contact Congress for eco-guides in Yaku-shima Island
	Foundation of Higashi-mura village Ecotourism Association
	Release of the Ogasawara Country Code by Ministry of Environment
2000	Foundation of Council for Outdoor and Nature Experience
	Foundation of Urabandai Ecotourism study group
2002	Implementation of the qualification system of outdoor guides in Hokkaido
	Setup of 'The guideline for the protection and the appropriate use of nature on the islands of Tokyo (Governor's Decision Making)'
	Holding of international congress on ecotourism.

Source: Ministry of Environment (2004, pp. 163–165).

were founded (the oldest one in Ogasawara). The Japanese Ministry of Environment (MOE) has introduced over 400 ecotours on its website (Japan Ecotourism Society, 2011). Several prefectural governments joined this trend: in 2002, Tokyo Metropolitan Government established 'the Guidelines for the Protection and the Appropriate Use of Nature on the Islands of Tokyo [Governor's Decision Making] (GPAUNIT)'. Following UN's International Year of Ecotourism in 2002, the Japanese government started promotion of ecotourism as a national policy in 2003. Five years later, the Act for the Promotion of Ecotourism came into operation. Thus, the evolution of Japanese ecotourism is closely linked with contemporary global trends.

Unlike other types of nature tourism, ecotourism is defined by a set of principles, among which sustainability and ethical considerations rank high: 'environmentally sensitive, low-impact, culturally sensitive tourism that also helps educate visitors and local community members' (Honey, 2008, p. 14). The Japanese definitions of ecotourism however, do not perfectly fit the international ones and some of the defining criteria remain the subject of continuous debate and controversy. There seems to have three main criteria which are basically the same as global definition.

According to the first criterion, ecotourism is nature-based, involving travel to natural, mostly unspoiled destinations. While Japanese ecotours mainly target natural areas, some also feature local cultural resources such as original festivals in Ryukyu Islands and Ainu traditional culture in Hokkaido. These cultures are closely related to the surrounding natural environment, so experiencing both nature and culture is a means of enhancing the tourist experience. Furthermore, this type of tourism economically benefits local communities. The second criterion is ecotourism's focus on environmental education. In Japan, some organisations emphasise the educational dimension of ecotourism. For instance, NACS-J's (Nature Society of Japan's) definition of ecotourism (one of the most widely accepted in Japan) states that ecotourism is a form of tourism that:

1. Has minimum negative impact on local natural environment and culture;
2. Offers environmental interpretation/education as a means to improve tourists' understanding and enjoyment of the natural area;
3. Contributes to conservation of local nature and culture; and
4. Contributes to the economy of local communities (NACS-J, 1994).

On the other hand, some Japanese definitions place less emphasis on interpretation and environmental education, stating only ecotourism's role

in visitors' enlightenment (Japan Travel and Tourism Association, 1996). The third criterion regards ecotourism's sustainability, reflected in its minimal impact on natural environment (and on local culture). As in many other countries, Japan regards ecotourism as a tool for sustainable local/regional economic development. Many ecotours in Japan are operated in mountainous rural areas with declining population and ailing economies. They, therefore, help to stimulate regional socio-economic revitalisation. While most Japanese ecotours operate within a sustainability philosophy, some researchers point to the occurrence of mass tourism disguised under the label of 'ecotourism' (Yoshida, 2004).

Arima (2010) pointed out that even in Western ecotourism literature, there is little consensus about the spectrum covered by these criteria, with meanings ranging from the most radical to the broader and more flexible ones. Figure 38.1 illustrates the relative position of Japanese ecotourism

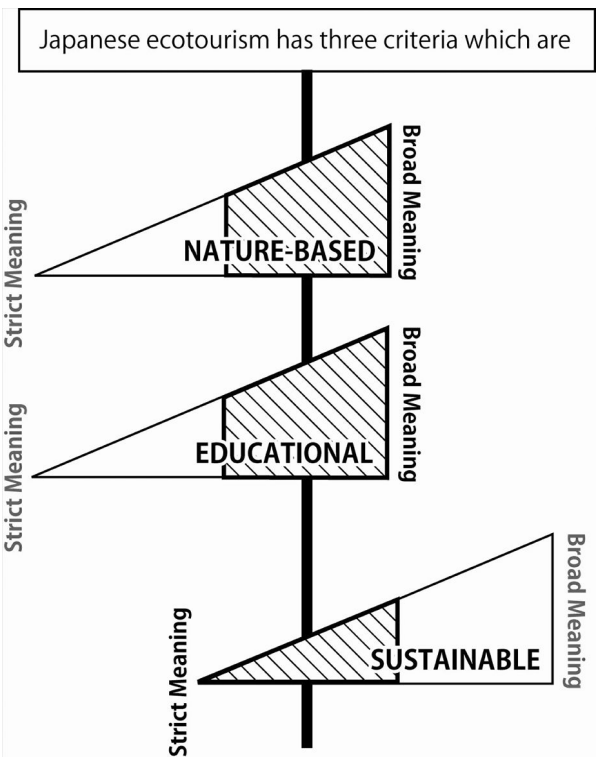

Fig. 38.1. Japanese ecotourism should broadly be nature-based and educational as well as strictly sustainable.

Source: Based on Arima (2010, p. 68).

according to Japanese definitions, compared to international definitions. While for the first criterion, Japanese ecotourism has broader meanings (with its wider focus on both nature- and culture-based resources), and the educational criterion is also more flexible, the sustainable criterion of Japanese ecotourism is rather strict (Shimakawa, 2002).

Rules for ecotours and related activities are an important factor in ecotourism management. The history of ecotourism in Japan started with the pioneering whale-watching ecotours in Ogasawara Islands, which remain to this day as one of the best known Japanese ecotourist destinations. Ogasawara (Bonin) Islands are located 1,000 km south from the Japanese mainland of Honshu (Fig. 38.2). The archipelago consists of about 30 islands and is under the administration of Tokyo Metropolitan Government. The main islands are Chichi-jima and Haha-jima, with a population of 2,800 people; the other islands are uninhabited by people. There is a ferry service that leaves Tokyo once a week, takes 26 hours and is the only means of transportation to the islands. This isolated location and limited access to the islands helps to restrict mass tourism, by limiting the tourist numbers to about 15,000 per year (Fig. 38.3). The two main islands have very good ecotourism potential and were at the forefront of ecotourism development in Japan.

Ogasawara Islands have been designated as Ogasawara National Park since 1972. The continental area of National Park is 6,629 ha. The largest landholder is the Japanese Government which holds 81.5% of the land, and private landholders have 14.1% of all the land. Local governments (the Tokyo Metropolitan Government and the Ogasawara Village Government) possess the remaining 4.4% of the land. In general, the land area of a National Park in Japan is divided into four managerial zones: Special Protection Zones, Special Zones, Ordinary Zones and Marine Park Zones (Fig. 38.2). The Special Protection Zones are the most important area of a national park in terms of nature protection and are mostly out of bounds for general public. The Special Zone of Ogasawara National Park is the largest. It accounts for 4,934 ha which is 74.4% of the land area. The public is allowed to access Special Zones and Ordinary Zones but huge constructions or changes in the landforms are prohibited. The Marine Park Zone is designed to protect the marine environment and 446.6 ha of the Ogasawara Islands are allocated as Marine Park Zone (Ministry of Environment, 2009). The Ministry of Environment (2009) manages facilities, users such as tourists and guides and landscapes in Ogasawara National Park.

MOE (Ministry of the Environment), which is managing Japanese national parks set out basic rules in 1999, called the Ogasawara Country

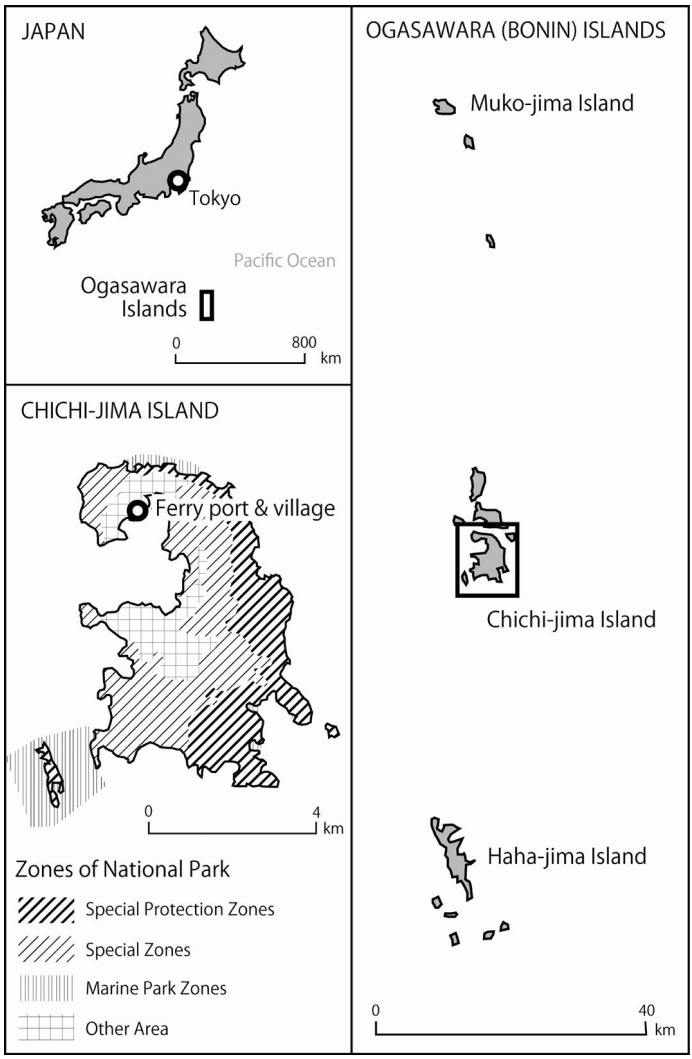

Fig. 38.2. Location of Ogasawara Islands and Chichi-jima Island. Chichi-jima Island is 2,380 ha in area and is in Ogasawara National Park. The park has three zones on the land and Marine Park Zones. Land zones are: Special Protection Zones: 893 ha, Special Zones 979 ha and Ordinary Zones which are too small to show in this figure are occupied for 80% of the land.

Source: Ministry of Environment (2009).

Code (OCC) for protection and utilisation of Ogasawara fauna and flora for future generations. The Tokyo Metropolitan Government (TMG) established the Guidelines for the Protection and the Appropriate Use of Nature on the Islands of Tokyo [Governor's Decision Making] (GPAUNIT) in July 2002

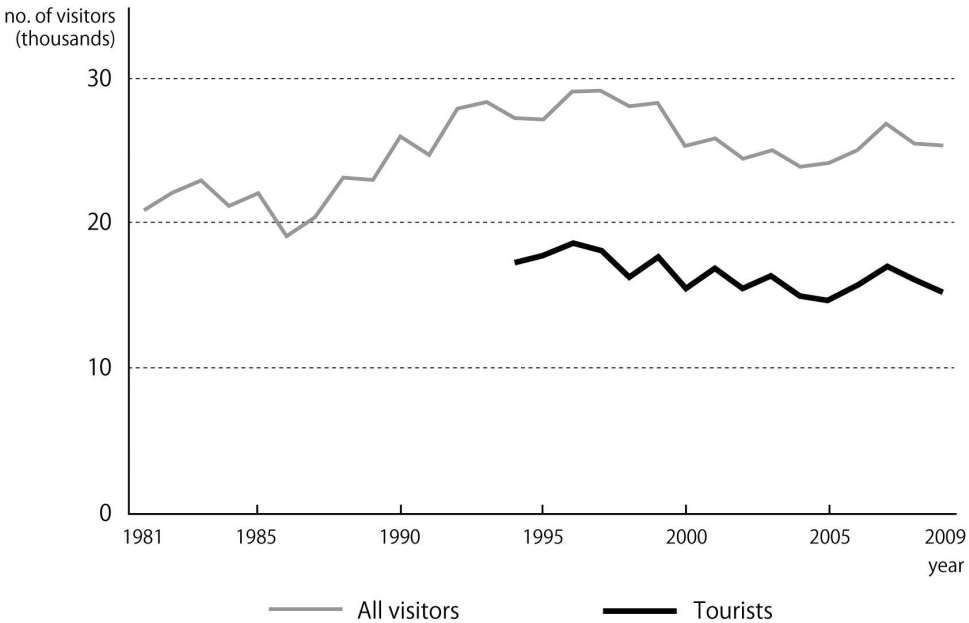

Fig. 38.3. Changes in visitor and tourist numbers to Ogasawara Islands. The number of tourists is approximately 60% of all visitors to the islands. The number of visitors has been increasing since 1980s and on the same level since the early 1990s.

Source: Ogasawara Tourist Association (2010, p. 1).

to provide a basic framework in order to overcome problems of common pool resources (CPRs). GPAUNIT are supported purely on the agreement between the governments and there is no legal penalty for violation of the rules. In fact, Japanese law for national parks: National Parks Act prohibits clapping on any regulations and codes. Therefore, TMG is unable to lay down any regulation on its own. Consequently, TMG implemented a penalty-free agreement on guidelines (AGs) with the local government.

Ogasawara Islands have a unique natural environment. The islands are comprised mostly of volcanic rocks and in part sedimentary rocks, including limestone, and the associated karst landforms represent important sightseeing resources. The islands' climate is subtropical, but there is less rain compared to the Ryukyu Islands in the south-west of Japan; most soils are unsuitable for farming. Due to isolation from the continent, the original island ecosystem included many endemic plant and animal species. About 40% of overall plant species and 70% of trees species are endemic to the Ogasawaras (Shimizu, 2003). The list of animal life also included many unique and endemic species, such as the Japanese wood pigeon

(*Columba janthina*), Bonin flying fox (*Pteropus pselaphon*) and many types of snails. Following human colonisation, non-native/invasive ant and animal species caused serious damage to native species, ecosystems and to local biodiversity. In 1987, about 30% plant species were non-native species (Kobayashi and Ono, 1987), while about 80% of endemic plant species were in the list of endangered species in 2003 (Shimizu, 2003). Nature restoration projects (eradication of alien species along with projects for artificial reproduction of some native species) carried out during the past decades have been only partly successful (NACS-J, 2007). Ogasawara Islands are located along the migration routes of various species of marine mammals, and the common animals around the islands are whales and dolphins. Humpback whales can be seen during the winter season and sperm whales can be seen in all seasons and constitute popular sightseeing resources.

The islands' history and culture are also very unusual. The first residents were foreign whalers that settled there in 1830. The islands were reorganised as Japanese territory after the visit of a Japanese government officer to the islands in 1876. Japanese from the mainland settled here and population gradually increased to 7,700 people. After the war, the islands came under United States administration, and reverted to an almost uninhabited condition for about 20 years. After being returned to Japan in 1968, the islands were resettled by Japanese and are now under the administration of TMG. This cross cultural history of the islands gave birth to an original and unique cultural heritage, also a very important tourist resource. For example, the Nanyo Odori is a traditional dance, similar to some Micronesian dances. The spoken language is also unique and is of interest to some researchers (Long, 1998).

There were 58 tour operators in the Ogasawara in 2011. The major ecotour activity is whale watching in the islands. The prices vary from 8,000 yen to 12,600 yen for a day tour and 4,000 yen to 9,000 yen tours for half a day tour including a tour for landing on Minami-jima Island. A tour consists of from 6–30 tourists and by 2–3 staffs depending on the size of boats.

38.2. Evolution of the Agreement on the Guidelines and the Self-Imposed Management Rules for Minami-Jima Island

This section introduces the five main self-imposed management (SIM) rules for managing ecotours and the use of nature in Ogasawara Islands (see Table 38.2). The first and oldest SIM rules were established by the Ogasawara Whale-watching Association (OWA) in 1989 to manage

Table 38.2. List of major self-imposed rules on Ogasawara Islands.

	Name of the rule	Year of commencement
1	Self-imposed rule for whale watching by Ogasawra Whale-watching Association	1989
2	Self-imposed rule for dolphin swim by Ogasawra Tourist Association	2005
3	Self-imposed rule for watching Bonin Frying Fox by Ogasawara Tourist Association	2004
4	Rule on Haha-jima Island on the Guidelines for the Protection and the Appropriate Use of Nature on the Islands of Tokyo (GPAUNT)	2003
5	Rule on Minami-jima Island on the Guidelines for the Protection and the Appropriate Use of Nature on the Islands of Tokyo.	2003

Source: Ministry of Environment (2004, pp. 70–78).

whale-watching. Its aim is to protect whales', by regulating the minimum distance between boats and the whales (boats are to slow down when they are 300 m from whales and are not to come closer than 50 m from sperm whales and 100 m from humpbacks). These rules are not legally binding, but have been voluntarily followed (as a part of a gentlemen's agreement in the Ogasawara community) by all tour operators for the past 20 years and have proven effective in protecting the whales.

The set of SIM rules established by Ogasawara Tourist Association (OTA) regulates swimming with wild dolphins offshore, another major tourist activity on the islands. The third SIM rule concerns tours for watching the Bonin flying fox (*Pteropus pselaphon*). The number of tourists per tour and operating times are not yet regulated; at present, restrictions refer to the use of lights (only low intensity/red lights; only one flash lamp per tour is allowed). The fourth and fifth sets of SIM rules refer to tours to Haha-jima and Minami-jima and comprise stricter regulations, such as designated routes and limits to the number of tourists allowed per day (Table 38.3). The rules for tourism on Minami-jima Island are considered to be most effective for nature conservation and ecotourism. Therefore, this section focuses on these SIM rules and the history of their creation to overcome problems of common pool resources (CPRs) under the framework of the agreement of guidelines (AGs).

Minami-jima Island lies just one km south west of Chichi-jima Island (Fig. 38.4); it mainly consists of limestone rocks and is famous for its

Table 38.3. Contents of rule on Minami-jima Island on GPAUNIT.

Rules	Contents
Walking	Tourists must keep to the trails
Maximum time on trails	2 hours
Maximum number of tourists on trails per day	100 people
Maximum number of tourists per group	15 people
Additional restriction	Tourists are prohibited to land on the island in 3 months of the year.

Source: Ministry of Environment (2004, p. 73).

Fig. 38.4. Ougi pond: Scenery from the hill on Minami-jima Island. This scenery is the most known by tourists as the site of fabulous scenery. Taken by Takayuki Arima, September 2010.

spectacular inland and submerged karst landforms and landscapes which constitute important sightseeing resources (see photograph, Fig. 38.4). The vegetation is dominated by Korean velvet grasses (*Zoysia tenuifolia*) with beach naupakas (*Scaevola sericea*) and screw pines (*Pandanus boninensis*). This island is owned by the Forestry Agency in Ministry of Agriculture, Forestry and Fisheries in Japan and has been used for recreation and tourism before with tour operators and tourists. The landing point by boats on this

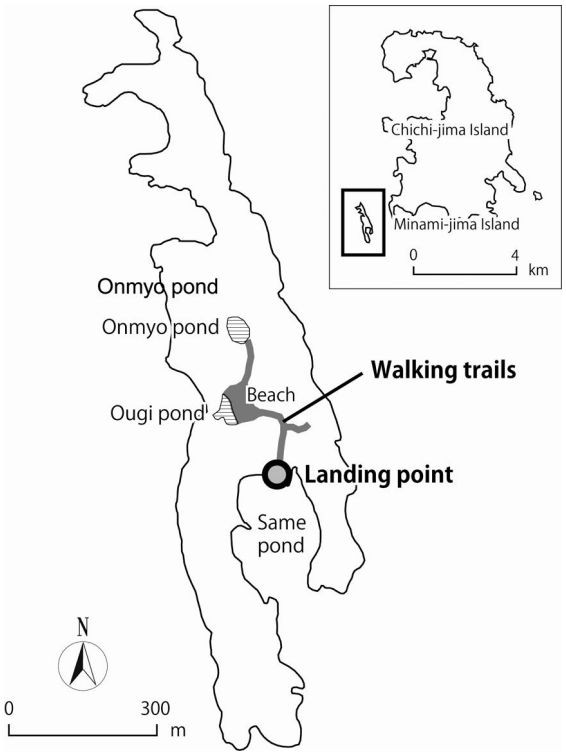

Fig. 38.5. Map of Minami-jima Island and walking trails. The landing site and walking route are both designed by the rules.

Source: Ichiki and Shumiya (2007, p. 75).

island is shown in Fig. 38.5. From the landing point to Ougi lake, the trail had been eroded. The erosion had grown to sixty metres in length, is three metres wide and one metre deep in some places (Yoshida, 2004). This erosion had been caused by wild goats and tourists on the tour from Chichi-jima Island.

In order to land on this island, tourists need to join a tour from Chichi-jima Island. At present, there are 22 operators allowed to land and operate tours under SIM rules. Activities such as walking/hiking, sightseeing and swimming in the lake pool take about one hour and follow a strict set of rules (see below). This length of time and range is insufficient for an organised ecotour, and so almost all operators combine the tour with other ecotour experiences. The most famous activity in Ogasawara Islands is whale watching, and there are about 20 tours per day for this purpose. Therefore, many operators add whale watching on their way to or on their way back from Minami-jima Island so that the total time for the ecotour is about 3 hours.

In 2011, the tour prices of landing in Minami-jima Island and whale watching for half a day tour was 4,000–9,000 yen. Other organised tours around this island on the sea include swimming with dolphins and diving. About 10 operators include diving tours and swimming with dolphins in their travel schedule.

The Ogasawara Village Government (OVG) and TMG made AGs in September 2002 based on GPAUNIT in July 2002. AGs for the ecotour on Minami-jima Island are created based on four major points. The first one refers to zoning and the designation of the area covered by the agreements (areas where the biodiversity, the habitat of the valuable plants or wildlife, valuable landforms or landscapes are protected and the designated areas/trails where tourists are allowed) based upon Article 2 of GPAUNIT. AGs determine the areas that are reserved for biodiversity protection, the habitat of the valuable animals or plants, those that have valuable physical features and those subject to degradation by over use or which have valuable landscapes.

The second principle refers to the obligation of OVG which has a close relation with local residents, to enforce the agreement based on Article 3 of GPAUNIT; to manage AGs by themselves. The establishment of a monitoring system to evaluate the effectiveness of the regulations based upon Article 4 of GPAUNIT, is a third key point of AGs. The monitoring is the basic aim for AGs. The checking system to evaluate this system is imperative. The last one refers to the system of training of guides and their certification; local guides are required to provide interpretation to the tourists and cooperate in monitoring tourist conduct and environment quality based on Articles 5, 6, and 7 of GPAUNIT. They are required to provide information about the islands' nature to the tourist, and to cooperate in the monitoring of the island.

The contents of AGs on Minami-jima Island consist of two parts: the general rules (common for most islands under Tokyo Metropolitan Government administration) and the local/specific rules. The common rules stipulate the following:

1. Tourists must follow the guide.
2. Guides must show their certification to the tourists on the tour.
3. Guides and tourists must keep to the designated trails.
4. Guides and tourists should not displace/remove local plants, animals, rocks.
5. Guides and tourists must avoid bringing in invasive species such as plants/seeds, insects, animals.

6. Guides and tourists should not feed wildlife.
7. Guides and tourists should not disturb wildlife.
8. Guides and tourists should not scribble on the rocks.
9. Guides and tourists must collect and bring back their waste; disposal on the island or in the sea is forbidden.

Further to these general rules, there are the local/specific rules. The local/specific rules outlined here are for the ecotours on Minami-jima Island. These regional rules are:

1. The tour group should keep to the designated trails (Fig. 38.6).
2. The tour group should limit the time spent on the island to 2 hours.
3. The total number of tourists on the island should not exceed one hundred per day.
4. To allow for re-vegetation, the island is off limits for three months per year.
5. The maximum number of tourists per tour is 15 people (Table 38.3).

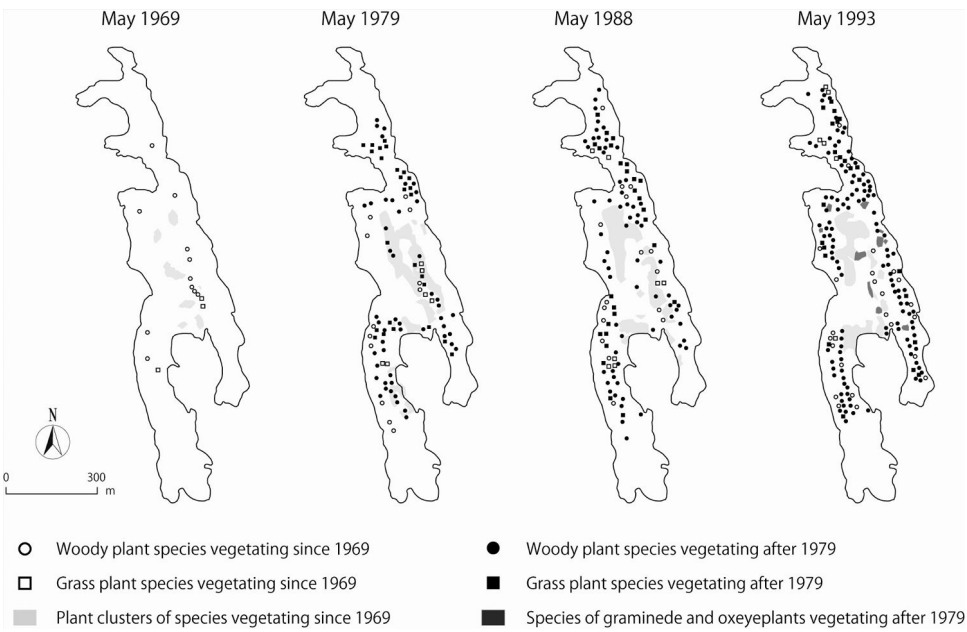

Fig. 38.6. Processes of vegetation change since 1969 on Minami-jima Island. The goats were stamped out in 1970 and 1971. The vegetation of the land in 1993 mainly consists of revegetated areas where goats were stamped out.

Source: Toyoda *et al.* (1993, pp. 8–9).

The actual numbers of tourists in a group is based on a model for the Galapagos Islands (taking into consideration the optimal size of groups passing by each other on the same trail) (Doi, 2011).

The AGs were implemented in 2002, but the foundations of the GPAUNIT were set out much earlier by Ogasawara's residents. The first step in the establishment of the SIM rules came in 1997, when OVG and NACS-J conducted a survey on the relationship between tourist use and environmental degradation of the island (NACS-J, 1997). One such example of degradation is trail erosion from the landing point to Ougi lake (60 m in length, 3 m width and up to 1m in depth) (Yoshida, 2004). Erosion was initially caused by wild goats but subsequently aggravated by the behaviour of tourists and their trampling. NACS-J (1997) concluded that the situation is serious and suggested concrete steps for action: designating a system of trails, regulating tourist numbers, enforcing a tourist code of conduct, offering effective interpretation and establishing a monitoring system. The MOE laid out basic rules called the Ogasawara Country Code (OCC) in 1999, for protection and utilisation of Ogasawara fauna and flora for future generations, which provided rough framework for sustainable conservation and use of the nature. The Code consists of ten basic rules, such as no take policy from the islands (Ogasawara Ecotourism Congress, 2010).

The tipping point for the agreement came in 2000, when the governor of TMG visited the island and stated the need for a system of regulations. As a consequence, the OTA put together the first, embryonic set of SIM rules, based on the suggestions of the previous survey, establishing the system of designated trails and emphasising the role of guides in enforcing the rules. From 2000, the actors such as TMG, OVG, OTA and tour operators (who are local residents) started to go into action for management of problems of CPRs.

A second set of rules was added by OVG in 2001. From late 2000, OVG and OTA started to work on additional SIM rules suggested by the Governor, which include the designation of a period when the island is off limits for tourism, the tour operators' obligation to report his/her tour plan for landing a day earlier; and limiting the time on the island to 2 hours per tour. Stricter rules were followed as required by TMG after the survey in 2000 (NACS-J, 2001), limiting the numbers of tourists allowed to land to 100 people per day and 15 people per tour (in order to encourage the recovery of native vegetation) and taking measures to increase the local residents' environmental awareness.

The year 2002 marks the birth of TMG's Guidelines for the Protection and the Appropriate Use of Nature on the Islands of Tokyo [Governor's Decision Making] (GPAUNIT) to provide a basic framework in order to overcome problems of common pool resources (CPRs). GPAUNIT covers both Minami-jima and Haha-jima Islands. The agreement is focused on environmental conservation (designating special conservation areas where research and monitoring is conducted, establishing rules for appropriate use) and on developing a guide training and certification program (Cunningham, 2005). Nature guides are to play a leading role in conservation, by providing nature interpretation for tourists' improved understanding of nature, enforcing the regulations and monitoring tourists' conduct. Local guides' commitment to these regulations is essential for ecotourism development on the islands, and only Ogasawara residents over 18 years of age are allowed to participate in the training and certification programs organised by TMG. The nature guide training program started in October 2002. By 2008, the number of certified tour guides were 204 for the Minami-jima Island and 31 for Sekimon area on Haha-jima Island.

The GPAUNIT is modelled on similar rules to those used in the Galapagos Islands (Doi, 2011). Doi, who was involved in the negotiations between the government and the residents during the period 2000–2005, evaluates the regulations on Galapagos as a good example of cooperation between the government, private research sector and nature guides, resulting in the quality of ecotours. On the other hand, cooperation with local residents and some tour operators was recognised as a problem in Galapagos. In order to avoid such problems in the Ogasawara Islands, the TMG has held meetings with local residents since 2000, to explain the contents of the GPAUNIT and its potential benefits to local nature, society and economy. The major disagreement between local residents and the government is about the limit of the number of tourists to Minami-jima to 100 per day. TMG could not prove the scientific basis of this number (Ishihara *et al.*, 2010), and agreed to reassess it after further monitoring. This monitoring system serves a dual purpose: It observes the natural environment and its changes, and checks on compliance of regulations without which the results of the monitoring become meaningless. Although AGs are not enforceable under Japanese law and the people who break the rules of GPAUNIT cannot be punished, there has not been a single case of non-compliance to date due to the socio-economic environment of the island. The results of a questionnaire for tourists to the island showed that they fully understand the limited access to the Minami-jima Island helps to conserve island's nature

(Doi, 2011). This indicates the absence of free-rider problems on these islands as at June 2011.

Minami-jima Island used to be heavily utilised for tourism activities in the past because the island could be accessed and walked by anyone as a common pool resource. The situation was similar to that of the tragedy of the commons. The situation was regarded by some residents operating ecotours as having an unfavourable impact on nature as well as negative economic consequences for tourism. They sought a way for the more appropriate use of the resources of Minami-jima. TMG, in the meantime, started working on the same due to Governor's remarks and began to organise the framework for solving this problem. As a result, the AGs have been set out with authorised SIM rules under GPAUNIT.

The success from implementing authorised SIM rules to overcome problems of using common pool resources (CPRs) is based on the following principles:

1. Local residents' commitment and direct involvement in conservation of local natural resources by the use of innovative self-regulatory instruments (voluntary rules for promoting sustainable tourist use, the first of this kind in Japan).
2. Awareness/capacity building: the early shift in awareness of local community was an integral part of successful development of nature-based tourism activities; later, guide/interpreter training courses contributed greatly to the capacity building of local people (Nature Tourism, 2004).
3. Close cooperation between different government stakeholders (personal involvement of Tokyo Governor, TMG, OVG) and the local community/local NGOs (OWA, OTA, Ogasawara Ecotourism Commission) in creating a common vision of sustainable ecotourism development and taking the necessary steps to implement it.

38.3. Effects on Nature Rehabilitations and Tourist Behaviours in Utilising CPRs under AGs

There is a growing concern for vegetation changes on Minami-jima Island. The alteration of its vegetation has brought about three factors: wild goats, weather and tourists. The goats were partially removed from this island in 1956. As a result of constant browsing by goats, some plant species such as the tree heliotrope (*Heliotropium foertherianum*) and the beach naupaka (*Scaevola sericea*) are nearly extinct. Furthermore, a survey by Toyoda *et al.* (1993) showed that there was only a small community of myoporaceae

(*Myoporum boninense*) where goats were present. Goats were completely stamped out from Minami-jima in 1970 and 1971 to protect its vegetation.

According to the survey by Toyoda *et al.* (1993), the woody plant species (spread by drift dispersion and wind dispersion) seem to have come in after the stamping out of the goats. Many woody plant species which can be seen now in the island have come in since these times (Fig. 38.6). Some plants produce lots of berries so that they can be easily increased. The other vegetation consists of species of grass, and they increased during 1970–1990s (Fig. 38.6). About half of these grass plants are endemic species such as Hamabossu (*Lysimachia mauritiana*) and Ogasawara Azami (*Cirsium boninense*). These species appeared first on bare grounds spread by wind dispersion or drift dispersion in 1970s. After that, other species were dispersed by humans during 1980–90s (Fig. 38.6). The new species in the 1980s to 90s are mainly non-native species for this island such as species of gramineae and oxeye plants. These non-native species constitute about 40% of all grass plants on the island. The 1980s also coincides with an increasing number of visitors to Ogasawara Islands (Fig. 38.3). Therefore, these non-native species could possibly have been brought by tourists. Toyoda *et al.* (1993) concluded that some actions were needed for conservation protection.

Tourists brought many species of grasses to the island. At the same time, they had caused erosion of the land and created bare surfaces (Fig. 38.7).

Fig. 38.7. The land condition on Minami-jima Island in 2003. There is a large erosion area in the centre on this picture. The erosion is 2.61 metres wide and up to 0.89 metres deep. Taken by Oka Shuichi, February 2003.

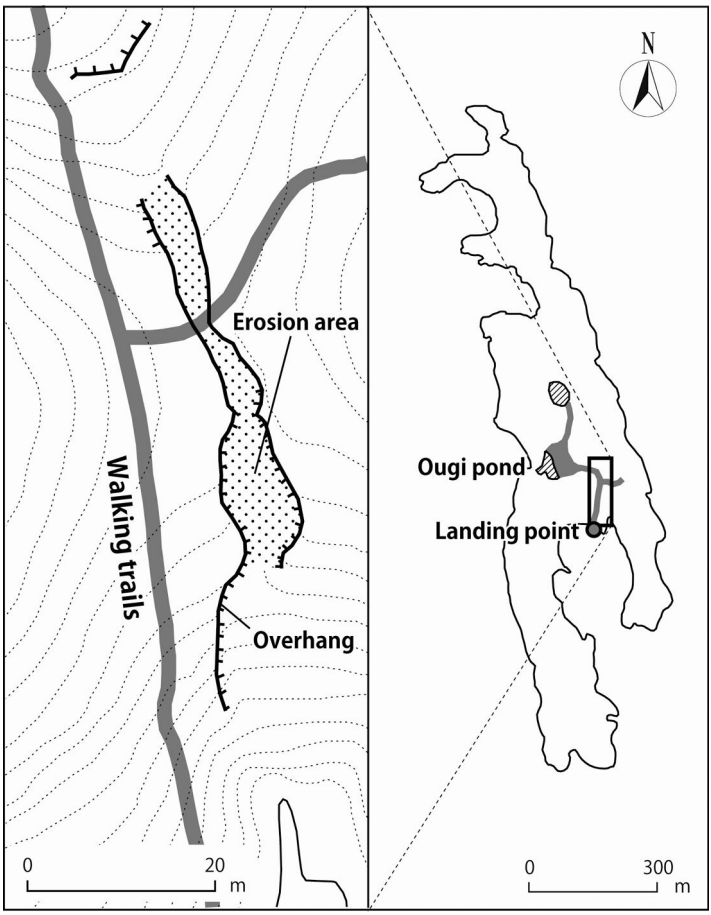

Fig. 38.8. The erosion area and overhang on Minami-jima Island.

Source: Oka *et al.* (2002, p. 60).

They could walk around all parts of the island. Therefore, the impact of tourists on nature cannot be ignored. A most impacted area (shown in Fig. 38.7) is the saddle between the landing point and Ougi Pond (Fig. 38.8). The survey by Oka *et al.* (2002) showed the erosion to be 2.61 metre in width and to be up to 0.89 metre in depth. The speed of the erosion can be 10.0 millimetre per year; on the other hand, the speed of generation of soils tends to be in 0.01 to 7.7 millimetre per year (Buol *et al.*, 1973). The area of the erosion has lots of overhang which appears as a small cliff. These overhangs on the edge of erosion (Fig. 38.8) are covered on top by Korean velvet grasses. Goats and tourists' behaviours are considered to be the main causes of this erosion. However, temporary weather conditions could have also caused

adverse impacts (Oka *et al.*, 2002). The erosion is generally advanced by an abrasive action called 'gully erosion' which is related to water flow. Rain is one of the most important factors in this process. Ogasawara Islands are on the route of typhoons between June to October. In this season, the amount of rainfall increases greatly and strong winds create high waves around the island. These heavy rains, strong winds and high waves can cause damage to plants and soil erosion. The dry season in summer conversely desiccates the land.

The summer season coincides with the season of typhoons and it is also the main tour season in the Ogasawara Islands. Soil erosion is most severe in the summer season, but it is also the most gainful season for tour operators and residents of Ogasawara. This was the basis for preparing SIM rules under AGs on the islands in order to conserve nature by co-management operators: TMG, OVG, OTA and ensure the sustainable utilisation of CPRs by tour operators.

Before the AGs, an average of 116.3 tourists and 11.0 guides per day landed in 2002 on the island (Oka *et al.*, 2002), even though AGs and even the SIM rules by OVG existed in 2001. The maximum number of tourists landing on the island was subsequently fixed at 100 tourists per day. In 2003 and 2004 when GPAUNIT operated, only once did the number of tourists exceed 100 people in 22 days of a survey by Ichiki and Shumiya (2007). This decrease seems to be an effect of the AGs. GPAUNIT under AGs also has demanded the number in a group be not more than 15 people. The average numbers of the group per day were 12.9 in 2002, 14.0 in 2003 and 10.3 in 2004; thus, the guideline was effectively applied to manage the CPRs of Minami-jima Island. In addition, the whole landing time per group on the island is nearly always under 2 hours. The number of groups which went overtime were four in 2002 and two in 2003. Therefore, the SIM rules under AGs have also effectively controlled the time spent on the island. From these observations, it can be concluded that SIM rules under AGs have been effective in managing tours on this island.

The quality of the ecotours also has been changed by SIM rules under AGs. The rate of walking exactly on the trails by tourists was 72.3% in 2002. This rate changed to 46.3% in 2003 and to 72.0% in 2004 (Ichiki and Shumiya, 2007). These changing rates are related to the size of the groups. There were 17 groups having over 15 people in eight survey days in 2003. This may have been the reason for the low scoring. SIM rules under AGs also require the guides to inform tourists who do not walk on the trails, and if some tourists flout this rule, the guides are required to inform such

tourists not to repeat this. The rate of this action was 23.1% in 2002, 90.9% in 2003 and 53.3% in 2004. The guides are also required to interpret the land and its nature for their tourists according to SIM rules under AGs. This was done for 78.7% of the tours in 2002 and changed to 96.3% in 2003 and 93.4% in 2004. There is a clear increase in the frequency of nature interpretation.

The main reason for the SIM rules under AGs is protecting the nature of the island. The island had the problem of land erosion as mentioned above. Although this erosion could be caused by goats or typhoons, the tourist activity is also one of the main causes. The planting of Korean velvet grasses (*Zoysia tenuifolia*) has started since 2002 to encourage the return of native vegetation. Oka *et al.* (2002) surveyed the vegetation on the area of erosion. The result of the survey showed that the plants have been slightly vegetated even in the eroded areas, but the rate of vegetation has not changed in the areas subject to erosion and those that are not. In addition to this, the cover of vegetation on trails is affected by not only human trampling but seasonal biological and ecological changes of plants. This survey pointed out the difficulties of planting and restoring the nature by artificial means and the requirements of monitoring for these changes, because there was inadequate time in this survey to evaluate the planting (Oka *et al.*, 2002).

The monitoring has been occurring since 2002 by TMG and NACS-J. According to some research articles and reports (Ichiki *et al.*, 2007; NACS-J, 2007), the re-vegetation off trails has been improving (Fig. 38.9). Rock steps have been introduced on some trails so that the vegetation on these trails has started growing. However, the amount of soil erosion on the trails which do not have rock steps is increasing (Fig. 38.10). The erosion on the trails without rock steps has been caused by the trampling of tourists and the heavy rainfall. The values of correlation coefficient with number of tourists and amount of erosion on several survey sites were under -0.6, which indicates increasing number of tourists is causing more erosion of soils (NACS-J, 2007). The value of correlation coefficient of erosion with amount of rainfalls was under -0.6 so that increasing erosion of soils is also related to the amount of rainfall. But rainfall cannot be controlled. The number of tourists should have been controlled by SIM rules under AGs. The SIM rules were actually set for the conservation of the nature and for stopping erosion. Ichiki *et al.* (2007) surveyed plant vegetation: Korean velvet grasses on the trails and its relationship to the number of tourists. Ichiki *et al.* (2007) found that growth of Korean velvet grass is seasonal. Taking into account the growth

Fig. 38.9. The land condition on Minami-jima Island in 2006. The vegetation cove on Minami-jima Island is much better than in 2003. The erosion area and surrounding area in the centre on this picture is more vegetated than in 2003 (see Fig. 39.7). Taken by Oka Shuichi, November 2006.

of this, they calculated the carrying capacity for this island to be 20 to 70 tourists per day.

In total, the situation on Minami-jima Island for tourism has been changed since the introduction of AGs. The SIM rules are designed to allow on the island only authorised operators with certified guides. Use of the island was changed to club management after AGs from common pool use before AGs. SIM rules under AGs conserve the island. Firstly, the deal can regulate the number of tourists and their behaviours. These changes depend on the cooperation of guides and corporations. Their understandings may have relied on the situation. SIM rules under AGs also help the re-vegetation of the land, but the numbers of tourists landing per day is still too high to stop soil erosion on the island. If the number of tourists remains as at present under the SIM rules under AGs, some physical support might be needed to reduce erosion such as the creation of board walks or on the paving of trails with rocks.

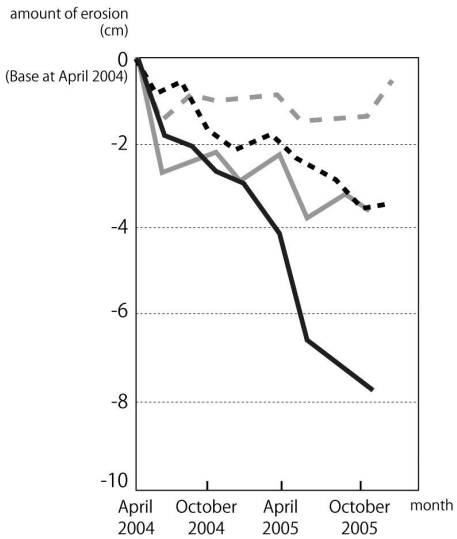

Fig. 38.10. Changes in the degree of soil erosion of four sites on Minami-jima. The survey by NACS-J (2007) was conducted in four sites on trails from April 2004 to November 2005. Each line shows the loss of soil depth on each site compared with site conditions in April 2004. All sites show some continuing erosion.

Source: NACS-J (2007, p. 30).

38.4. Toward the Sustainable Management as World Heritage Site

This chapter introduced the procedure for managing tourism and nature by means of SIM rules under AGs for community-based ecotourism management of Minami-jima Island in the Ogasawara Islands, one of the most famous ecotourism sites in Japan. The Ogasawara Islands are isolated from Japanese mainland so that they have unique natural and cultural resources as CPRs, and ecotourism activities are easily accommodated. Ecotourism on those islands had negatively impacted the natural resources in some cases. SIM rules were initiated by the committed involvement of the governor of TMG in 2000 for Minami-Jima Island. Problems of CPRs management apparently existed on the island and it suffered from the negative impact of tourism prior to the remarks of the governor. SIM rules were developed gradually by community-based co-management of Ogasawara with the support of TMG. The finalisation of SIM rules under AGs started in 2003 and took three years to finalise. SIM rules under AGs have changed the behaviours of tourists and of guides and have helped re-vegetate the island.

As mentioned in this chapter, conservation of the islands' nature is supported by the residents and guides. In fact, some residents work for civil service such as for OVG and TMG, and some other residents are tour operators who moved to the Ogasawara Islands inspired by the nature of the island and their interest in tourism. These characteristics of residents and their society are important factors in developing the management of community-based ecotourism for Minami-jima Island and for specifying SIM rules under AGs. Residents who operate tours are not focused on huge economic gains/benefits as in the case of mass tourism. They understand the character and situation of the island: Its nature, culture, and history. Given the historic and social background of these islands, sustainable society and economic gain within the islands' natural/ecological carrying capacity should be possible. In this context, it can be concluded that institutional management of community-based ecotourism management on Minami-jima Island has been successful and has promoted the coexistence of both ecotourism and nature conservation. This includes the situation of no free-rider problems under the AGs without legal penalty due to the islands' community-based management system.

In June 2011, Ogasawara Islands were inscribed on World Heritage list of UNESCO. It is the fourth Natural World Heritage site in Japan. Its listing as a World Heritage site was long wished for by the Ogasawara village community and TMG. It was listed under criterion nine and was regarded as one of the 'outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, freshwater, coastal and marine ecosystems and communities of plants and animals' (UNESCO, 2010). According to local accounts, the judges were impressed by the measures taken to protect the nature, in particular endemic species. There are many endemic species, such as snails, and they create their own ecosystems in wild.

However, the listing of the Ogasawara Island as a World Heritage site may change Ogasawara's communities. Firstly, the number of the tourists will most likely increase. The ferry to this island has a maximum capacity of about a thousand people. If the ferry is full on every trip, the numbers visiting the island will increase to about 70,000 people per year, which is about five times of the number of today. With the increasing number of tourists, the tour operators will be investing more on their operations and/or the number of operators will also increase. The number of residents who favour mass tourism on the islands could increase. Even now, some residents are critical of landing limits on Minami-jima Island. If the tourists are increasing, locals

may want fewer restrictions on tourist access to Minami-jima. Consequently, problems associated with CPRs could re-emerge, because AGs are only an agreement between the Ogasawara community and TGM, and nobody is going to be punished even if the rules are broken. Japan's National Parks Act prohibits clapping on of any regulations and codes, and Minami-jima is owned by the Japanese Government not by TMG. TMG cannot lay down any binding regulations. Consequently, it made an agreement about guidelines (AGs) with the local government with no penalty for non-compliance. Thus, the ecotourism future of the island is uncertain.

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Chapter 39

ECOSYSTEM SERVICES APPROACH TO DIVE TOURISM MANAGEMENT: A CASE STUDY, RAS MOHAMMED NATIONAL PARK, EGYPT

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Abstract: Ras Mohammed (Egypt) is home to some of the most spectacular coral reefs and best known SCUBA diving areas in the world. Such uniqueness makes the park a major recreational attraction and the cornerstone of ecotourism within South Sinai. A total of 495,382 people visited Ras Mohammed in 2008–2009. In order to successfully achieve the dual goals of reef protection and income generation, the management of the park needs to understand visitor preferences for reef quality, congestion level, dive sites, entrance fees and other attributes of the park. Management plans and tourist opportunities should be based on these preferences as well as the physical characteristics of reef sites. An ecosystem services approach that can support the management of coral reefs in the context of the seascape and takes into account the impact of the land use should be adopted. The ecology of reef services, the benefits, the beneficiaries, the scales, and the threats to reef system should be better understood for efficient planning and management. Armed with a broader, deeper knowledge of the different aspects of the ecosystem, we will be better equipped to safeguard the future of coral reefs.

Keywords: Coral reefs; ecosystem service approach; recreation; choice experiments; tourism impact; carrying capacity; preference heterogeneity.

39.1. Introduction

Tourism is the fastest growing major industry in Egypt with over 12 million foreign tourists per year and coastal tourism is the largest sector in this industry (TDA, 2010). The Egyptian Red Sea has become one of the most well-known dive destinations in the world. With a total of 158,362 certifications between 2001 and 2003, 76,266 people took the entry level PADI Open Water in Egypt (Ashworth, 2004). The number of visitors to Ras Mohammed

increased from a few hundreds in 1988 to more than one million in 2009. A total of 495,382 people visited the old boundaries of Ras Mohammed in the fiscal year 2008–2009, of which 471,142 (95%) were foreign tourists (EEAA, 2009). The volume of tourists and the intensive recreational use by snorkelers and SCUBA divers have degraded the reefs. A swimmer, snorkeler or diver resting, walking or standing on a coral surface can damage the fragile tissue surface of the living system. This reef degradation and the loss of productivity and biodiversity could have serious consequences. It threatens the continued flow of the ecological services provided to millions of other dependent species and the numerous benefits provided to people. This raises two important questions. What are coral reefs services, and why is it important to value their benefits? The repercussions will not be restricted to coral reefs but will affect many other reef-associated ecosystems. The stability of coral reefs is affected by the resilience of reefs in the surrounding seascape and human activities in the nearby landscape. A landscape-seascape perspective for coral reefs conservation must be adopted. The ecosystem services approach can represent a consistent point of contact between ecology and economics and a way to incorporate economic valuation into ecosystem management decisions. Although, the ecosystem services are vital to our survival, we still know very little about them and their values. The deeper understanding of ecosystem services can improve coral reef management and peoples' understanding of the threat posed to their social and economic well-being.

The challenge facing the government of Egypt is to find a balance between environment protection and the promotion of economic development. This study aims to assist in this debate through valuing the coral reef recreational benefits within Ras Mohammed National Park, determining the factors that affect the demand for reef sites in the park, investigating visitor perceptions towards park attributes and identifying how much use is acceptable without leading to a decline in visitor enjoyment. It will also demonstrate the importance of tourism to the local economy, the impact of tourism on the coral reefs, the stakeholder analysis and the governance regimes that regulate the use of the park and the opportunities for effective environmental governance.

39.2. The Park Overview

Ras Mohammed lies at the southernmost tip of the Sinai Peninsula at the northern end of the Red Sea, overlooking the juncture of the Gulfs of Suez and Aqaba (27°44'N 34°15'E) extending from a point opposite the Qad Ibn

Haddan lighthouse on the Gulf of Suez to the southern boundary of the Nabq Protected Area on the Gulf of Aqaba. It is located just 12 km from Sharm El-Sheikh City. The park includes the islands of Tiran and Sanafir and all shorelines fronting the Sharm El-Sheikh tourism development area, and covers an area of 460 km^2 (327 km^2 of sea area and 133 km^2 land area (Pearson and Shehata, 1998). Ras Mohammed's coral reefs are world-famous, including some of the world's best diving sites. Visitors arrive on day trips by boat or from land. Shark Reef and Yolanda Reef are popular areas of coral reef in the park for divers. Other coral reef sites include South Bereika, Ras Ghozlani, and Shark Observatory. The reef structure varies from the vertical walls where coral can be found at depths of up to 100 m, such as at Shark Observatory, to the very shallow secluded Sha'ab El Talaba in Marsa Bereika.

Coral reefs are damaged by the same economic activities they support. Tourism is a double-edged sword. It is a main source of income generation and it is also the most pressing threat to coral reefs in Ras Mohammed. Kicking with the fins, hitting with the tank, making sediment clouds, photography, sitting and standing on corals are examples of the damages caused by SCUBA divers and snorkelers. They may also introduce chemicals, e.g. sunscreen, into the water. Tourism growth can be seen in Ras Mohammed (old boundaries), with the number of visitors increasing from 77,550 in 1994–1995 to 495,382 in 2008–2009. By adding the number of divers and snorkelers to the dive sites in the park extension (Tiran island and Sharm El-Sheik coastline), the number increases to more than 1 million visitors per

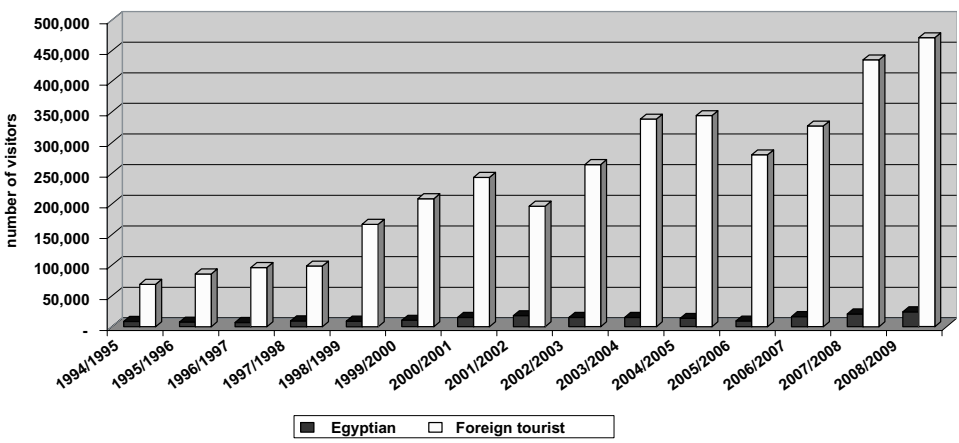

Fig. 39.1. Annual number of visitors to Ras Mohammed.

year. Figure 39.1 shows that the number of visitors to the park has steadily increased during a recent 15 year period.

39.3. Ecosystem Services Approach Applied to Coral Reefs

Coral reefs provide a wide range of services with valuable benefits to humanity, physical as well as moral, as means of life support and quality of life enhancements. A framework (see Fig. 39.2) was established for valuation the benefits provided by the coral reefs. It includes: boundaries, characteristics, services, benefits, values, scales, stakeholders, and management.

39.3.1. *The concept of ecosystem services*

Studies that have addressed ecosystem services vary in their use of definitions and key terms, which has led to linguistic uncertainty and ambiguity around the concept of ecosystem service (Burgman, 2005; Wallace, 2007). Although the early references to the concept of ecosystem services relied on different terms such as structures, assets, stocks, processes, functions, services and values, the more recent studies have predominately linked the ecosystem services to human welfare benefits. The ecosystem services represent conditions and processes in Daily (1997), linkages in Binning *et al.* (2001), functions in Egoh *et al.* (2007), and benefits in Costanza *et al.* (1997) and MA (2005). According to Fisher *et al.* (2009), ecosystem services are 'the aspects of ecosystems utilised, actively or passively, to produce human well-being'.

39.3.2. *The importance of the ecosystem services approach*

The ecosystem services approach has become a key issue for conservation assessments (Egoh *et al.*, 2007), natural resources management and environmental valuation (Fisher *et al.*, 2009). The classification of ecosystem services provides better understanding for their characteristics which improves managing and valuing the benefits provided by them. For instance, better management and more concerted conservation policies can be established for reef services (e.g., shoreline protection, habitat maintenance) by knowing the fluctuations in tsunamis and predator outbreaks. The ecosystem services approach also allows trade-offs and comparisons among the potential benefits (Wallace, 2007) and identifies the nesting and overlapping of the system aspects (Turner *et al.*, 2008). The benefits arising from the coral reefs depend on the state of the whole reef and surrounding marine system. It is imperative to consider all the components of the ecological

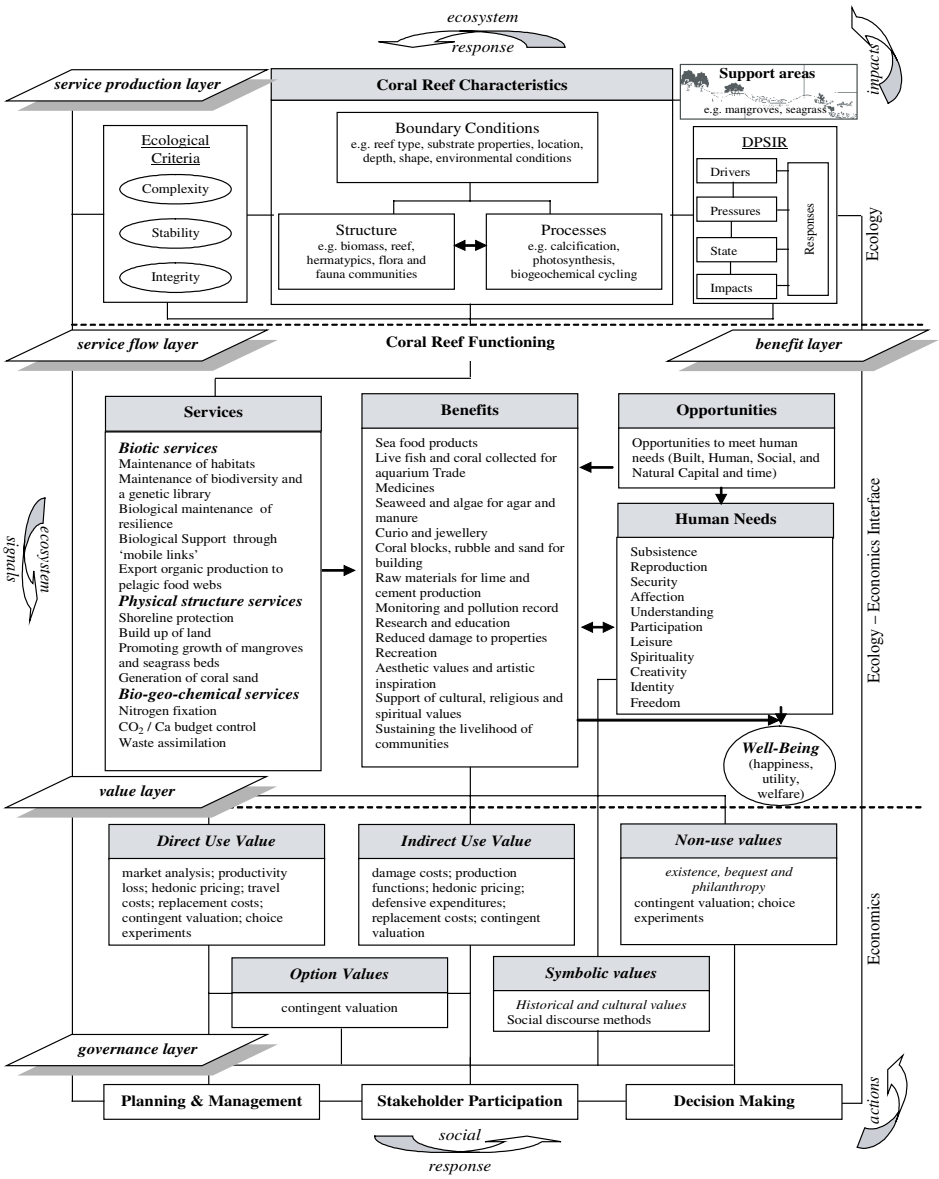

Fig. 39.2. Coral reef services, benefits and values. Adapted from Moberg and Folke (1999), Turner *et al.* (2000), Costanza *et al.* (2007).

system and the political and social contexts surrounding the underlined ecosystem services. The dynamics of the economic system is increasingly impacting on the ecological system dynamics. Limburg *et al.* (2002) demonstrated the importance of the appreciation of the inherent complexities of

both systems. The ecosystem services approach can represent a consistent point of contact between ecology and economy and a way to incorporate economic valuation into ecosystem management decisions (Turner *et al.*, 2003).

39.3.3. *Ecosystem services classification*

While broad agreement on the general concept of ecosystem services has been evident in recent publications, there has not been a consensus on a specific classification scheme for ecosystem services. Fisher *et al.* (2009) argued that the classification system should be conditioned by the characteristics of interest and the decision context. Moberg and Folke (1999) divided the ecological goods of coral reef ecosystem into renewable resources (e.g., fish, seaweed, medicine) and reef mining (e.g., sand, rubble, coral blocks). The services are classified into five categories: Physical structure services (e.g., coastal protection); biotic services (e.g., habitat maintenance); biogeochemical services (e.g., the retention of naturally occurring chemical compounds such as nitrogen and phosphorus) and the export of excess nutrients from the reef system; information services (e.g., climate record); and social and cultural services (e.g., aesthetic values, recreation). De Groot *et al.* (2002) classified 23 ecosystem functions into four categories: Regulation functions; habitat functions; production functions; and information functions. They noted that the first two categories are essential for the other two categories. The Millennium Ecosystem Assessment (2005) divided ecosystem services into four groups: Provisioning services such as food, genetic resources, medicines, and ornamental resources; supporting services such as photosynthesis, primary production, and nutrient cycling; regulating services such as the regulation of erosion, wastes, climate and natural hazard; and cultural services such as recreation, education, spiritual fulfilment and aesthetic enjoyment. Because of its simplicity, the Millennium Assessment (MA) classification is one of the most widely used. However, several studies (e.g., Boyd and Banzhaf, 2007; Wallace, 2007; Fisher *et al.*, 2009) showed that the MA classification can be further refined to fit specific policy contexts e.g., for environmental accounting, landscape management and economic valuation. Without these refinements, the MA scheme could lead to double counting the value of some services, particularly the supporting services and mix services with benefits within the same category. Wallace's schema (2007) arranged ecosystem services in a hierarchical classification starting with adequate resources such as food, oxygen and energy and progressing to other categories such as

protection from predators, disease, parasites; benign physical and chemical environment (e.g., temperature, light, moisture); and socio-cultural fulfilment (e.g., spiritual and philosophical contentment, meaningful occupation, knowledge). Although, this classification removes the risk of double counting and can yield useful information about the level or levels where people's needs are met by ecosystem services, it is not entirely consistent in terms of separating services and benefits. According to Fisher *et al.*'s (2009) approach the ecosystem services can be divided into intermediate services and final services depending on the degree of connection to human welfare. The final services in combination with other forms of capital provide benefits (e.g., the diversity of flora and fauna, clear warm water devoid of pollutants and pleasant surroundings are augmented by other forms of economic capital such as access facilities, boats, diving and snorkelling equipments, individual skills and time allocation to yield recreational benefits). This classification realises that services are often benefit dependent and their classification relies on the benefits of interest. Other advantages of this scheme are its appropriateness for valuation purposes and the recognition of ecosystem complexity.

39.3.4. *Ecosystem services characteristics*

The reef services are heterogeneous in their characteristics (type, space, evolution through time, dynamics, stability, etc.).

39.3.4.1. *Type*

Most of the benefits provided by coral reef services are public goods (i.e., neither rival nor excludable) such as CO_2 budget control, nitrogen fixation and waste assimilation. However reef services also provide benefits that are private goods (e.g., seafood products, raw materials, medicine). Moreover, some reef benefits may be non-rival but excludable such as climate record, research and education, while other benefits may be rival but non-excludable (open access) such as some fisheries. Because the majority of ecosystem services yield public goods, the risk of overexploitation of their benefits stock is high.

39.3.4.2. *Spatial and temporal scales*

Different kinds of coral reef services are provided at various scales. Some reef services are utilised in the same places where they were produced such

as raw materials, food production, biodiversity and resilience maintenance (*in situ* or within ecosystem) while other services may be provided in particular location at a specific time but utilised in different locations at another time, such as biological support through mobile links and organic production export to pelagic food webs (between ecosystems). Some services are provided omnidirectionally such as the climate regulation and existence value whereas other services are provided with a specific directional flow such as coastal protection and nutrient regulation. These services may have important place-based quality differences (Boyd and Banzhaf, 2007). Thus, the availability and quality of a specific service may differ from one area to another and from time to time. For example, Spurgeon and Roxburgh (2004) showed that the values of reef benefits in some areas in American Samoa were up to 130 times the territory average. The ecological scales at which ecosystem services are produced expand from the level of plot, via ecosystem and landscape (or seascape), to the biome and global system (Hein *et al.*, 2006). Understanding the spatio-temporal characteristics of coral reefs determines where and when the management interventions should be.

39.3.4.3. *Beneficiaries' heterogeneity*

Boyd (2007) noted that services are often a function of the beneficiary's perspective. Hein *et al.* (2006) asserted that the beneficiaries at different spatial scales have different perceptions and interests in ecosystem services. This is made more complex by the fact that these interests may also change over varying temporal scales. Costanza *et al.* (2007) noted that the mental capacity, education, cultural context, information, and the like can affect the relation between the need and the perception. Roxburgh and Spurgeon (2005) noted that the value of reef benefits varies between stakeholders due to the socio-economic characteristics and the level of dependency on these benefits. Such variations have spatial and temporal elements. Hein *et al.* (2006) noted that the scale at which the ecosystem service is produced determines the beneficiaries from this service. Bedouins in South Sinai, for example, benefit from fish resources of the Gulf of Aqaba that are of little importance at the national level. The municipality, investors and local authorities are interested in the coastal protection service provided by the reef to development. The national and international main interests are in the recreation and biodiversity of Ras Mohammed. The park management plan should therefore consider and balance these different interests and should as far as is practicable be acceptable to all stakeholders.

39.3.4.4. *Dynamics (complexity, joint production, and interdependence)*

The complex behaviours within an ecosystem can be seen through the interactions among its components. An ecosystem service can provide multiple benefits for human welfare (e.g., maintenance of habitats service can be realised in recreation, fish production and biodiversity). Certain benefits likewise are produced by multiple services (e.g., research and education are generated from different reef services such as genetic library and pollution and monitoring record). Some reef services are interdependent such as nitrogen fixation and biological maintenance of resilience while other services are mutually exclusive such as maintenance of habitats and waste assimilation. Thus, the utilisation of services can have positive, neutral, or negative impacts on other reef services.

39.3.4.5. *Stability*

Stability is a very important property for an ecosystem. An unstable ecosystem is more likely to be unable to maintain a diversity of services which has economic consequences for livelihoods. Coral reef deterioration may result in system flips from a high diversity coral-based ecosystem to an incursion of soft corals (Zoanthids) then to a low diversity macroalgae-dominated system (Moberg and Folke, 1999), and inter alia a loss of many reef benefits. Thus the big question is: at what levels of stress do the reef services flip to another state? The ecological succession of an ecosystem toward stability is assessed by its capacity to recover from disturbances (resilience) and its ability to withstand changes (resistance) (Holling, 1973).

39.3.4.6. *Ecological memory*

Nyström and Folke (2001) defined ecological memory as 'the composition and distribution of organisms and their interactions in space and time, and includes the life-history experience with environmental fluctuations'. They distinguished three interacting parts of ecological memory: biological (e.g., living coral, fish, sea urchins) and structural (e.g., dead coral framework and rubble) legacies; passive (e.g., larvae) and active (e.g., herbivorous and predatory fish, sea urchins) mobile links; and support areas (e.g., reefs, seagrass beds, mangroves). The presence and interaction between these parts depend on the accumulated experience to environmental changes. Moberg and Folke (1999) gave some examples for keystone species in the reef system. The reef-building corals (hermatypic corals) form the framework of

reef shaping its community and affecting all the services and benefits of the reef. The sea urchin (*Diadema antillarum*) and herbivores fishes and invertebrates support coral settlement by grazing down algae. The top predators in the reef system (e.g., triggerfish, pufferfish) regulate the herbivores and sea urchins. Mangroves and seagrass beds provide proper conditions for the growth of coral reefs offshore (e.g., clear, nutrient poor water); whereas coral reefs as physical buffers for waves and currents provide coastal protection for these ecosystems. The mobile links and species movements between ecosystems enhance the connectivity between these ecosystems, regulate several functions, support spatial resilience, and facilitate reorganisation following disturbance (Nyström and Folke, 2001). The delivery of benefits of coral reefs relies on complex interactions in the seascape as a whole (Moberg and Folke, 1999).

39.3.4.7. *Boundary conditions*

The physical, biological and chemical features of the reef system and the surrounded area should be defined in order to value the resultant benefits. Examples for these features include substrate properties, shape, and species present. Coral reefs are the result of an internal symbiosis between coral animals (polyps) and microalgae (zooxanthellae) living in their tissues. Corals are the main builders of the reef framework. The reef-building corals represent several modes of reproduction. They can reproduce both sexually and asexually. They are slow growing. Upwards accretion of reef structures reaching 9–15 m in a millennium is the most rapid period of reef growth (Spalding *et al.*, 2001). Corals grow best in warm, saline, nutrient poor, clear, well lit and shallow waters. Different structural types of coral reefs are distinguished such as fringing reefs, barrier reefs and atolls (Cesar, 2000). The environmental conditions (e.g., temperature, light, wave action, water chemistry) vary considerably by moving across a reef from the shore to the open water (Spalding *et al.*, 2001). This affects the distribution of the different coral species and morphological types within a reef ecosystem and determines the coral reef zonation. Zonation patterns include coastline and intertidal area, lagoon, back reef, reef flat, reef crest, and reefs slope. Because it is the most hospitable environment with limited wave action, the reef slope has the greatest diversity and abundance of life. The coral reefs also vary in terms of species composition and diversity from region to another. The Indo-West Pacific, for example, has the highest diversity and endemism in the different regions (e.g., it has 4–6 times higher fish diversity than the Western Atlantic, Thresher, 1991 cited in Moberg and Folke, 1999). Therefore, the coral reefs

in these different regions may not be equally important with respect to the provision of specific benefits.

39.3.5. *Valuation of coral reef benefits*

Valuation studies have, historically, been skewed towards terrestrial ecosystems and against marine ecosystems. The lack and ambiguity of policy choices, services, property rights and jurisdiction over the marine ecosystems and the thoughts that these ecosystems hold boundless resources tend to explain the publication bias (Ruitenbeek, 1999). A statistical evaluation of the summary findings of the literature was carried out to get a range of potential value of coral reefs. Values from different years were converted to 2006 US$ using the Consumer Price Index, and 66 value observations, from 26 studies, for the different benefits provided by coral reefs were synthesised (Table 39.1). The average value of coral reef was \$210,819 ha^{-1} yr^{-1}. The median value, however, was \$87,170 ha^{-1} yr^{-1}. These estimates seem high compared to the value estimated by Costanza and colleagues in 1997 (\$6,075/ha/yr). The latter value estimate is adopted by the United Nations Environment Program (UNEP). However, it only amounts to 60 cents per square meter which seems low given the multitude of benefits provided by the coral reefs. It also sends a very weak message to the user groups, and is at odds with the markets i.e., a square meter of land in Sharm El-Sheikh can cost upwards of \$1,000. Recently, it has been suggested in the global DIVERSITAS biodiversity conference (Cape Town, 2009) that a single hectare of coral reef provides annual services to humans valued at \$130,000 on average, rising to as much as \$1.2 million.

39.4. A Choice Experiment to Value the Recreational Benefits of Coral Reefs in Ras Mohammed

A visitor survey was conducted between March and August of 2008 to obtain data on the perception, socio-economic characteristics of visitors to Ras Mohammed and their attitudes towards coral reefs. These months represent low and peak seasons for visitors. Because of the diverse nationalities of tourists, English, Italian, Russian and Arabic formats of the questionnaire were used. Completed questionnaires were obtained from 1,200 respondents. The survey was designed under the assumption that there are two distinct populations: International Tourists (IT) and National Tourists (NT). For the IT sample, visitors from 19 countries participated in the survey. The main countries represented in the sample were Italy (42%), Russia (16%), United Kingdom (12%), Poland (8%), France (5%), Germany (4%), Austria (4%),

Table 39.1. Coral reef unit value $ ha^{-1} year^{-1} derived from 26 studies.

	Mean	Median	Minimum	Maximum	Midpoint	Cases
Production Services						
Fishery	537	111	1	3,946	1,974	10
Aquarium trade	10	10	10	10	10	1
Seaweed farming	73	73	73	73	73	1
Ornamental goods	1	1	1	1	1	1
Mining	2,193	2,193	155	4,231	2,193	2
Construction materials	9	9	9	9	9	1
Pharmaceuticals	65,551	65,551	65,551	65,551	65,551	1
	68,374	**67,948**	**65,800**	**73,821**	**69,811**	**17**
Cultural Services						
Recreation	83,645	1,440	4	948,985	474,495	26
Education and research	32	28	2	68	35	4
Option and existence	33	33	33	33	33	1
Artistic inspirational value	1	1	1	1	1	1
Spiritual value	1	1	1	1	1	1
Aesthetic value	64	64	64	64	64	1
Amenity value	274	274	274	274	274	1
Non-use value	16,751	9,276	48	56,893	28,471	5
	100,801	**11,117**	**427**	**1,006,319**	**503,373**	**40**
Regulation Services						
Coastal protection	41,525	7,986	186	195,822	98,004	6
Waste assimilation	99	99	99	99	99	1
Refuge	12	12	12	12	12	1
Biodiversity maintenance	8	8	8	8	8	1
	41,644	**8,105**	**305**	**195,941**	**98,123**	**9**
	210,819	**87,170**	**66,532**	**1,276,081**	**671,307**	**66**

Netherlands (2%), USA (2%), and others (5%). While, the NT sample included participants from 24 governorates mainly from Cairo (20%), Alexandria (12%), Giza (8%), Dakhalia (7%), Ismailia (6%), Sharqia (6%), South Sinai (5%), Monufia (5%), and others (31%).

Table 39.2. Attributes and levels used in the choice experiments.

Attribute	Short name	Levels
Increase in Reef Quality	REEF	No change; 15%; 30%; 45%
Congestion Level	PEOPLE	Usual number; 25% fewer people; 50% fewer people; 75% fewer people
Number of Dive Sites	D_SITES	15; 20; 25; 30
Increase in Entrance Fees	FEES	$5; $10; $15; $20

Sets of options were presented to the visitors to determine how they would like to see Ras Mohammed reef sites managed and which characteristics matter to them. These options were defined in terms of four attributes: reef quality (REEF); site congestion conditions (PEOPLE); number of dive sites (D_SITES); and the possible increase in entrance fees (FEES). These attributes were considered the most appropriate (after pilot testing) for the study objectives and the policy implementation. Four levels were used to secure sufficient variation in the alternative options. Table 39.2 lists the attributes and levels presented in the choice experiments. The attributes of the alternative option were expressed as increments to the current situation. Thus, the values of interest are the additional benefits and costs resulting from the implementation of the alternative policy. The model framework was established in accordance with the concept of change at the margin and consistent with the principles of benefit-cost analysis. (Tawfik, 2010).

The best specification for the attributes was examined and whether they should be linear, nonlinear, interacted with other attributes or with characteristics of respondents. Multiple Wald-tests for linear restrictions were performed to examine the specification of the experiment attributes. The results for the base model (binary logit) were presented before progressing to the random parameters models. Hensher and Greene (2003) considered this sequence is essential to investigate the data, the attributes functional form and the sensibility of the results. It refers to the increase in the behavioural richness and the choice modelling maturity resulting from this progression.

For the binary logit models (Table 39.3), all the attributes are statistically significant and have the expected signs (i.e., higher reef quality, lower congestion, more dive sites and lower entrance fees will result in higher utility level and a higher probability of that alternative option being selected). It is worth noticing that the coefficient of congestion level in NT model is significant at 90% probability level (not 95%). Therefore, whereas the

Table 39.3. Results from logit models.[a]

	International Tourists		National Tourists	
Variable	Coefficient	*P*-value	Coefficient	*P*-value
CONSTANT	−0.993662	0.0000	−0.704863	0.0018
REEF	0.036770	0.0000	0.056975	0.0000
PEOPLE	0.013509	0.0000	0.003217	0.0540
D_SITES	0.031006	0.0001	0.027455	0.0010
FEES	−0.074814	0.0000	−0.088171	0.0000
Log Likelihood	−1492.605		−1392.649	
Chi-squared	339.9700	0.0000	527.0673	0.0000
Hosmer–Lemeshow chi-squared	46.48249	0.0000	48.22675	0.0000
Correct prediction	66.50%		72.25%	
Observations	2,400		2,400	

[a]The logit models were estimated using NLOGIT, version 4.0 (Greene, 2007).

international tourists prefer less people at reef sites, this attribute is not highly significant among national tourists. The elasticity for fees attribute is calculated as −0.44 and −0.49 for IT and NT respectively. However, it is relatively inelastic (<1). For the park management, this suggests that the revenue gained by any increase in the entrance fees will outweigh the negative impacts the fees increase will bring. In order to distinguish between respondent segments, identify which attributes are perceived to be valuable for different visitor types and investigate the impact of socio-economic characteristics on the model parameter values and welfare estimates, the results were conditioned on these characteristics. In the IT model, the WTP for higher reef quality is greater when the respondent is male, old, a member of an environmental organisation, has high income, has a small family, or visits the reef sites only in Ras Mohammed. Also, the highest WTP values are for the visitors from the UK and the USA. For NT, the respondents hold diving certificate, have snorkelling skills, are females, young, or graduates are WTP more for improving reef quality. In addition, the respondents from Dakahlia and Ismailia have the greatest WTP whilst the lowest WTP values are for respondents from South Sinai and Monufia.

Impacting on the marginal rates of substitution between attributes, the heterogeneity should be included in the model to obtain efficient estimates of choice model parameters. The preference heterogeneity could be defined by the random parameters through the standard deviations and through the

interactions with other attributes and individual characteristics (Hensher *et al.*, 2005). Five specifications of random parameters were estimated in which (1) the underlying attribute parameters were randomised (RPL1); (2) the heterogeneity around the mean was considered (RPL2); (3) the heteroskedasticity of the standard deviation was allowed (RPL3); (4) the correlated parameters were incorporated (RPL4); and (5) the distribution of random parameters was constrained (RPL5). Using a likelihood ratio test, the null hypothesis of parameter consistency across the models was rejected in the comparison between the binary logit model and the random parameter models.

There are different methods to derive WTP estimates. They could be calculated by the ratios of population means. However, the resultant values are derived from the coefficients of the average individual for each parameter and are not the mean values of WTP and should not be used in cost-benefit analysis (Sillano and Ortúzar, 2005). Furthermore, if the underlying parameters are estimated as random parameters, then the WTP calculations should consider this specification. Using the ratios of population means to derive WTP values ignores the sampling variance makes the extra estimation effort ineffectual. In addition to such point estimates, the WTP could be derived using all the information in the distribution. Simulation is used in this way, drawing from the estimated covariance matrix for the parameters (Hensher and Greene, 2003). The mean WTP is calculated for each draw and this process is repeated for many draws. That provides the estimated mean WTP (the means of the ratios). The foreign tourist is WTP an extra \$0.5 for each 1% increase in the reef quality, \$0.2 for each 1% decrease in the congestion level and \$0.4 for each additional dive site while the national tourist is WTP an extra LE0.7 for each 1% increase in the reef quality, LE0.05 for each 1% decrease in the congestion level and LE0.3 for each additional dive site (the exchange rate in August 2008 was \$1 = LE 5.5). Based on the total number of visitors to Ras Mohammed of 495,382 (471,142 international tourists and 24,240 national tourists) in the year 2008–2009 (EEAA, 2009), the annual WTP on top of the existing entrance fees was estimated to be \$238,656 for each 1% increase in the reef quality, \$94,994 for each 1% decrease in the congestion level and \$189,779 for each additional dive site. The WTP for a scenario includes improving the reef quality by 30%, reducing the number of people at the reef site by 50%, and increasing the number of dive sites to 25 sites (i.e., an approximate average of least incremental increase scenario and highest incremental increase scenario) was \$13.7 million (\$13.6 million for IT and \$0.1 million for NT) for the year 2008–2009.

39.5. Ras Mohammed Site and Management Issues

39.5.1. *Tourism development in South Sinai*

The economy of South Sinai is highly specialised; it mainly depends on tourism, in particular, on scuba diving. Sharm El-Sheikh, for example, is the most popular city in South Sinai and was awarded the title of best global destination for diving in 2007 by the World Travel Awards. Ecotourism and the existence of coral reefs and protected areas are closely correlated and form the cornerstone of the local economy of South Sinai. The vast majority of visitors (73%) to all the South Sinai destinations felt, in a tourism survey in 2004, that the aspect that they most enjoyed was the Red Sea and more specifically the coral reefs (SEAM, 2004). The growth in infrastructure and facilities reflects the rapid expansion of the region as a tourism destination. In 1989, there were just 13 hotels in South Sinai with a total of 1,150 rooms. By 2007, the number of hotels had increased to 233 with almost 48,000 rooms representing 22% of the total hotel accommodation capacity in Egypt (TDA, 2010). There are indicative plans to expand the hotel room capacity to 274,000 rooms by 2017 (SSRDP, 2008). There are 131 dive operators and nine aqua centres that offer non-diving water sports activities and are members of the South Sinai Association for Diving and Marine Activities (SSRDP, 2008). The number of travel agents with head offices in South Sinai is 24 (SSRDP, 2008). Establishing the required infrastructure and supporting services served as the nuclei to create new communities and diverted many small businesses away from the densely populated Nile Valley. The total number of people employed in hospitality and tourism in South Sinai reached 60,000 in 2007 (SSRDP, 2008). The limited employment opportunities in Egypt nationally, emphasise the importance of ecotourism to the local economy.

A total of 2.8 million tourists visited South Sinai in 2006 (SSRDP, 2008). The share of the national market was around 20% while the international market represented 80%. Therefore, overseas tourists have been the lynchpin of the growth. Until the end of the last decade, the market of South Sinai was dominated by northern Europeans. The Italians and Russians moved in to dominate the region in the subsequent years. The average length of stay for visitors in Egypt is around one week and they spend an average of $130 a day (Central Bank of Egypt statistics). Accordingly, the total gross revenue through ecotourism was estimated at $2.54 billion in 2006. In addition, the governorate of South Sinai collects several direct and indirect taxes from the financial returns on tourism (e.g., room tax, boat permit). Without world class diving at Ras Mohammed, South Sinai would receive

many fewer visitors. A tourism survey carried out in 2004 highlighted the importance of Ras Mohammed, with 64% of South Sinai's tourists stating that they were visiting Ras Mohammed during their holiday (SEAM, 2004).

It is estimated that by 2017, there will be 6.8 million tourist arrivals to South Sinai (SEAM, 2004). Promoting mass tourism in South Sinai, rather than developing niche markets and maintaining the region as a centre of excellence attracting classic divers and elite tourism, is considered a short-term strategy that will not ensure the sustainability of the tourism industry. The lack of a comprehensive tourism development plan coupled with the policies of the Tourism Development Authority promote an unhealthy competition to expand the built environment, propagate the high-volume approach (in which numbers only count), impose further pressure on prices and ignore the impact of the rapid expansion on the environment and on tourism in South Sinai in the long run. The present status of market imperfection, price manipulation policies and questionable governmental strategies has led to low economic yields from this important industry. These problems highlight the need for changes in the type and style of tourism development.

Planning for tourism is an amalgam of economic, social and environmental considerations, and an integrated approach to tourism planning should take into account all three areas. Figure 39.3 shows three possible scenarios

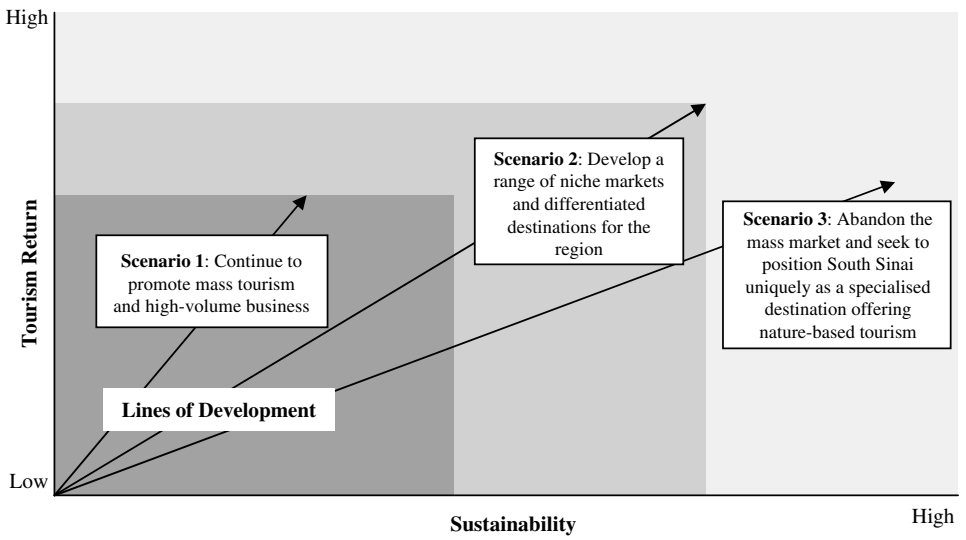

Fig. 39.3. Tourism development scenarios for South Sinai (adapted from SSRDP, 2008).

for future tourism development policy in South Sinai. Only scenario 3 encapsulates a long-term planning perspective and sustainability thinking. Development should not conflict with resource conservation. Rather, it should support it because nature-based tourism relies on the continued condition and health of these resources. Moreover, tourism is the only engine of growth in South Sinai, and thus it would be prudent to make every effort to mitigate the causes of coral reef and marine life damage.

39.5.2. *Impact of tourism*

Over the last two decades, the impacts of human activities on coral reefs have escalated in South Sinai. Increasing levels of sediments from coastal development, dredging and land reclamation plus the nutrient enrichment from human waste degraded the reef in many places. The large number of tourists resulted in great disturbance to the marine life. Activities such as diving, snorkelling, trampling, sports fishing, fish feeding, boating and anchoring impose direct destructive effects on the reef system. The respondents in this study attributed the reef decline at some sites in Ras Mohammed to walking and standing on the reef (30%), lack of awareness (27%), mass tourism (25%), pollution and waste (15%), boat accident (13%), overfishing (6%), natural threats (5%), and other reasons (2%). Diving was mentioned as a purpose for a visit by only 31% of IT (18% of NT), while snorkelling represented 71% for IT (34% for NT). 33% of IT (28% of NT) hold diving certificate and 89% (70% of NT) have snorkelling skills. The number of dives and snorkelling times ranged from 7–9 times on average for the two sets.

39.5.2.1. *Diving impacts*

Fifteen contacts with corals per m^2 per year were reported at heavily dived sites around Sharm El-Sheikh (Medio, 1996). Direct impacts due to kicks by divers' fins were a major cause of coral injury (PERSGA, 2003). However, not all divers impact on the reef equally, more experienced divers (i.e., with better buoyancy control and reef etiquette) are much less damaging than the novice diver (Dixon *et al.*, 1993). Therefore, the diving impact depends on the diver behaviour as well as diver numbers (Clarke *et al.*, 1995 cited in Davis and Tisdell, 1996). Salm (1985, 1986) demonstrated that underwater filming and taking of photos during a dive increased the tendency of a diver to make accidental contacts with the substrate. 26.6% of divers using cameras and/or videos were responsible for 72.4% of all contacts (Medio, 1996). In addition, there are other factors affecting the number of contacts between diver and the substrate such as the topographic characteristics of

the dive site (e.g., sites that are characterised by gentle reef slopes are more susceptible to diver contacts than the steep reef walls), the current and wave action (e.g., the tendency of divers to hold on to reefs increasing in exposed sites), and awareness and appreciation of marine life (e.g., many divers find it ethically unacceptable to damage corals). In this study, divers were shown to have a greater knowledge about coral reefs compared to snorkelers or respondents who neither snorkelled nor dived. However, when divers were asked about the highest level of diving certification they hold, 41% stated that they hold open water, 36% advanced open water, 9% rescue diver, 8% dive master, and 6% instructor. Given the high percentage of novice divers, it becomes apparent how important it is to require all dives to be led by guides and preceded by environmental awareness briefings.

39.5.2.2. *Snorkelling and trampling impacts*

With increasing numbers of visitors engaging in snorkelling rather than diving activities, trampling on shallow reef flats has become a major threat to the coral reefs. Hawkins and Roberts (1993) found lower coral cover and higher rates of breakage, rubble and loose fragments on reef flats subject to trampling. In Ras Mohammed, Leujak (2006) investigated the impact of reef walking on coral assemblages at Main Beach and Yolanda Bay. She noticed that walkways received the highest amount of tramplers (324–383/m^2/year), followed by the contiguous stations to walkways (97–114/m^2/year), and then control stations furthest from the walkways (1.3–3.8/m^2/year). Abrasions (0.5–0.04%) and flattened colonies (0.8–0.03%) were significantly more common at sites with high trampling intensities. Based on four minutes of reef walking activities, each trampler was estimated to damage on average 0.0008 m^2 of coral, with those wearing fins causing proportionally more contacts with the substrate. The amount of coral broken per year was estimated to be between 47 and 97 kgs attesting to the large impact of trampling. Main reasons for reef-flat walking were 23.6% gear adjustment, 23.6% gear adjustment combined with talking, 19.3% crossing the reef flat, and 10.7% crossing combined with talking. Significantly higher amounts of damage were found to occur at very low tides due to the difficulty of crossing the reef flat by snorkelling. Coral cover remains high up to 50 tramplers/m^2 and dropped rapidly beyond this threshold. However, this number depends, among other things, on the environmental awareness and the snorkelling skills of visitors. Visitors were asked how they describe their skills in snorkelling. Only 11% of foreign tourists characterised their skills as poor or very poor, but this percentage increased to 30% for national tourists. Therefore, it is very

important for the park management to designate walkway areas to restrict the movements of snorkelers, ban the wearing of fins in the snorkelling sites, and close the sensitive reef flat sites during the spring tides.

39.5.2.3. *Determinants of demand for reef sites*

The demand for reef sites is a function of many variables such as price (e.g., entrance fees), environmental quality (e.g., reef health, aesthetic value, marine life, visibility), conditions at the site (e.g., surface conditions, current), ease of access, and the availability of substitutes (Davis and Tisdell, 1995, 1996). In addition to the previous attributes, the characteristics of individuals are another source of influence on choice behaviour. In this study, the vast majority of IT and NT (96%) felt the most important feature of their visit to Ras Mohammed was the reef quality. The level of congestion was identified as an important factor by 82% of IT and 75% of NT while 80% of IT and 89% of NT were interested in the number of dive sites.

39.5.2.4. *Management interventions*

The park management needs to monitor and react to a variety of changes pertinent to tourism in the area. These include internal factors (e.g., products, facilities) and external ones (e.g., development activities and conditions in South Sinai), the changes caused by tourism and by management actions themselves. There are many tools that can be used to monitor tourism impacts such as patrols by rangers, tourism surveys, and reports from tour operators, local communities, hotels, tourism and coastal police, and city council. Moreover, some new management measures need to be implemented to reduce visitor impacts and to maintain coral reefs, such as controlling the coastal development (built environment) in Sharm El-Sheikh, promoting more environmentally friendly behaviour through public awareness campaigns, decreasing the number of visitors and distributing them between dive sites to alleviate the pressure on the popular sites. The authorities also need to encourage the improvement of environmental education among divers and snorkelers through briefings, orientations and encouraging improved buoyancy control and reef etiquette. They could stipulate that all dives have to be led by guides, restrict the number of dive boats and limit those specialised diving activities which have greater impact on the coral reef (e.g., underwater photography, night diving). Access management is another important measure e.g., restricting certain dive activities to appropriate sites, restricting high impact uses (access limitations, moorings), containing recreational

use (walkways, swimming pontoons), and developing monitoring programs for all the dive sites in the region not only inside the park to ensure that the coral reefs will continue to attract tourists in the future. To enable all these measures, the park management can use a combination of different instruments ranging from prescriptive regulations through to direct market mechanisms. For example, the management can reallocate divers among sites through direct means such as placing a limit on diver numbers, or introducing a licensing system, or through indirect interventions such as varying the ease of access to reef sites (Davis and Tisdell, 1996). Such sophisticated management strategies should be developed in order to ensure sustainability. There remains the question of how we measure whether or not a system is sustainable.

39.5.3. *Carrying capacity*

Ras Mohammed is attractive because its unique coral reefs are enhanced by its protected status. It is successfully marketed as a tourist destination by tour operators and diving centres. However, if the impacts of the mass tourism on the reef are not considered, much of Ras Mohammed's attraction will eventually be lost along with the associated revenues. This raises the questions: How many tourists on a reef are too many? What is acceptable in terms of diver-induced damage and what is not? Carrying capacity is a term which has been used to describe the level of visitation (or the amount of use) an area can receive (tolerate) beyond which its ecosystems would be significantly altered or degraded (Davis and Tisdell, 1996). The ecological carrying capacity estimation of the coral reefs depends on biological assessment of the reef and addresses some measures such as coral cover, diversity indices and evidence of physical damage. Meanwhile, social carrying capacity evaluation concentrates on visitor perceptions towards site attributes such as reef quality and the congestion level, i.e., how much use is acceptable without leading to a decline in visitor numbers (Davis and Tisdell, 1995).

39.5.3.1. *Ecological carrying capacity*

It appears that visitation at many sites in Ras Mohammed had already exceeded the local carrying capacity. The carrying capacity was estimated to be between 10,000 and 15,000 divers per year per site (Hawkins and Roberts, 1994; Abou Zaid, 2002). Based on the number of available dive sites (15 inside the old boundaries plus 25 in Tiran and the local area), the annual carrying capacity for Ras Mohammed is estimated at 225,000 dives

(600,000 for all dive sites in the area). The number of visitors was 495,382 in 2008–2009 (Income Unit, South Sinai Protectorates). More than one million dives are undertaken yearly within the area between Ras Mohammed and the strait of Tiran (PERSGA, 2003). This diving pressure is not distributed equally among the established dive sites. Some dive sites receive a huge number of visits annually (e.g., Shark Reef, Jackson Reef, Ras Umm Sid) while others are not used any more by most of the diving operators (e.g., Fiasco, Paradise, Turtle Beach, Amphorus, Pinkys Wall, Tiger Bay). Some dive sites are now receiving over 60,000 dives annually (PERSGA, 2003), well above the recommended carrying capacity. In a recent study, Leujak (2006) estimated the total visitor numbers at Yolanda Bay and Main Beach, the most popular beaches to visitors from land, at 83,868 (230/day) per year for the former and 75,280 (206/day) per year for the latter. With such levels of visitation, a rapid loss of coral cover and reef biodiversity can be expected.

Calculations of carrying capacity, however, can be inaccurate or ambiguous because of a number of limitations such as hidden value judgements, the variation between sites, the reliance on and outcome variation between the methods used to assess reef health, the difficulty of establishing predictable linkages between use levels and impacts, the dependence on the coral reef characteristics which are being assessed, and the influence of the behaviour (not only the number) of visitors on the recreational use. Dixon *et al.* (1993) noted that it may be possible to increase the stress threshold through user education and improved management. Medio *et al.* (1997) found that a single environmental awareness briefing reduced the rate of divers' contact with reef substrates from 1.4–0.4 and the rates of contact with living corals from 0.9–0.15 contacts per diver per 7 minutes.

39.5.3.2. *Social carrying capacity*

Shelby and Hebelein (1986) noted that the social carrying capacity of a site is exceeded when more than around 66% of visitors feel crowded. Based on the interviews with visitors, 40% of IT and 31% of NT felt crowded and expressed their dissatisfaction with the level of congestion at Ras Mohammed. Crowding may rely on several factors. Our survey showed that the individual characteristics had an effect on crowding perception. Respondents who were repeat visitors, visited the reef sites only in Ras Mohammed, held a diving certificate, had snorkelling skills, had more knowledge about coral reefs, were older males, had higher education, were a member of an environmental organisation, had high income, or had a small family, were

more susceptible to concerns about crowding. Furthermore, crowding was perceived differently by different nationalities. The respondents from lower population density countries (e.g., Russia, USA) or governorates (e.g., Sohag, Sinai) were more sensitive to crowding conditions than those from populous countries (e.g., Netherlands, Germany) or governorates (e.g., Cairo, Alexandria). Because of these significant differences in perceptions, diversity in use-density opportunities is needed to satisfy visitors. Although the literature on recreation and quality standards has predominately focused on crowding and ecological impacts, some authors (e.g., Ormiston *et al.*, 1998) added the levels of facility development. 32% of IT and 61% of NT affirmed that Ras Mohammed needs more facilities such as toilets and showers, shelters, and cafeteria. 15% of the respondents reported that Ras Mohammed is lacking staff and patrols. The access to some sites is difficult due to the unpaved roads and this was confirmed by 6% of the respondents. 10% of the respondents referred to the paucity of signs and 6% to the paucity of brochures.

Ras Mohammed has been experiencing a dramatic increase in visitor numbers over recent years. Crowding might already negatively influence visitors' enjoyment at certain sites. However, in other sites where biological critical thresholds were exceeded, the social carrying capacity was not exceeded indicating that the agreement between perceptions and the actual amounts of damage tend to be weak. Four reasons for this result may be suggested. First, Ras Mohammed is home to some of the best known SCUBA diving areas in the world and many dive centres have it on their 'must visit' list. Second, the park is near to the city of Sharm El-Sheikh which is a very popular holiday destination. Third, many visitors may be less averse to reef site degradation because they were visiting the park for the first time (only 9% of IT and 37% of NT cited this visit as a repeat visit) or they could not make comparisons with other reef sites (only 39% of IT and 28% of NT indicated that they had visited other reef sites in Egypt; and 21% of IT and 3.5% of NT had visited reef sites in other countries within the last year). Finally, Ras Mohammed at present is experiencing a shift towards a visitor who is less environmentally aware, less concerned about congestion or degradation of environment, and is more detrimental to reefs, because of the poor snorkelling abilities and a higher degree of carelessness.

39.5.4. *Policy scenarios valuation*

Complex decisions are based on several factors considered jointly rather than on one factor. The choice experiment (valuation) method can help identify

tradeoffs visitors are willing to make and provide managers with a more predictive understanding of how visitors are likely to change their behaviour in response to different scenarios. In other words it can be used to better understand preferences and predict behaviour. Once preferences were determined, policy scenarios depending on WTP estimates could be designed. In order to understand how visitors would react to various combinations of coral reef conservation management strategies and estimate the relative importance for each of them to visitors, a set of four scenarios involving changes in attribute levels were analysed. For objective comparison purposes, increase in reef quality (REEF) was held constant for all scenarios. Scenario A represents the status quo conditions (i.e., SQ Congestion,

Table 39.4. Values used to estimate the annual costs and benefits (in US dollars) of the different scenarios.

People dive sites	Scenario A usual number 15	Scenario B usual number 25	Scenario C 50% fewer people 15	Scenario D 50% fewer people 25
Population				
IT	471,142	471,142	235,571	235,571
NT	24,240	24,240	12,120	12,120
CS[a]				
IT		1,884,568	2,355,710	3,297,994
NT		13,222	5,509	12,120
		1,897,790	2,361,219	3,310,114
Entrance Fees[b]				
IT	2,355,710	2,355,710	1,177,855	1,177,855
NT	22,036	22,036	11,018	11,018
	2,377,746	2,377,746	1,188,873	1,188,873
WTP	2,377,746	4,275,536	3,550,092	4,498,987
Management Expeditures[c]	300,000	500,000	300,000	500,000
Opportunity Cost[d]	—	1,092,000	—	1,092,000
Net Benefit	2,077,746	2,683,536	3,250,092	2,906,987

[a]The aggregated consumer surplus was calculated by using the results of RPL models for the two sets of tourists and the number of visitors in the year 2008–2009.
[b]Based on $5 for foreigners and LE5 for Egyptians.
[c]Based on the expenditures of Ras Mohammed in 2006–2007 adjusted to the financial year 2008/09. Increasing the number of the dive sites to 25 will increase expenditures by 67%.
[d]Based on the carrying capacity of the diving site and the literature synthesis, the opportunity cost was calculated in terms of keeping the proposed sites as 'preservation zones' or 'scientific research zones'.

SQ Sites), Scenario B includes more sites for the same number of people, Scenario C includes less people for the same sites and Scenario D includes more sites and less people. These scenarios vary from less (A, B) to more restrictive (C, D). Less people represents reducing the number of visitors by 50% while more sites means increasing the number of dive sites to 25 sites. These levels represent approximate averages of the least incremental increase scenario and highest incremental increase scenario in the choice experiments.

Based on the number of available dive sites (15 sites), the annual carrying capacity for Ras Mohammed was estimated to be between 150,000 and 225,000 visitors. The number of visitors was 495,382 in the year 2008/09 (EEAA, 2009). Therefore, Scenario C (less people, same sites) meets the less restrictive carrying capacity (15,000/yr/site — Abou Zaid, 2002) while Scenario D (less people, more sites) meets the more restrictive carrying capacity (10,000/yr/site — Hawkins and Roberts, 1994). Table 39.4 shows the values that were used to estimate the costs and benefits of the different scenarios.

The challenge is to manage the short-term pressures and re-orientate the quantity and quality of the tourism to better fit a longer-term vision of sustainable tourism in Ras Mohammed. The results show that Ras Mohammed

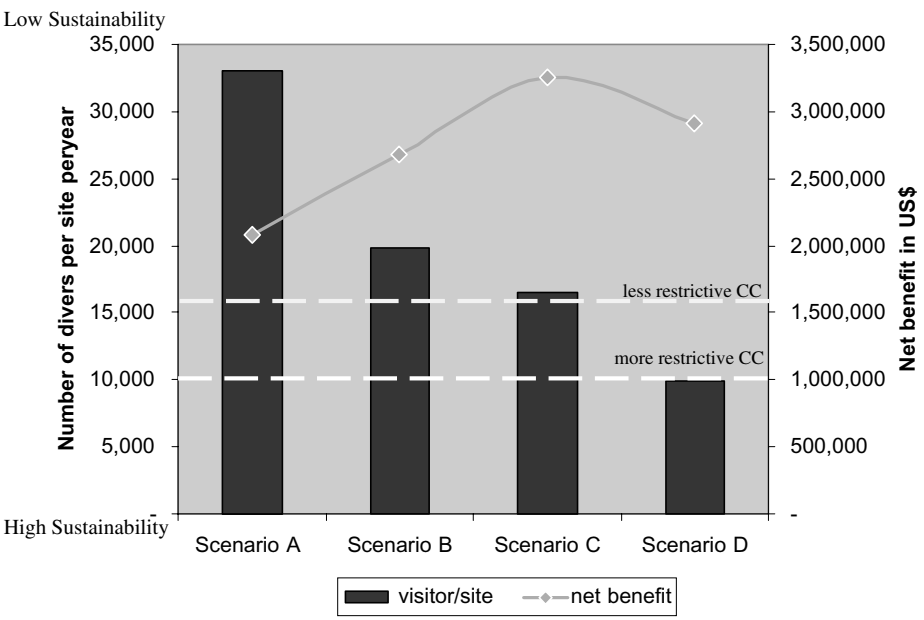

Fig. 39.4. Net benefits of proposed scenarios holding the reef quality constant.

National Park under any of the scenarios presented yields an economic efficiency gain. However, sustainability scenarios (C, D) yield higher net benefits than business-as-usual scenarios (A, B). Also, by incorporating the opportunity cost of opening more dive sites in the park, Scenario C produces the highest net benefits (Fig. 39.4). The difference in value between 'towards sustainability' scenarios and 'business-as-usual' scenarios seems to be sufficient to justify the commitment to conserve and manage the reef ecosystems.

39.6. Discussion and Conclusions

The coral reefs ecosystem is the greatest asset Ras Mohammed has, and it is what it is selling to the world market. The park management needs to understand the visitor preferences to maintain or increase visitor benefit while protecting the ongoing integrity of the reef ecosystems. The choice experiments method was used to analyse preferences of national and international tourists towards the conservation of coral reefs at Ras Mohammed and to investigate the contributions of attributes of alternatives and characteristics of individuals to elucidating choice behaviour. This can help in incorporating such preferences into the design and the further development of the park management plan. Both sets of tourists preferred high reef quality, low congestion, more dive sites and low entrance fees. The study attempted to incorporate the main advances in the area of discrete choice analysis. The results indicate that the approach outperforms the random parameter models. The WTP for every individual can be retrieved by utilising these models and the distribution of these values proved to be more informative than the single values of mean estimated by the basic models. Based on the results presented in this study the attribute that the visitors attach the highest value to is reef quality which indicates the importance of maintaining this feature in order to keep the popularity of Ras Mohammed as a tourist destination.

The management of Ras Mohammed needs to plan for the increasing number of visitors and monitor their relative impact rates on the reef system in order to sustain its services and benefits. The need for these actions is of utmost urgency, the more the stress, the higher the probability of catastrophic change in the status and value of the reef. Visitors' footprint on coral reefs should be stabilised at a point where sufficient space, time, and resources remain to sustain the resilience of the ecosystem and the species it supports to cope with the resultant impacts from utilisation or interaction. In addition to the biological issues, the park management should take into

account the social and economic factors. The aim should always be to ensure the quality of both the reef and the experience of visitors using it.

The ecosystem services approach can help to scope, model and integrate the different ecological aspects of the reef system with associated ecosystems (e.g., mangroves, seagrass beds) and the prevailing social and economic systems. It also can help to understand what values are lost when the coral reefs are destroyed, assess the threats and the driving forces behind them, identify the beneficiaries and impact factors at the different scales, estimate the benefits of conservation and the costs of degradation, and propose policies and management strategies. The knowledge and understanding of the science of coral reefs is a cornerstone of management. But unless the value of the sustainable ecosystem benefits provided by protected coral reefs is better estimated, it will be difficult to convince policymakers in Egypt to consider the long run impacts of tourism and development on reefs.

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AUTHOR INDEX*

ABC, 308, 314, 421, 423, 425
Abernathy, W, 318, 336
Abeysinghe, T, 115, 118
Abou Zaid, M, 931, 935, 937
Aboudha, PA, 366, 384
ABS, 301, 450, 457, 494
AC Pigou, 802
Accor, 181, 183, 184, 188, 751, 753, 754
Acosta-Gonzalez, G, 782
Adam, S, 37, 102, 139, 492
Adamowicz, J, 384
Adamowicz, WL, 367, 384
Adams, 318, 319, 336, 472–475, 488, 489, 506, 511, 519
ADB, 742, 755, 756
AECOM, 446, 464
Agarwal, 140, 160, 163, 165, 548, 567
Agndal, H, 150, 153, 159, 161
Aguilar, F, 847, 851, 860, 864
Aguirre, SZ, 637
Ahmt, T, 545, 548, 568
Airey, D, 429, 438
Aislabie, CJ, 65
Aitken, B, 176, 188
Ajzen, I, 378, 381, 384
Akella, A, 868
Akinboade, OA, 631, 636
Álavarez-Gil, MJ, 150, 161
Albaum, G, 103
Aldenderfer, MS, 93, 101
Alexander, LM, 545, 567
Alexander, N, 153, 154, 161
Ali, S, 937
Allen, 277
Allen, K, 840
Allen, RC, 232, 233, 242, 243, 251
Allen Consulting Group, 463, 465
Almeida, VMC, 169
Alsarayreh, MN, 125, 132
Alston, J, 63, 64
Altinary, M, 545, 547, 568
Altinay, L, 150, 157, 161, 167
Altman, 335, 336, 797, 808
Alvares, C, 692, 694, 696, 697, 702
Álvarez-González, JA, 568
Amiti, M, 577, 600
Amorim, C, 150, 161
Anastassopoulos, G, 153, 161
Anderson, E, 141, 161, 165
Anderson, G, 69, 75, 82
Andersson, J, 260, 277
Andersson, P, 150, 161
Andreu, R, 168
Angle, PS, 688, 702
Anning, D, vi, 361, 388
Anon, 131, 132, 443, 815, 840
Antonucci, R, 349, 356
ANZECC, 434, 438
Apostolides, AD, 238, 251
Appleby, J, 291
Arabie, P, 95, 101, 103
Arbache, JS, 489, 678
Archer, 544–547
Arias-Gonzalez, JE, 782
Arima, T, viii, 26, 27, 885, 888, 894, 908, 910
Arlt, W, 304, 314
Armstrong, G, 102, 815
Arndt, SW, 577, 579, 600
Arnegger, J, 570
Arrow, KJ, 60, 61, 377, 383, 384
Artus, JR, 42, 61
Aryal, K, 847, 864
Ashley, C, 747, 758
Ashley, GA, 568

*Entries relating to institutions/organizations are listed in both Author Index and Subject Index.

Ashworth, JS, 911, 937
Askitas, N, 287, 294
ASPE Research Brief, 294
ASTA, 192, 193, 196, 204
Atiyah, P, 387
Attfield, CLF, 75, 82
AusAID, 742, 744, 756
AusPost, 448, 465
Australian Bureau of Statistics (ABS), 300, 301, 314, 375, 448, 465
Australian Taxation Office (ATO), 449, 465
Aydin, N, 536, 540
Aylward, B, 435, 439, 819, 840
Ayuso, S, 847, 864
Azahari, O, 434, 439

Baade, R, 412
Baaijens, SR, 548, 568
Bacha, EL, 622, 636
Bain, J, 140, 161
Baird Review, 314
Bakas, F, 846, 848, 864
Baker, L, 275, 278, 287, 294
Bakkal, I, 61, 68, 69, 73, 82
Balaguer, J, 630, 636
Balassa, B, 575, 588, 589, 600, 601, 622, 623, 636
Baldwin, R, 577, 582, 600
Ball, D, 151, 161
Ballantyne, R, 262, 278, 874, 878, 882, 883
Bandera, VN, 147, 161
Banegil, T, 846, 864
Bansal, S, 147, 164
Banzhaf, 386, 916, 918, 937
Bao, 440, 726, 736, 740
Barbaro-Forleo, G, 866
Barbier, E, 810
Barendregt, A, 940
Bar-Hen, A, 296
Barnett, 57, 61, 847, 864
Barras, R, 274, 277
Barro, SC, 385
Barron, 296
Barten, AP, 44, 52, 56, 57, 60, 74, 82
Bastakis, C, 202, 205
Bastianoni, S, 841
Bateman, IJ, 364, 384, 388, 448, 465
Battalio, R, 274, 278, 330, 336
Baum, T, 153, 161, 222, 548, 566, 570
Baumol, W, 16, 29, 264, 277, 778, 782
Bayfield, NG, 806, 808
BBC, 284, 294
Beale, D, 462, 466
Beamish, PW, 138, 161, 263
Bechdolt, B, 238, 252
Becherel, L, 677, 681
Becker, E, 828, 840
Beckermann, W, 143, 161
Beckmann, I, 341, 358
Beer, C, 937
Belloumi, M, 631
Belt, M, 385
Benedetto, G, 783
Benedictis, 588, 601
Bennett, J, 370, 388, 674, 679, 873, 882
Bergeron, 866
Bergson, A, 59, 62, 420, 439
Bergstrom, JC, 545, 547, 568
Berndt, ER, 50, 62, 74, 82
Berneron-Couvenhes, M-F, 339, 340, 347, 356
Bernhardt, JM, 297
Bernheim, BE, 61
Berno, T, 751, 756
Bertazzoni, S, 358
Bethencourt-Cejas, M, 568
Betts, K, 315
Bezbaruah, MP, 706, 722
Bhagwati, JN, 37, 62, 601, 623, 636
Biederman, P, 237, 238, 252
Bieger, T, 206, 209, 210, 221, 413, 603, 680, 681
Biehn, T, 353, 357
Bien, A, 846, 864
Bierman, H, 412
Billiet, J, 104
Billington, N, 140, 162
Bingham, G, 363, 384
Binning, C, 914, 937
Birch, DW, 285, 294
Birrell, B, 308, 315
Bishop, RC, 369, 384
Bisigniani, G, 209, 222
Björkman, I, 149, 150, 152, 162
Blackorby, C, 49, 62
Blackwell, B, vi, 16, 384, 386, 443, 444, 447, 448, 466
Blake, A, 472–480, 482–485

Blashfield, RK, 101
Blinder, AS, 577, 600
Blomstermo, A, 150, 151, 162
Blundell, RW, 69, 75, 82
Blust, 192, 205
Blyth, E, 284, 294
Boardman, A, 395–398, 400, 401, 403, 410, 412
Bockstael, N, 873, 882
Bohdanowicz, P, 752, 757, 847, 864
Bohlen, G, 865
Bohlmann, HR, 474, 482, 483, 489
Bond, L, 361, 388, 466, 937
Bonham, C, 247, 252
Bonn, MA, 548, 568
Bookman, KR, 285, 294
Bookman, MZ, 285, 294
Booz, 265, 277
Böhringer, C, 506, 519
Boskovic, D, 357
Bostrom, N, 817, 840
Boumans, R, 937
Boumans, RMJ, 388, 938
Bowitz, E, 545, 568
Bowker, JM, 386
Bowles, J, 6
Bowles, S, 29
Boxall, 370
Boxall, PC, 384
Boyd, J, 916, 918, 937
Boyle, KJ, 384
Boyle, S, 383
Boylem, S, 295
Bozec, YM, 768, 782
Bracalente, B, 270, 277
Bradley, M, 868
Bradly, AP, 752, 757
Braimoh, LA, 631, 636
Bramwell, B, 794, 798, 808
Branger, B, 295
Brau, R, 632, 633, 637, 640
Braun, B, 264, 277
Braun, BM, 545, 547
BREA, 355, 356
Breda, Z, v, vii, 8, 21, 137, 150, 154, 155, 158, 159, 162, 170, 683, 704
Breiter, M, 402, 413
Breusch, TS, 112, 118
Brida, JG, 355, 357, 631, 637, 640
Britton, S, 747, 757
Brody, M, 384
Broe, ME, 295
Bromley, D, 384
Bromley, DW, 384, 882
Brown, JAC, 58, 62
Brown, K, 270, 277
Brown, L, 102
Brown, R, 882
Brown, RPC, 883
Brown, TC, 383–385
Bruno, M, 622, 637
Brunt, P, 570
Bryden, JM, 647, 661, 678, 788, 808
Buchta, C, 96, 97, 101
Buckley, PJ, 141, 147, 148, 152, 153, 162
Buckley, R, 846, 849, 863–865
Budiani-Saberi, D, 284, 294
Budowski, G, 432, 439
Buhalis, D, 194, 202, 205, 221, 222
Bull, A, vi, 13, 339, 340, 342, 344, 351, 353, 357, 359, 395, 403, 412, 568, 645, 646, 658, 670, 678, 808
Bundorf, MK, 294
Bunting, J, 868
Buol, SW, 902, 908
Burgan, B, 394, 399, 407, 412, 446, 465
Burgess, C, 153, 162
Burgman, M, 914, 937
Burkart, AJ, 577, 601
Burns, AF, 228, 252
Burns, P, 648, 678
Burton, R, 686, 702
Burton, RCJ, 805, 809
Busby, G, 570, 789, 809
Buse, A, 57, 62
Business Research and Economic Advisors (BREA), 357
Busuttil, L, 218, 223
Butler, RW, 10, 29, 208, 212, 222, 225–230, 243, 248, 250, 252, 655, 659, 678, 686, 702
Butler, JR, 799, 809
Butler, R, 205

Cain, LP, 249, 253
Calvert, EO, 758
Calvet, AL, 140, 162
Calvo, P, 602, 775, 783
Cambre, B, 104
Campbell, JB, 101

Campbell, R, 784
Campbell-Hunt, C, 145, 162
Canada, 316
Canfield, C, 637
Cantavella-Jordá, M, 630, 636
Caralt, J, 279
Carbajal, E, 637
Cardone-Riportella, C, 161
Carey, G, vii, 20, 34, 62, 619, 641
Caric, H, 355, 357
Carlos, A, 74, 83, 170, 572, 704
Carlsen, J, 439, 874, 881, 882
Carr, DL, 188
Carson, RT, 368, 387, 873, 882
Casson, M, 141, 147, 162
Castro, EA, vii, 19, 543, 572
Čavlek, N, vi, 9, 191, 202, 205, 206
Ceballos-Lascuráin, H, 829, 840
Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), 601
Centre for Agricultural and Regional Economics, 874, 875, 882, 883
CEPII, 590–592, 595–599, 602
Cerina, F, 627, 637
CES, 692, 702
Cesar, H, 920, 937
Cesare, FDi, 358
Chafe, Z, 849, 859, 864
Chaiken, S, 378, 385
Chakravorty, U, 492, 572
Chalfant, JA, 59, 62
Chamorro, A, 846, 864
Champ, PA, 384
Chang, T, 277
Chao, C-C, viii, 19, 20, 605, 615–618
Chao, Y, 862, 864
Chapman, DJ, 375, 385
Charlier, J, 343
Chattopadhyay, K, v, 7, 121, 124, 125, 132, 133, 722
Chaudhary, P, 864
Chen, CF, 632, 637
Chen, JJ, 153, 155, 157–159, 162, 164
Chen, GM, 190
Chen, M, 638
Chenery, HB, 622, 637
Chetty, 145, 162
Cheung, P, 321, 337
Cheyne, J, 847, 864
Chin, CBN, 345, 351, 357, 358
China Daily, 184, 188
China National Tourism Administration, 173, 174, 184, 188, 190
China Tourist Hotels Association, 188
Chiou-Wei, SZ, 632, 637
Chirieleison, C, 277
Cho, M, 153, 162
Choi, H, 294
Chou, FS, 118
Choy, DJL, 791, 794, 809
Christ, C, 846, 864
Christensen, LR, 53, 62
Chryssohoidis, G, 847, 856, 866
Chun, KT, 94, 101
Cicic, M, 151, 168
Cifuentes, M, 440
Claessens, S, 150, 162
Clancy, M, 789, 809
Clark, C, 4, 29
Clark, E, 384
Clark, GC, 814, 840
Clark, K, 318, 336
Clark, T, 151, 162
Clarke, H, 412, 423, 429, 807
Clarke, WC, 757
Clavé, S, 318, 326, 327, 331, 336
Claver, E, 168
Clawson, M, 260, 277
Clemen, B, 868
Clements, KW, 58, 65
CLIA, 341, 345, 348, 349, 357
Clifford, W, 868
COAG, 311, 315, 444, 465
Coase, R, 141, 162, 803, 809
Cockerell, N, 500, 519
Coe, NM, 150, 163
Coenen, M, 68, 70, 71, 73, 83
Cogneau, D, 487, 490
Cohen, S, 232, 252
Colby, B, 570
Cole, DN, 810
Collier, 822, 836, 840, 853, 865
Collins, D, 88, 101
Colmey, J, 834, 840
Conaghan, A, 846, 865
Conklin, DW, 180, 181, 189
Connell, J, 154, 163, 282, 284–286, 288, 294, 570

Contractor, FJ, 149, 154–156, 158, 159, 163
Cook Islands Statistics Office, 749, 757
Cook Islands Tourism Corporation, 748, 757
Cook, J, 757
Cooper, C, 197, 205, 278, 484, 491, 545, 568, 576, 603
Cooper, P, 940
Cooper, RJ, 57, 59, 62
Cooper, W, 384
Copeland, BR, 20, 29, 40, 62, 606, 609, 612, 617, 624, 637
Cordell, HK, 568
Corden, WM, 609, 617
Cork, S, 937
Cornelissen, S, 576, 601, 846, 865
Cortés-Jiménez, I, 43, 62, 70, 75, 83, 632, 635, 637, 639
Cortez, H, 784
Cossignani, M, 277
Costa Carlos, v, vii, 8, 21, 137, 170, 543, 572, 683, 704
Costa, C, 8, 19, 148, 163
Costanza, R, 362, 384, 385, 388, 914, 915, 918, 921, 937, 938
Council of Australian Governments (COAG), 315, 465
Courvisanos, J, 774, 775, 783
Coviello, N, 138, 145
Cowling, RM, 938
Coxhead, I, 665
Craig-Smith, S, 315, 749, 759
Crampon, LJ, 230–233, 252
Crandall, K, 570
Crask, M, 90, 101
Crilley, G, 439
Crompton, JL, 729, 732, 739
Crouch, G, 674, 680
Crouch, GI, 238, 252, 548, 569
Crouthamel, J, 433, 439
Cruise Lines International Association (CLIA), 340, 357
Culberston, K, 805, 809
Cullen, R, 434, 439
Cunningham, P, 899, 908
Curry, K, 702, 868
Curtin, J, 789, 809
Curtis, J, 434, 435, 439
Da Fonseca, GAB, 841
Daelemans, R, 295
Daily, GC, 914, 938
Dalgic, T, 150, 166
Daniel, P, 83
Daniels, P, 150, 163
Daniels, MJ, 548, 568
Danigelis, NL, 937
Dantas, N, 696, 702
Darder, FL, 150, 153, 155, 157, 159, 168
d'Arge, R, 937
Darling, J, 846, 847, 865
Dasgupta, A, 412
Davé, U, 153, 163
Davidson, D, 854, 865
Davidson, J, 76, 83
Davidson, M, 304, 312, 315
Davies, L, 679
Davies, REG, 233, 237, 243, 252
Davis, D, 550, 928, 930, 931, 938
Dawson, D, 283, 294
De la Cruz, JL, 631
Deardorff, A, 579, 601
Deaton, A, 44–46, 50, 54–56, 58, 59, 62, 63, 74, 83
Deegan, J, 70, 83
Deery, M, 490
Dekker, FW, 296
Delacy, T, 386
Delmonico, F, 294
Demunter, C, 670–672, 678
Denstadii, J, 26, 29, 883
Department of Business, Economic Development & Tourism, 541
Department of Environment, Climate Change and Water, 878, 879, 881, 883
Department of Finance, 408, 412
Department of Infrastructure and Planning, 465
Department of Natural Resources and Environment, 465, 541
Department of Statistics, 105, 118, 760
Department of Sustainability and Environment, 465
DERM, 460, 465
Derviş, K, 506, 519
Desvousges, WH, 386, 387
Dev, CS, 156, 165, 163
Devesa, 277, 637
Dhaw, N, 132

Diamantis, D, 167, 602
Diamantopoulos, A, 854, 865
Diamond, PA, 369, 385
Díaz-Pérez, FM, 548, 568
Dibb, S, 90, 101
Dickey, DA, 628, 637
Dickey–Fuller, 628
Dickinson, J, 937
Diedrich, A, 355, 357
Dieke, PUC, 647, 678
Diewert, WE, 45, 53, 59, 63, 76, 83
Dillman, DA, 373, 381, 385
Dimitriadou, E, 101
Dimou, I, 153, 155, 157–159, 162, 164
DIP, 446, 465
Ditton, R, 363, 387
Divisekera, S, v, 5, 6, 33, 40, 42, 43, 63, 66–68, 70–74, 79, 80, 83, 85
Dixit, AK, 37, 63, 264, 277, 579, 601
Dixon, JA, 928, 932, 938
Dixon, P, 506, 519
Doganis, R, 209, 213, 215, 222
Doi, T, 898–900, 908
Dolado, JJ, 628, 637
Dolnicar, S, v, 6, 7, 87, 88, 90, 92, 95–98, 100–102, 104
Dong, H, 665, 680
Donnelly, M, 868
Dornbusch, R, 584, 585, 601, 602
Douglas, N, 53, 55, 59, 234, 349, 354, 355, 357, 625
Dovers, S, 445, 466
Dowling, R, 349, 357, 358
Downer, M, 805, 809
Downward, PM, 566, 568
Doxey, G, 684, 702
Dragin, A, 355, 357
Dragun, AK, 23, 24, 765, 766, 769, 783, 785
Dreike, O, 863, 865
Driel, JV, 52, 64
Driml, S, 25, 26, 849, 865, 871, 872, 874, 878, 880, 881, 883, 884
Dritsakis, N, 634, 637
Drueke, TB, 284, 296
D'Sa, E, 696, 702
DSE, 444, 465
Duhs, A, vi, 12, 299, 300, 304, 316
Dunford, RW, 386
Dunning, JH, 139–141, 147, 153, 154, 158, 164, 181, 189, 578, 601
Durbarry, R, 62, 75, 84, 489, 632, 637
duVair, PH, 377, 387
Dwyer, L, 30, 64, 205, 272, 277, 354, 357, 406, 407, 409, 412, 430, 433, 439–441, 473, 475, 477, 482, 487–490, 493, 496, 499, 500, 505, 510, 519, 520, 540, 545, 547, 548, 568, 664, 669, 678, 770, 783, 809, 883, 884
Dwyer, W, 272, 277, 439, 519, 678
Dybedal, P, 330, 336

Eagly, AH, 378, 382, 385
Easterley, W, 836, 840
Ebel, R, 237, 252
Echeverria, J, 840
Econtech, 473, 477, 490
ECORYS, 196, 198, 205
Ecotourism Australia, 773, 783, 848, 865
Edmonds, C, 252
Edvardsson, B, 150, 164
Edvinsson, L, 164
EEAA, 912, 925, 935, 938
Eekeren, M, 70, 71, 73, 83
Egoh, B, 914, 938
EIU, 198, 205
Ekeledo, I, 149, 150, 164
Elbe, J, 150, 153, 159, 161
Elliott, C, 244, 252, 937
El-Mourhabi, J, 167, 602
El-Taha, M, 358
Emery, RF, 621, 622, 637
Endo, K, 576, 601
Engle, RF, 112, 118, 628, 638
Englin, JE, 369, 385
English, BG, 103
English, V, 284, 294
Engwall, L, 152, 164
Enhance Management, 849, 865
Ennew, C, 744, 757
Epstein, R, 276, 277
Erdem, T, 270, 277
Eric, N, 123, 132
Erikson, L, 545, 548, 568
Ernest & Young Global, 187, 189
Eroglu, D, 297
Erramilli, MK, 149–152, 154, 159, 163, 165
Esparon, M, viii, 25, 845, 868

Essex, S, 868
Eugenio-Martin, JL, 489, 633, 638
European Commission, 215, 217, 222, 682
EUROSTAT, 519, 520, 497, 540
Eurostat, 578, 601
Eurostat/OECD, 580
Eusébio, vii, 19, 543, 545, 547, 548, 550, 568, 570, 572
Everitt, BS, 97, 102

Fairweather, J, 848, 859, 862, 865
Fakeye, PC, 732, 739
Falco-Mammone, F, 849, 867
Fallas, H, 282, 294
Fallon, D, 277
Farber, S, 385, 937, 938, 940
Farley, J, 937
Farrand, A, 284, 294
Fayall, A, 138, 165
Fayed, H, 576, 601
Fayissa, B, 633, 638
Feenstra, RC, 579, 601
Fei, B, 65
Feldstein, MS, 61
Fenell, D, 886, 908
Ferguson, L, 486, 490
Ferjanić Hodak, D, 205
Fernández, J, 279
Ferrucci, L, 277
Fiji Bureau of Statistics, 750, 757
Filippaios, F, 161
Finke, R, 63
Finn, A, 270, 277
Firmin, R, 863, 866
Fishbein, M, 378, 384
Fisher, AC, 387, 873, 883
Fisher, B, 914, 916, 917, 937, 938, 940
Fisher, S, 601
Flachaire, E, 851, 853, 865
Flahault, A, 296
Flash Eurobarometer, 192, 328
Fleischer, A, 545, 547, 569
Fleming, DK, 213, 222
Fletcher, D, 548, 571
Fletcher, J, 205, 544–548, 567–569, 576, 582, 601
Flood, LR, 57, 59, 63
Foley, M, 262, 277
Folke, C, 385, 915, 916, 919, 920, 939
Font, X, 846, 864, 865
Fontenot, R, 868
Formann, AK, 95, 102
Forsgren, M, 145, 165
Forsyth, K, 855, 865
Forsyth, P, 205, 223, 277, 354, 357, 406, 407, 412, 430, 439, 440, 489, 490, 519, 520, 545, 568, 678, 783, 797, 809, 883
Fossati, A, 767, 769, 770, 783, 784
Foster, G, 306, 315
Fourcade, J, 295
Frank, RE, 100, 102
Fraser, I, 73, 83
Frechtling, D, 498, 523, 540, 548, 569
Freckleton, R, 283, 294
Fredline, L, 490
Freeman, D, 545, 547, 569
Fresenmair, DR, 545, 547, 569
Freudenburg, W, 854, 865
Friedman, TL, 818, 840
Frisch, R, 49, 63
Frissell, SS, 810
Frochot, I, 90, 102
Fujii, E, 70, 73, 83, 427, 428, 439
Fuller, WA, 628, 637
FVW, 197, 206
Fyall, A, 205, 278, 279, 337

Gallant, AR, 53, 63
Galle, J, 297
Galt, M, 492
Gamage, A, 545, 547, 548, 571
Gamage, AR, 124, 132
Gamba, RJ, 103
Gandolfi, F, 150, 165
Gangadharan, L, 409, 413
Ganz, W, 150, 165
Garcia, C, 283, 295
García-Falcón, MJ, 206
Gardiner, S, 315
Gardner, J, 294
Garrison, CB, 545, 565, 569
Garrod, B, 138, 165, 278, 279, 337
Gartner, WC, 645, 646, 679, 732, 739
Gatignon, H, 141, 161, 165
Gay, D, 747, 757
Gayer, DE, 937
Geddes, R, 270, 277
Gehlhar, M, 83
George, B, 289, 295
Georgiou, S, 940

Getz, D, 260, 277
Geyikdagi, NV, 152, 153, 162
Geyskens, E, 82
Ghartey, EE, 631, 638
Ghemawat, P, 107, 118, 814, 840
Giarini, O, 37, 63
Gibson, D, 755, 757
Gil, J, 851, 866
Gilbert, A, 939
Gilbert, D, 205, 568
Gilbert, DC, 578, 601
Giles, JA, 623, 628, 638
Gillespie Economics, 849, 866
Gillespie Economics and BDA Group, 875–877, 883
Gillham, J, 489
Gilpin, R, 788, 789, 809
Ginman, PJ, 42, 64
Glaister, S, 413
Glenn, LM, 937
Goeldner, CR, 193, 206, 727, 739
Gold Coast City Council (GCCC), 16, 17, 385, 445, 447, 460, 464–466
Goldberger, AS, 44, 51, 59, 63
Goldman, SM, 49, 63
Goldstein, M, 43, 63
Gómez, CM, 627, 638, 639
González, M, 639
Goodall, B, 847, 867
Goodman, SL, 364, 385
Goodman, WC, 235, 238, 241, 242, 252
Gooroochurn, N, 474, 480, 489, 490, 610, 617
Gorman, WM, 57, 63, 211, 222
Gort, M, 228, 252
Gössling, S, 766–769, 783
Government of Arunachal Pradesh, 708, 715, 718, 722
Government of Goa, 684, 692, 693, 695, 698–700, 702
Government of India, 125, 127, 128, 133, 684, 690–692, 695, 702, 713, 716, 722
Government of Samoa, 744, 757
Gowdy, J, 420, 439
Gracia, A, 866
Graddy, E, 228, 253
Graham, A, 218, 219, 222, 223
Granger, CWJ, 118, 627–629, 631, 634–636, 638
Grasso, M, 385, 937
Gray, HP, 28, 35–37, 42, 43, 29, 63, 245, 252
Green, EP, 939
Green, R, 57, 63, 64
Green, RJ, 769, 774, 783
Greenberg, D, 412
Greene, WH, 368, 385, 923–925, 938
Greenwood, C, 492
Griest, DA, 805, 809
Griffith, A, 785
Griffith, DA, 166
Gris, JC, 284, 295
Gronau, R, 236, 252
Groot, 363, 385, 916, 937, 938
Gross, S, 357
Grossman, GM, 577, 579, 601
Grün, B, 95, 102
Gu, HM, 8, 171, 175, 177, 179, 189, 190
Gui, L, 343, 357
Guilding, C, 868
Gulliksen, V, 339, 340, 357
Guo, J, 526, 540
Gupta, S, 289, 295
Gyimothy, S, 729, 739
Gyuris, E, 25, 845, 869

Hadley, N, 363, 387
Hagedorn, K, 29
Haites, EF, 238, 252
Hajkowicz, SA, 370, 385
Hale, T, 384
Haley, D, 865
Haley, RJ, 90, 102
Hamblin, R, 283, 295
Hamilton, 277
Hampton, A, 162
Han, Z, 68, 73, 84
Hancock, D, 284, 286, 295
Hanemann, MW, 369, 386
Hanemann, W, 851, 866
Hanemann, WM, 375, 385
Hanley, N, 368, 386
Hannon, B, 385, 937
Hanrahan, J, 846, 865
Hansen, C, 545, 569
Hansen, E, 867
Hanson, F, 285, 295
Hanson, GH, 579, 601
Hansson, A, 147, 165
Harberger, AC, 506, 519

Hardeman, R, 295
Hardin, G, 792, 809
Harding, P, 693, 702
Harman, F, 408, 412
Harrington, J, 548, 568
Harris, JR, 611, 617
Harris, P, 170
Harris, TR, 571
Harrison, A, 295
Harrison, AE, 176, 188
Harrison, D, 22, 23, 68, 648, 662, 679, 741, 744, 748–750, 755–757, 760
Harrison, MJ, 41–43, 64, 69, 84
Hartley, K, 401, 413, 418, 429, 431, 439, 441
Harvard Medical Letter, 282, 286, 288, 295
Haskel, JE, 189
Hassid, J, 150, 165
Hausken, K, 125, 132
Hausman, JA, 369, 385
Hauteserre, 269, 277
Hawaii State Department of Business, 523, 540
Hawkins, CJ, 412
Hawkins, JP, 929, 931, 935, 938
Hay, B, 489
Hayden, G, 384
Hayek, FA, 141, 165
Hayuth, Y, 213, 222
Hazari, BR, 606, 617, 623, 625, 626
Healy, E, 315
Heaney, L, 499, 520
Hebelein, TA, 932, 939
Heckscher, E, 37, 165
Heckscher–Ohlin, 139, 579
Hedin, K, 147, 165
Heerden, 474
Hefner, F, 412
Heidt, T, 863, 866
Hein, L, 918, 938
Helalat, MS, 132
Hellman, P, 150, 152, 165
Helpman, E, 37, 64
Hemstra, S, 428, 439
Hendee, JC, 805, 806, 809
Hennart, J-F, 141, 147, 165, 166
Hensher, DA, 923, 925, 938
Henten, A, 150, 166
Herath, G, 434, 435, 439
Hernández, JM, 639
Hernández-Martín, R, 623, 626, 638
Hernansanz, C, 150, 169
Herrero, L, 275, 277
Herrlinger, S, 297
Hertel, T, 506, 520
Heung, VS, 281, 286, 295
Hewings, GJD, 490
Hicks, JR, 44, 64
Higginbottom, K, 441, 769, 774, 775, 783, 784
Hillel, O, 864
Hitch, TK, 249, 253
Hjalager, AM, 137, 166, 277, 265, 576, 577, 601
Hjerpe, EE, 548, 569
Ho, T, 783
Hoban, T, 868
Hobson, JP, 342, 344, 357
Hoehn, JP, 381, 386
Hohl, A, viii, 25, 813, 842
Hole, FD, 908
Hollard, G, 851, 853, 865
Hölldobler, B, 834, 842
Holling, CS, 919, 938
Holm, BD, 145, 162
Holm, U, 165
Holz, CA, 172, 173, 189
Holzner, M, 634, 638
Honey, M, 788, 789, 809, 817–819, 824, 826–828, 832, 834, 836, 840, 846, 866, 886, 887, 908
Hong, C, 490
Hong, JH, 166
Hooper, N, 429, 439
Hopkins, GL, 297
Hopkins, L, 282, 286, 295
Hoque, S, 519, 520, 883
Horowitz, MD, 286, 295
Horváth, E, 548, 569
Hospital, JD, 386
HOTELS, 179, 189
Houston, JR, 323, 362, 386
Houthakker, HS, 43, 49–51, 64
Howarth, R, 439
Hsu, C-C, 163
Hu, SW, 617
Hubert, L, 95, 101
Hudspeth, T, 937
Hughes, J, 249, 253

Hughes, HL, 546, 569
Hughes, M, 433, 439
Hui, CH, 102
Hummels, D, 577, 587, 601
Hung, K, 347, 357
Hunt, S, 466
Husein, J, 631, 638
Huybers, T, 674, 679
Huysmans, K, 284, 295
Hymer, SH, 140, 166

IAAPA, 317, 336
Ibenholt, K, 545, 568
Ichiki, S, 895, 903, 904, 908
Idda, L, 775, 781, 783
IDP, 310, 315, 603
IFAD, 815, 840
Ihalanayke, R, 132
Iijima, Y, 909
INE, 548, 549, 551, 569
Inskeep, E, 685, 702
International Monetary Fund (IMF), 589, 590, 600, 602, 621, 638, 648, 649, 679
Intralawan, A, 387
IRTS, 494, 496–498, 520
Isaacs, JC, 772, 774, 783, 832, 840
Ishigaki, A, 908
Ishihara, T, 899, 908
Ishii, J, 601
Ismail, J, 428, 439
Iso-Ahola, 729, 732, 739
Ivarez-Albelo, CD, 623, 626, 638
Iversen, C, 140, 166
Iverson, TJ, 548, 570

Jacobs, R, 294
Jafari, J, 103, 679, 819, 840
Jaffry, SA, 385
Jäger, S, 194, 206
Jago, L, 490
Jain, A, 774, 775, 783
Jakobsson, KM, 23, 24, 765, 766, 769, 783, 785
Jang, S, 638, 732
Jansen, M, 150, 162
Jansen-Verbeke, M, 260, 262, 278
Japan Ecotourism Society, 887, 909
Japan Travel and Tourism Association, 888, 908
Japan Travel Bureau (JTB), 247, 253, 909
Jarvis, J, 750, 758
Jarvis, N, 862, 866
JATA-NET, 246, 247, 253
Jauhari, V, 847, 866
Javalgi, RRG, 150, 166
Jawabreh, OAA, 132
Jenkins, CL, 683, 702
Jensen, S, 545, 569
Jessamy, V, 940
Jesupatham, S, 698, 703
Jiao, Y, 359
Job, H, 570
Johansen, L, 506, 519, 638
Johanson, J, 142–145, 147, 165, 166
Johns, N, 729, 739
Johnson, C, 153, 166
Johnson, FR, 370, 386
Johnson, RL, 545, 547, 569, 822, 833, 874
Jones, C, 500, 501, 519
Jones, CA, 295
Jones, L, 569
Jones, P, 153, 157, 166
Jones, PT, 837
Jones, RW, 577, 579, 602
Jones, T, 268, 278
Jong, 487, 492
Jonker, S, 868
Jorgenson, DW, 62
Jovanovic, B, 228, 253
Jovicic, D, 357
Judge, RP, 369, 386
Jurowski, C, 732, 740

Kadt, 756
Kahle, L, 867
Kahn, ME, 287, 295
Kahn, RF, 547
Kahneman, D, 6, 29
Kaiser, K, 96
Kaizu, Y, 908
Kalafatis, S, 170
Kaldor, N, 141, 166
Kaldor–Hicks, 418, 419, 437
Kamakura, W, 97, 100, 103
Kamra, KK, 705, 722
Kandampully, J, 867
Kanninen, B, 866
Kara, SM, 631, 638
Karagiannisa, G, 75, 84
Karamustafa, K, 153, 167, 202, 206

Karmali, S, 294
Kaspar, C, 673, 679
Kastenholz, E, 550, 566, 567, 569
Katircioglu, ST, 632, 638
Kato, A, 10, 225, 255
Katsikeas, CS, 139, 142, 168
Kaynak, E, 150, 166
Kazi, S, 696, 702, 703
Keller, P, 206, 413, 603, 680, 681, 683, 702
Keller, WJ, 52, 64
Kellert, S, 384
Kennedy, G, 439
Kent, J, 841
Kenyon, W, 440
Keske, CM, 873, 883
Ketchen, DJ Jr, 95, 102
Khaled, M, 439
Khan, H, 7, 105, 106, 118
Khan, M, 43, 63
Khanna, DK, 166
Kierzkowski, H, 577, 579, 602
Kiesecker, J, 847, 866
Kikuchi, T, 26, 27, 885, 910
Kildow, J, 364, 387
Kim, E, 490
Kim, HJ, 631, 638
Kim, K, 473, 480, 486, 490
Kim, Y-S, 548, 569
Kindleberger, CP, 62, 140, 166
King, B, 315
King, OH, 370, 386
King, S, 439
Kiolberg, J, 809
Kirkpatrick, S, 466
Kirsner, S, 260, 278
Klaassen, L, 413, 414
Klein, LR, 50, 59, 64
Klein, RA, 339, 346, 349, 353, 358
Klein, YL, 362, 386
Klenosky, DB, 733, 739
Klepper, S, 228, 252, 253
Klineberg, S, 854, 866
Knetsch, J, 260, 277
Knight, AT, 310, 938
Knowles, T, 137, 576, 784, 167, 602
Kobayashi, S, 892, 909
Kock, S, 149, 150, 152, 162
Kofana, GE, 752, 757
Kohler, W, 579, 602
Kolbert, E, 814, 815, 840
Konan, DE, 473, 480, 486, 490
Konrad, W, 291, 295
Kosaka, W, 908
Kotchen, MJ, 287, 295
Kotler, P, 100
Kralj, A, 867
Kreishan, FM, 631, 638
Krippendorf, J, 655, 679
Krueger, AO, 622, 625, 638
Krüger, O, 824, 825, 829, 834, 840
Krugman, PA, 577, 602
Krugman, PR, 37, 64
Krutilla, JV, 873, 883
Krystallis, A, 847, 855, 866
Kucukusta, D, 295
Kuilamu, M, 751, 755, 758
Kuivalainen, O, 150, 167
Kula, E, 369, 386
Kulesa, P, 382, 385
Kumar, S, 284, 286, 288, 295, 811
Kundu, SK, 153–156, 158, 159, 163
Kunzig, R, 814–816, 840
Kuronuma, Y, 26, 27, 885, 910
Kurzweil, R, 817, 840
Kusluvan, S, 153, 167
Kuznets, SS, 227–230, 233, 237, 241, 246, 249, 253
Kwon, K, 545, 547, 548, 569
Kwortnik, RJ, 346, 349, 358
Kyläheiko, K, 167

Labonte, R, 295
La Croix, S, 249, 253
Lado-Cousté, N, 161
Laesser, C, 194, 206, 548, 569
Laffargue, J-P, 617
Lam, S, 862, 864
Lama, M, 22, 705, 713, 722, 723
Lam-Po-Tang, J, 287, 295
Lancaster, G, 199, 206
Lancaster, KJ, 211, 222, 369, 386
Landau, S, 102
Landgrave, R, 387
Lane, B, 794, 798, 808
Laney, LO, 524, 525, 540
Langford, I, 440
Langford, IH, 364, 384
Lansdell, N, 409, 413
Lanza, A, 73, 84, 623, 624, 637, 639, 640
Lanzilotta, B, 637

Laroche, M, 863, 866
Dwyer, L, vii, 18, 521
Lau, L, 57, 59, 60, 62, 64, 67, 84
Laurance, WF, 815, 840
Law, R, 34, 62, 194, 195, 205
Lawson, AM, 540
Lawton, C, 222
Layard, R, 413
Lazarevski, K, 100, 102
Lazarow, N, 13, 14, 16, 361, 363, 371, 374, 377, 386–388, 443, 447, 448, 452, 456, 457, 464, 466, 467
Leakey, R, 815, 831, 841
Leamer, E, 384
Leamer, EE, 43, 64
Lean, HH, 631, 632, 639
Leask, A, 259, 278, 279, 337
Leakey, R, 823
Ledesma-Rodríguez, F, 639
Lee, C, 94, 103, 545, 547, 548
Lee, C-K, 474, 482, 486, 491, 547, 569
Lee, CC, 634, 639
Lee, D, 439, 473, 484, 486, 492
Lee, HC, 115, 118
Lee, M, 601
Lee, YW, 57, 61
Leese, M, 102
Leeuwen, ES, 548, 569
Leeworthy, VR, 371, 386
Legohérel, P, 548, 570
Lei, Z, 219
Leiper, N, 685, 703
Leisch, F, 92, 96, 98, 101, 102, 104
Lejárraga, I, 545, 570
Lemoine, F, 578, 602
Lennon, J, 262, 271, 277, 278
Lennon, JJ, 489, 492
Léon, CJ, 627, 639
Leones, J, 545, 548, 565, 570
Leontief, W, 53, 525, 540
Lester, J-A, 355, 358
Leujak, W, 929, 932, 938
Leung, P, 18, 492, 572
Leung, PS, 523, 541
Levy, A, 867
Lewbel, 53, 75
Lewbell, A, 75, 84
Lewin, R, 841
Leyshon, A, 163
Li, G, 65, 68, 69, 75, 84, 85, 118
Li, J, 152, 167
Li, S, 152, 473, 478, 482–485, 491
Liberto, 637
Libreros, M, 498, 520
Lichty, RW, 545, 570
Liebhold, D, 840
Lim, C, 34, 64
Lima, J, 548, 570
Limburg, KE, 385, 915, 937, 938
Lime, DW, 805, 809
Lindberg, K, 26, 29, 435, 439, 874, 883
Lindqvist, M, 143, 167
Lindsay, V, 161
Linnemann, H, 143, 167
Lins, RL, 295
Linsheng Zhong, JD, 726, 727, 739
Lionetti, S, 637
Lipsey, RE, 177, 189
Litteljohn, D, 138, 153, 158, 167
Liu, 185, 189, 388, 545, 547, 548, 552, 565, 570
Lockwood, 153, 154, 161, 278, 369, 386
Lockyer, T, 413
Loke, MK, 492
Loker-Murphy, L, 735, 739
Lolohea, S, 746, 749, 758
London, GM, 284, 296
Long, D, 892, 909
Loomis, J, 377, 383, 386, 387, 434, 440, 866, 873, 883
Lordan, G, vi, 12, 281, 297
Louviere, 384
Lovelock, CH, 151, 167
Lovett, J, 434, 441
Lowes, B, 679
Lowrie, EG, 284, 296
Lowry, W, 434, 439
Lozano, J, 627, 638, 639
Lü, JY, 189
Lu, LJ, 617
Lucas, RC, 809, 816
Lucas, RE, 620, 624, 639
Lück, M, 358
Ludvigson, T, 758
Lumsdon, L, 566, 568
Lundberg, DE, 735, 739
Lundie, S, 490, 771, 783
Luostarinen, R, 138, 170
Lurong, C, 602

Lütkepohl, H, 628, 629, 637, 639
Lyssiotou, P, 68, 69, 72, 73, 75, 84

Ma, X, 434, 440
MacDonald, GM, 228, 253
MacReady, N, 281, 285, 286, 296
Madau, FA, 783
Maddah, B, 353, 358
Madden, J, 472, 482, 484, 490, 491, 510, 520
Maddison, D, 767, 784
Madsen, TK, 145, 167
Magee, SP, 43, 64
Mahajan, VAP, 694, 703
Mahon, BD, 283, 296
Mahoney, A, 548, 571
Mahoney, D, 937
Mahooney, J, 865
Maitra, AK, 445, 466
Mak, vi, vii, 10, 18, 179, 189, 225, 229, 233, 236, 237, 244, 252, 253, 255, 345, 358, 426, 430, 439, 440, 523, 541
Maltby, E, 940
Manaktola, K, 847, 866
Manente, M, 545
Manfredo, MJ, 385
Mangion, ML, 68, 69, 75, 84
Mankiw, NG, 621, 639
Manning, 752, 758, 939
Manuela, P, 62
Marin, G, 94, 103
Mark, J, 83
Markandya, A, 772, 784, 810
Market Trends Pacific and John M. Knox & Associates, Inc., 244, 253
Markowitz, H, 140, 167
Markusen, JR, 188, 579, 602
Marriotti, A, 673, 679
Marsden, S, 445, 466
Marshall, 94, 103, 621, 639
Marti, BE, 339, 346, 358
Martin, BS, 229, 253
Martin, EA, 663, 679
Martin, F, 170
Martin, J, 294
Martin, KA-M, 150, 163
Martin, LJ, 284, 296
Martinetz, T, 97, 103
Martínez, ML, 362, 387
Martín-Morales, N, 638
Maskus, K, 188
Maslin, C, 865
Massieu, A, 520
Massy, WF, 102
Matečić, I, 205
Matheson, A, 412
Mathieson, A, 543–545, 547, 570, 647, 672, 679, 683–685, 703, 704, 805, 809
Mathieu, L, 434, 440
Mattsson, L, 145, 166
Matus, S, 864
Mauer, 147
Mayer, M, 548, 570
Mays, D, 297
Mazanec, J, 88, 90, 100, 103, 104
McAuley, A, 138, 145, 163
McCabe, S, 694, 696, 698, 703
McCahill, L, 937
McCalla, R, 343, 357
McCarthy, 355, 358, 805, 809
McCaughey, N, 491
McClung, G, 319, 330, 336
McDonald, JM, 385
McDonnell, I, 124, 132
McDougall, PP, 144, 145, 167, 168
McEniff, J, 327, 336
McFadden, DL, 61
McGehee, NG, 752, 758
McGregor, PG, 490
McIntosh, B, 937
McIntosh, RW, 206
McIntyre, G, 789, 809
McKay, D, 295, 451
McKeever, M, 866
McKenney, B, 847, 866
McKinnon, RI, 622, 639
McLaren, KR, 57, 59, 62
McLellan, RW, 84
McLennan, C, 880, 883
McMahon-Beattie, U, 492
McManus, JC, 147, 167
McNamara, A, 880, 883
McNeely, JA, 774, 784
McNeill, JR, 814, 841
McQueen, M, 153, 154, 158, 164, 181, 182, 189, 578, 601
Medda, F, 357
Medical Tourism Association, 290, 296
Medina-Muñoz, DR, 202, 206
Medina-Muñoz, JM, 206

Medio, D, 928, 932, 939
Medlik, S, 577, 601
Meis, S, 520
Melendy, HB, 237, 253
Mello, 68
Melo, C, 519, 846, 866
Mergos, GJ, 75, 84
Metzger, T, 297
Michalko, A, 868
Mihalič, T, 20, 21, 655, 660, 668, 674, 679, 681
Mike Raybould, 16, 361, 388, 443, 467
Mill, JS, 36, 64
Mill, RC, 685, 703
Millennium Ecosystem Assessment, 916, 939
Miller, G, 847, 866
Miller, GR, 808
Miller, ML, 363, 386, 387
Milne, S, 277, 744
Milner, C, 474, 480, 490
Minas, S, 838
Ministry of Environment, 886, 887, 889, 890, 893, 894, 909
Miossec, JM, 686, 703
Mishan, EJ, 395, 403, 413
Mishio, M, 909
Mishra, HR, 834, 841
Mitchell, J, 747, 758
Mitchell, RC, 368, 387
Mitra, A, 22, 705, 709, 713, 714, 718, 722, 723
Mittermeier, CG, 841
Mittermeier, RA, 841
Mjelde, JW, 491
Moberg, F, 915, 916, 919, 920, 939
Moeltner, K, 385
Moeti, KB, 142, 167
Mohan, V, 606, 617
Mok, C, 548, 570
Mondher Sahli, 20, 575, 603, 619, 640
Montfort, KV, 568
Moon, S, 491
Moore, E, 874, 883
Moore, S, 123, 133
Moorthy, A, 387
Moosa, IA, 73, 83, 148
Moran, D, 872, 884
More, T, 434, 435, 440
Moreira, AC, 140, 146, 167
Morgan, RE, 139, 142, 168
Morgan, T, 249, 254
Morimoto, K, 908
Morley, CL, 34, 64, 211, 222
Morling, P, 938
Morris, D, 814, 841
Morrison, AM, 90, 102
Morrison, S, 238, 240, 241, 254
Morritt, R, 100, 103
Moscardo, G, 262, 278, 846, 866
Moschini, G, 76, 84
Moussawi-Haidar, L, 358
Movono, A, 751, 755, 758
Moyo, D, 822, 836, 837, 841
Mudambi, R, 153, 161, 548, 566, 570
Muellbauer, J, 44–46, 50, 54–56, 63
Mules, T, 394, 399, 407, 412, 413, 445, 466
Mullarkey, DJ, 384
Müller, FG, 774, 784
Müller, M, 570
Muller, M, 104
Munday, A, 500, 519
Munro, HJ, 138, 145, 163
Murray, T, 42, 64
Myers, JH, 88, 103
Myers, N, 820, 825, 841

Nabin, M, 617
NACS-J, 886, 887, 892, 898, 904, 906, 909
Naeem, S, 385, 937
Nahata, B, 330, 336
Naidu, V, 751, 759
Nakra, P, 285, 296
Narayan, PK, 473, 475, 482, 483, 491, 545, 570, 745, 758
Narayan, S, 758
Narayanasamy, N, 845, 867
Narsey, W, 745, 758
Nash, D, 652, 679
National Audit Office, 270, 278
National Commission on Macroeconomics and Health, 292, 296
Navaro, P, 124, 132
Neary, JP, 609, 617
Nelsen, C, 375, 377, 387
Nelson, CK, 628
Nelson, CR, 639
New South Wales Government, 365, 387

New South Wales National Parks and Wildlife Service, 875, 883
Newman, RS, 693, 696, 703
Newsweek, 283, 296
Ng, S, 75, 84
Ng, Y-K, 423, 439
NGM, 815, 841
Nguyen, D, 868
Niccolucci, V, 841
Nicholas, S 153, 156, 168
Nicholls, RJ, 362, 387
Nicholson, R, 729, 739
Nijkamp, P, 568–570
Nilsson, PA, 340, 344, 347, 358
Norbert Vanhove, 14, 393, 418
Norgaard, R, 384
Noriega, R, 466
Norman, R, 199, 206
Norman, V, 37, 63
Norman, WC, 568
Noronha, F, 696, 703
Noronha, L, 698, 703
North, DC, 639
Norton, B, 384
Norton, LP, 281, 286, 296
Novelli, M, 648, 678
Nowak, J-J, 579, 585, 587, 602, 623, 625, 635, 637–639, 662, 679
Noyes, C, 868
Nsiah, C, 638
NSSO, 125, 127, 131, 132
NSW Department of Infrastructure, Planning and Natural Resources, 771, 784
NTA (National Tourism Administration of China), 726, 739
Nunes, PM, 633, 640
Nunez-Lara, E, 782
Nyaupane, G, 260, 278
Nystrom, H, 164
Nyström, M, 919, 920, 939

O'Brien, D, 232, 237, 254
O'Connell, JF, 223
O'Connor, S, 775, 784
O'Farrell, PN, 150, 152, 168
O'Hagan, JW, 41–43, 68, 69, 64, 84
O'Neill, JW, 190
O'Neill, RV, 385, 937, 938
Oates, WE, 778, 782, 783
Obermiller, F, 569
Obstfeld, M, 37, 64, 602
OECD Education at a Glance, 315
Office of Economic and Statistical Research, 880, 883
Office of Travel and Tourism Industries, 248
Ogasawara Ecotourism Congress, 898, 909
Ogasawara Tourist Association, 893, 909
Ogasawra Tourist Association, 893
Ogilvie, FW, 545, 570
Oh, C, 631, 639
Ohlin, B, 37, 168, 593, 676
Oka, S, 902–904, 909
Oka Shuichi, 901, 905
Okotai, P, 370, 385
Oliver, D, 326, 336
Olsen, MD, 150, 156, 170
OmniTrak, Inc., 244, 254
Ono, M, 892, 909
Oppermann, M, 735, 739
Organisation for Economic Co-operation and Development (OECD), 12, 35, 84, 194, 206, 291, 300, 301, 303, 315, 497, 501, 519, 520, 540, 575, 578, 590, 633, 639, 775, 781, 784, 910, 940
Ormiston, D, 933, 939
Ormond, RFG, 939
Ornelas, E, 581, 602
Orru, E, 783
Ortúzar, JDD, 925, 939
Osborne, LL, 386
Osleeb, JP, 386
Ostaszewski, K, 336
Ostrom, E, 27, 29, 872, 883
Oum, TH, 238, 254
Oviatt, BM, 144, 145, 167, 168
Owen, CB, 547, 568
Ozanne, L, 868
Ozuna, T Jr, 569

Paavola, J, 940
Pacific Asia Travel Association, 118
Pack, A, 83
Packer, C, 295
Padachi, K, 640
Pagan, JA, 295
Page, S, 208, 222
Page, SJ, 570
Palaskas, T, 216, 222

Palmquist, RB, 387
Pambudi, D, 474, 477, 491, 520, 875, 883
Pandit, S, 864
Panella, G, 767, 769, 770, 783, 784
Panoho, J, 758
Panthera, 821, 841
Panvisavas, V, 154, 168
Panzar, J, 277
Papadopoulos, S, 153, 162
Papathanassis, A, 341, 358
Papatheodorou, A, 9, 10, 29, 68, 69, 84, 207, 208, 211, 212, 214, 218, 219, 222, 223, 278, 345, 358, 413, 680
Parameshwaran, P, 62
Parikh, K, 126, 132
Park, DB, 739
Parks and Wildlife Service Tasmania, 440
Parmenter, 472–475
Parmenter, B, 519
Parmenter, BR, 488, 489
Parry, R, 937
Parsons, G, 434, 440
Parsons, W, 123, 132
Paruelo, J, 385, 937
Pashardes, P, 57, 64
Pasquale M Sgro, 605, 618
Pass, C, 654, 679
Pass, CL, 162
Patterson, PG, 150, 151, 168, 170
Patterson, TM, 830, 841
Paulhus, DL, 94, 103
Payne, J, 384
Pearce, 545, 729
Pearce, D, 265, 278, 412, 652, 658, 679, 739, 884
Pearce, DG, 545, 570, 729, 739
Pearce, DW, 363, 387, 412, 413, 790, 802, 810, 872
Pearson, M, 939
Pearson, MP, 913, 939
Peel, V, 750, 758
Peerapatdit, N, 571
Pegg, S, 882, 883
Pelat, C, 287, 296
Pendleton, L, 364, 387
Pennings, G, 284, 296
Perdue, R, 735, 739, 758
Pereira, SC, 189
Pereyra, JS, 637
Perez, EA, 548, 571
Pérez-Maqueo, O, 387
Pérez-Rodríguez, JV, 639
PERSGA, 928, 932, 939
Personal Property Advisor, 676, 679
Peters, M, 104, 150, 153, 169, 647, 661, 679
Peterson, GL, 385
Peterson, ME, 810
Petit, S, 19, 582, 602, 679
Petrick, J, 347, 357, 358
Petros Zenelis, 207, 224
Pezzey, J, 789, 810
Pham, DT, 500, 510, 511, 520, 570
Pham, T, 18, 520, 875, 884
Pham, TD, 493, 520
Phang, SY, 118
Phillips, O, 274, 278, 330, 336
Phillips, P, 161, 177, 189, 746, 750, 758
Phlips, L, 44, 48, 50, 58, 64
Piggot, TL, 445, 447, 466
Pigliaru, F, 623, 624, 637, 639
Pigou, AC, 417, 420, 438, 440, 546, 803, 810
Pinazzo, J, 440
Pinder, D, 868
Pine, R, 177, 178, 181, 186, 189
Ping Yin, Y, 490
Pitts, WD, 908
Pizam, A, 548, 571
Pla Barber, J, 150, 153, 155, 157, 159, 168, 169
Planet Green, 830, 841
Planin, J, 679
Planina, J, 668, 673, 674
Planting, 540
Plomp, J, 283, 296
Plosser, CI, 628, 639
Pohlmann, C, 277
Pointeau, R, 466
Pollak, RA, 52, 53, 65, 74, 84
Pollard, 283, 296
Polman, L, 836, 841
Polo, C, 473, 476, 491
Polunin, I, 668, 680
Pomeroy, RR, 571
Poortinga, YH, 103
Porter, PK, 548, 571
Portney, P, 384
Posner, R, 418, 440
Poterba, JM, 61

Powell, AA, 44, 49, 51, 52, 65
Prasad, A, 758
Prasad, BC, 22, 23, 745, 750, 758, 761
Pratt, S, 18, 473, 485–487, 491, 492, 744, 757
Prescott, K, 162
Prest, A, 394, 413
Price Waterhouse Coopers (PWC), 466
Price, L, 162
Prideaux, B, 849, 867
Priestley, G, 278
Primont, D, 62
Proença, S, 633, 639
Pruy, A, 297
Pulina, M, 83, 632, 637
Pulina, P, 783
Purcell, W, 153, 156, 168
Puumalainen, K, 167
Pyo, SS, 68, 71, 84

Qi, PS, 178, 189
Quandt, RE, 16, 29, 212, 223
Quaschning, T, 297
Queensland Government, 445, 466
Quer, D, 155, 158, 168
Qureshy, L, 703

Radam, A, 785
Radtke, H, 569
Raguraman, K, 547, 548, 571
Raicola, V, 749, 758
Rainforest Alliance, 828, 841
Rajaratnam, D, 151, 162
Ramaswami, SN, 140, 160
Ramirez, R, 199, 206
Ramón Rodríguez, A, 150, 153–156, 158, 159, 168
Ramos, M, 640
Ramsey, FP, 420, 440, 620, 639
Randall, A, 381, 386
Randner, R, 384
Rao, CP, 149, 150, 152, 165
Raskin, RG, 385, 937
Ravilious, C, 939
Rawls, J, 444, 466
Raybould, M, 13, 14, 363, 364, 387, 413, 445, 447, 448, 452, 456, 457, 466
R Development Core Team, 96, 103
Redekop, WK, 296
Reed, B, 937
Reed, CM, 285, 286, 289, 290, 296
Reichel, A, 548, 571
Reimer, JJ, 487, 491
Reinhardt, F, 847, 867
Reiseanalyse, RA, 195, 206
Reserve Bank of Australia (RBA), 300, 315
Resiman, D, 282, 296
Reyers, B, 938
Rey-Maquieira, 638–640
Rialp, A, 146, 168
Rialp, J, 146, 168
Richards, G, 321, 336
Richards, JF, 814, 841
Richards, S, 270, 278
Richardson, R, 434, 440
Rietveld, P, 569
Rigall-I-Torrent, R, 872, 884
Riley, R, 275, 278
Rimmer, M, 506, 519
Risso, 637, 640
Ritchie, J, 674, 680
Ritchie, JR, 727, 739
Ritchie, JRB, 206
Rizvi, SAT, 937
Rizzo, DM 937
Roberts, A, 519
Roberts, J, 150, 168
Roberts, CM, 929, 931, 935, 938
Robertson, M, 118
Robilliard, A-S, 487, 490
Robinson, E, 141, 168
Robinson, S, 519
Roe, B, 867
Rogers, H, 266, 278
Rogers, R, 103
Rojid, S, 640
Romano-Critchley, G, 294
Rome, A, 846, 866
Romer, D, 622, 639
Romer, PM, 620, 639
Rompf, P, 571
Root, FR, 148
Roper, A, 162, 167
Rosalsky, MC, 63
Rose, E, 161
Rose, JM, 938
Rosenberg, N, 254
Rosenthal, LH, 384
Rosenzweig, JA, 286, 295

Rossello, J, 223
Rossi-Hansberg, E, 577, 579, 582, 601
Roster, CA, 94, 103
Rothenbach, B, 866
Rouget, M, 938
Round, D, 305, 315
Routledge, P, 696, 703
Rowe, T, 847, 867
Roxburgh, T, 918, 939
Roy, J, 345, 351, 358
Roy, KC, 703, 722, 770, 784
Royal Automobile Club of Queensland, 466
Rubin, H, 50, 59, 64
Rugg, D, 211, 223
Rugman, A, 141, 147, 161, 169
Ruitenbeek, HJ, 921, 939
Runnels, V, 295
Russel, RR, 62
Russell, C, 384
Russell, M, 751, 752, 759
Russo, A, 278
Rutherford, T, 506, 519
Ryan, C, 76, 177, 189, 403, 413, 433, 440, 756, 759
Ryan, DL, 76, 84

Saarenketo, S, 167
Sabadani, B, 295
Sacks, J, 172
Sacramento, I, 150, 169
Sahli, M, 19, 579, 602, 637–639, 679
Sahoo, P, 336
Sakai, MY, 68, 70, 84
Sallis, J, 162
Salm, RV, 928, 939
Salma, U, 499, 505, 520
Samartín-Sáenz, M, 161
Samoan Bureau of Statistics, 749, 759
Samoan Tourism Authority, 749, 759
Sampol, CJ, 548, 571
Samuelson, PA, 44, 65, 139, 169, 582, 601, 602
Samy, J, 750, 759
Sánchez Peinado, E, 150, 169
Sanchez, M, 866
Sandford, D, 665, 680
Santana-Gallego, M, 634, 639
Sanz, J, 277
Sargan, JD, 111, 118
Sassone, PG, 403, 413
Sathiendrakumar, R, 787, 788, 790, 794, 801, 803, 810
Savin, NE, 62, 74, 82
Saving Rhinos, 823, 841
Sawamiphakdi, D, 545, 571
Scaperlanda, A, 43, 61, 68, 69, 82, 147
Scarfe, B, 377, 387
Schaffer, WA, 403, 413
Scherly, F, 402, 413
Scheurer, R, 326, 337
Scheyvens, R, 751, 752, 755, 759
Schlegelmilch, B, 865
Schmidt, J, 291, 294
Schmitt, RC, 233, 237, 240, 243, 249, 251, 254
Schneider, L, 847, 867
Schott, C, 848, 857, 867
Schubert, F, 623, 625, 867
Schubert, SF, 640, 854
Schulten, K, 97, 103
Schultz, S, 434, 435, 440
Schultz, TW, 621, 640
Schuman, H, 383, 384, 387
Schumpeter, JS, 11, 29, 264, 278
Schuster, G, 836, 841
Schved, JF, 295
Scott, N, 882, 883
Scura, L, 938
Seabrooke, W, 385
SEAM, 926, 927, 939
Sebastiáan, M, 150, 169
Seetanah, B, 565, 571, 640, 634
Seifert-Granzin, J, 698, 703
Sen, AK, 125, 132
Sen, G, 694, 696, 698, 703
Sengupta, A, 133
Sequeria, TN, 633, 640
Seraj, K, 857, 867
Servais, P, 145, 167
Severt, D, 571
Seymour, M, 123, 133
Sgro, M, 617
Sgro, PM, vii, 606, 617, 623, 638
Sgro, PS, 617
Shanahan, M, 305, 315
Shane, S, 167
Sharma AM, 294
Sharma, DD, 162
Sharma, G, 864

Sharpley, R, 645–647, 652, 668, 679, 680
Shaw, G, 452, 664, 668, 681
Sheehey, C, 358
Shehata, AE, 913, 939
Shelby, B, 932, 939
Sheldon, PJ, 34, 65
Shelton, D, 937
Sheng, J, 308, 315
Shephard, R, 45, 65
Sheppard, 95, 103
Shimakawa, T, 889, 909
Shimizu, Y, 891, 892, 909
Shook, CL, 95, 102
Short, AD, 460, 466
Shoven, JB, 485, 491, 506, 520
Shrader, RC, 167
Shuib, A, 785
Shumiya, T, 895, 903, 908
Sigala, M, 220, 223
Sillano, M, 925, 939
Silva, MSM, 169
Simcock, N, 866
Simkin, L, 90, 101
Simmons, DG, 520, 865
Simon, H, 6, 29
Simpatico, T, 937
Sinclair, M, 278
Sinclair, MT, 68, 69, 75, 84, 223, 472, 474, 476–478, 480, 490, 492, 638, 680
Sinclair, T, 29, 413, 578, 585, 602, 610, 617, 789, 791, 808
Singapore Tourism Board, 106, 118, 119
Singer, P, 817, 841
Singer, S, 294
Sinha, C, 726, 740
Sinkovics, R, 865
Siqueira, A, 696, 702, 703
Sivakumar, K, 149, 150, 164
Six Flags, 321, 323–325, 327, 331, 332, 334, 335, 337, 677
Sjöholm, F, 177, 189
Skene, J, 472, 491, 492, 770, 784
Slatter, C, 752, 759
Slaughter, MJ, 189
Small, C, 387
Smeral, E, 70, 524, 525, 527, 540, 575, 603, 664, 676, 680
Smidt, S, 412
Smith, A, 65, 621, 640
Smith, AW, 445, 466
Smith, FT, 315
Smith, KR, 254
Smith, M, 295
Smith, P, 294
Smith, S, 209, 413
Smith, SC, 652, 653, 680
Smith, SLJ, 770, 784
Smith, V, 262, 278, 679
Smith, VK, 369, 386, 387
Smith, VL, 686, 703
Smith, W, 87, 103
Smits, W, 841
Smyth, R, 491
Snapp, R, 937
Söderqvist, T, 940
Sofer, M, 751, 759
Sofield, T, 751, 759
Solnet, D, 867
Solow, RM, 61, 384, 620, 640
Sommerville, A, 294
Song, H, 34, 65, 85, 111, 118, 166, 295
Soriani, S, 343, 350, 358
Soskin, M, 264, 277
Soukiazis, E, 633, 639
South Pacific Tourism Organisation, 747, 750, 759
Spalding, MD, 920, 939
Spash, CL, 368, 386
Spencer, A, 124, 132
Spotts, DM, 548, 571
Spurgeon, J, 918, 939
Spurr, R, 412, 490, 500, 503, 504, 520, 568, 783, 883, 884
Spurr, T, 412
Spurrm, R, 519
Sreekesh, S, 703
SSRDP, 926, 927, 940
Stabler, M, 15, 211, 219, 220, 272, 278, 395, 396, 402, 404, 406, 411–413, 578, 585, 602, 658, 680, 847, 867
Stankey, GH, 805, 806, 809, 810
Stanton, PJ, 65
Stare, M, 150, 169
State of Hawaii, Department of Business, Economic Development and Tourism, 240, 246, 248, 251, 253, 254
Statistics Canada, 670, 671, 680
Statistics New Zealand, 670, 680
Steel, F, 340, 358
Steenge, AE, 545, 571

Steines, DN, 545, 547, 570
Stern, RM, 43, 64
Stevens, T, 434, 435, 440
Stiglitz, J, 431–433, 790, 440, 810
St. John-Ives, E, 751, 759
Stocks, J, 694, 696, 698, 703
Stoeckl, N, 25, 845, 847, 867, 869
Stoklossa, CJ, 294
Stone, EA, 386
Stone, JRN, 60, 65
Štrach, P, 150, 165
Strauss, D, 466
Strout, AM, 622, 637
Stuart, G, 466
Sugden, R, 395, 399, 166, 413
Sugiyarto, G, 473, 478, 485, 489, 492
Sultan, E, 547, 569
Sunlu, U, 828, 842
Sunshine Coast Regional Council (SCRC), 447, 460, 466
Surfing Australia, 371, 375, 388
Sustainable Tourism Development Consortium, 750–752, 759
Suter, G, 384
Sutherland, W, 283, 294
Sutton, B, 519
Sutton, P, 385, 387, 937
Swait, J, 384
Swales, JK, 490
Swan, TW, 620, 621, 640
Swedenborg, B, 147, 169
Sweeting, J, 864
Swethurst, DP, 283, 296
Sydney Morning Herald, 434, 440
Sylvain Petit, 575, 603

Tabatchnaia-Tamirisa, N, 481, 492
Tadasse, B, 638
Takahashi, S, 94, 104
Tamasese, E, 751, 759
Tamberi, M, 588, 601
Tan, F, 7, 105, 119
Tang, CF, 631, 632, 639
Tang, FF, 179, 190
Tata Economic Consultancy Services, 125, 133, 703
Tauber, E, 88, 103
Taufatofua, RG, 749, 759
Tawfik, RT, viii, 27, 425, 911, 923, 940
Taylor, JS, 154, 168
Taylor, S, 156, 169
Taylor, T, 547, 569
TDA, 911, 926, 940
TECS, 691, 695, 696, 703
Tefft, N, 287, 296
Teisl, M, 847, 867
Teles, V, 489, 678
Telfer, DJ, 645, 647, 668, 679, 680
Terasvirta, T, 76, 83
TERI, 696, 703
Terpstra, V, 150, 169
Thaler, RH, 6
Thapa, P, 472, 491
Thapa, PJ, 510, 520
The Australian, 307, 309, 310, 312, 314, 315, 388
The China Business Review, 182, 190
The Daily Telegraph, 434, 440
The Economist, 312, 315
The Gallup Organization, 205
The Local, 314, 315
Theil, H, 44, 51, 52, 58, 59, 65
Thomas Cook, 193, 200, 201, 206
Thomas, B, 439, 693, 702
Thomas, RL, 42, 46, 48, 53, 56, 59, 65
Thomas, SE, 283, 297
Thompson, D, 57, 808, 852, 860, 867
Thrift, N, 239, 163
Thur, S, 434, 440
Tian, P, 18, 359
Tian, Y, 185, 189
Tietenberg, J, 802, 804, 810
Tigers in Crisis, 827, 841
Timothy, D, 260, 278
Timur, A, 570
Tirole, J, 581, 603
Tisdell, CA, 6, 14–16, 20, 21, 24, 26, 28, 30, 37, 65, 88, 101, 115, 118, 124–126, 133, 173, 190, 229, 248, 249, 254, 401, 418, 420, 421, 425, 431–436, 440, 441, 459, 463, 606, 617, 645–647, 680, 705, 722, 734, 745, 769, 770, 775–778, 780, 784, 788, 794, 799, 804, 808, 810, 819, 828, 829, 831, 832, 834, 841, 842, 928, 930, 931
Tivy, J, 805, 810
Tiwari, AK, 633, 640
Tjolle, V, 847, 867
Toda, HY, 628, 640
Todaro, MP, 611, 617, 652, 653, 680

Toh, RS, 118
Tomlinson, R, 466
Tooke, N, 275, 278
Toriki, S, 358
Tosi, J, 840
Tourism Council of the South Pacific (TCSP), 747, 759
Tourism Research Australia, 875, 876, 880, 884
Toyoda, T, 897, 900, 901, 909
Travel Journal, 246, 247, 254
Triandis, HC, 94, 102
Tribe, A, 769, 783
Tribe, J, 645, 647, 680
Triffin, R, 4, 30
TRIP Consultants, 746, 759
Trujillo, L, 357
Tsai, P, 140, 169
Tsampra, M, 222
TSAs, 19
Tucker, KA, 492
TUI, 195, 199–203, 206, 214
Turbelin, C, 296
Turgut, V, 570
Turner, D, 809
Turner, JL, 363, 364, 581, 602
Turner, RK, 387, 388, 425, 490, 790, 914–916
Turner, L, 293, 297
Turner, RK, 27, 465, 810, 938, 940
Turner, T, 837
Turvey, R, 394, 413
Tversky, A, 6

Ucbasaran, D, 170
Ullal, J, 841
Um, S, 569
UN, 119, 497, 519, 524, 541, 578, 580, 603, 648–652, 680, 836, 837
Ünal-Kesenci, D, 578, 602
UNCTC, 154, 169
UNDESA, 650–652, 667, 680
UNDP, 647, 648, 680, 692, 704, 836
UNEP, 828, 842, 846, 867, 921, 939, 940
UNESC, 152, 154, 169
UNESCAP, 742, 744, 746, 759, 760, 776, 780, 785
UNESCO, 126, 130, 299, 300, 316, 716, 726, 758, 820, 907, 909
United Nations, 35, 65, 154, 413, 525, 540, 604, 640, 692, 909, 921
United Nations and World Tourism Organization, 540
United Nations Conference on Trade and Development, 603
United Nations Statistics Division (UNSD), 520, 540
United Nations World Tourism Organisation (UNWTO), 497, 517, 520, 521, 603, 680, 867
University of Queensland, x, 3, 30, 281, 299, 306, 314, 316, 417, 441, 465, 493, 520, 761, 784, 785, 871
Untong, AK, 632, 640
UNWTO (United Nations World Tourism Organisation), 183, 198, 206–209, 229, 496, 526, 529, 540, 576, 646, 648–652, 666, 667, 669, 680, 681, 682, 692, 703, 743, 745, 760, 766, 784, 788, 811, 817, 846, 867, 868
US Census Bureau, 240, 254
US Department of Commerce, Bureau of the Census, 255
US Department of Commerce, Office of Travel & Tourism Industries, 255
US Government, Federal Inter-Agency River Basin Committee, Subcommittee on Benefits and Costs, 403, 413
USTOA, 192, 206
Uysal, M, 229, 253, 545, 571, 732, 739, 740
Uzawa, H, 49, 63

Vad, T, 150, 166
Vahlne, J-E, 142–145, 147, 166
Vaio, C, 345, 355, 357
Valente, S, 623, 624, 640
Valle, E, 473, 476, 491
Valleron, A-J, 296
Van Bueren, M, 370, 388
Van De Steeg, AM, 545, 571
van den Belt, M, 937
van den Bergh, JCJM, 940
van der Straaten, J, 940
Van Doren, C, 275, 278
van Heerden, JH, 482, 483, 489
van Herk, H, 94, 103
Van Ho, T, 490, 883
Van Ierland, EC, 938, 940
van Jaarsveld, AS, 938

Van Koppen, K, 938
van Rekom, J, 262, 278
van't Hof, T, 938
Vanetti, M, 153, 166
Vanhove, N, 15, 394–396, 406, 413, 414, 647, 663, 664, 668, 672, 681
Vanuatu Tourism Development Office (VTDO), 748, 760
Var, T, 34, 545, 547, 548, 65, 570
Varian, H, 287, 294
Vaske, J, 854, 868
Vaughn, R, 387
Vázquez, G, 387
Vecina, FA, 295
Vellas, F, 677, 681
Verhallen, TMM, 103
Vermeer, D, 862, 868
Vernon, J, 847, 868
Vernon, R, 140, 147, 169
Veronneau, S, 345, 358
Vincent, D, 519
Vining, A, 412
Viola, MR, 386
Viu, J, 270, 279
Vivanco, L, 828, 842
Vlosky, R, 847, 851, 860, 864, 868
Voase, R, 260, 279
Vogel, N, 849, 868
Vos, R, 487, 492
Vu, L, 294

Wagar, JA, 805, 810
Wagner, JE, 545, 571
Wagner, TH, 294
Wahab, S, 413, 576, 603
Wahidin, K, 785
Wales, TJ, 52, 53, 59, 63, 65, 74, 76
Walkenhorts, P, 570
Walker, KE, 445, 466
Wall, G, 543–545, 547, 570, 571, 647, 672, 679, 683–685, 703, 704, 805, 809
Wallace, K, 914, 916, 940
Wallenstål, M, 152, 164
Walsh, C, 750, 760
Walters II, WG, 254
Walters, C, 301, 307, 311, 313, 316
Walters, D, 199, 206
Walton, GM, 252
Wang, HY, 190
Wang, R, 190
Wang, Y, 548, 571
Wanhill, S, 12, 13, 205, 230, 259, 261, 268, 278, 279, 317, 318, 320, 321, 327, 337, 429, 441, 568
Wanner, C, 284, 297
Ward, FA, 462, 466
Warford, JJ, 790, 802, 810
Warnken, J, 848, 868
Watson, A, 808
Watson, AE, 568
Wattanakamolchai, S, 758
Wattanakuljarus, A, 474, 480, 492, 665, 681
Waugh, G, 775, 783
Waugh, RE, 545, 571
WCED, 790
Weaver, A, 342, 346, 349, 358
Weaver, DB, 818, 842
Weaver, JB, 287, 297
Weaver, SS, 297
Webber, AG, 663, 681
Wedel, M, 97, 100, 103
Weeden, C, 355, 358, 862, 866, 868
WEF, 217, 666, 681
Wei, SJ, 577, 600
Weidenfeld, A, 259, 279
Weiermair, K, 104, 150, 153, 169, 337
Weil, DN, 639
Weimer, D, 412
Weingessel, A, 101
Weinstein, AK, 150, 169
Weisfelder, CJ, 140–142, 169
Welch, LS, 138, 170
Welkenhuysen-Gybels, J, 94, 104
Wells, LT, 147, 170
Wells, MP, 819, 842
Welz, A, 938
Wen, J, 22, 126, 133, 173, 190, 432, 441, 725, 726, 734, 740, 799, 810, 819, 841
WES, 402, 412, 414, 415
West Gippsland Catchment Management Authority (WGCMA), 466
West, GR, 571
Westhead, P, 150, 170
Weston, R, 427, 441
Wet Tropics Management Authority, 849, 865, 868
Whalley, J, 485, 491, 506, 520
Wheeler, DC, 284, 297
Whelan, T, 805, 810

White, DS, 166
White, G, 458, 466
White, JT, 147, 161
White, KJ, 42, 65, 72, 73, 85
White, P, 434, 441
Whitehead, J, 853, 868
Whitton, T, 760
Wickens, MR, 112, 118
Wie, B-W, 345, 347, 359
Wiedersheim-Paul, F, 142, 166
Wight, PA, 818, 842
Wildlife Service Tasmania, 435
Wilkes, K, 270, 278
Wilkins, H, 315
Williams, A, 363, 388, 395, 399, 413, 664, 668, 681
Williams, CL, 623, 628, 638
Williams, D, 868
Williams, HC, 283, 296
Williams, M, 384, 833, 842
Williamson, OE, 141, 170
Willig, R, 277
Wilson, C, 14–16, 26, 28, 30, 417, 432, 436, 441, 442, 780, 784
Wilson, D, 696, 704
Wilson, EO, 815, 816, 820, 828, 834
Wilson, JG, 388
Wilson, MA, 367, 388
Wind, Y, 102
Winsted, KF, 150, 170
Winston, C, 238, 240, 241, 254
Witt, CA, 109, 110, 663, 668, 681
Witt, SF, 65, 109, 110, 118, 663, 668, 679–681
Wittmer, A, 210, 221
Wolak, R, 149, 170
Wolf, S, 846, 866
Woltering, M, 570
Wong, K, 321, 337
Wong, KC, 118
Wong, KKF, 548, 570
Woo, S, 125, 133
Woo, WT, 172, 189
Wood, D, 874, 881, 882
Wood, EH, 545, 571
Wood, PA, 150, 152, 168
Wood, TJ, 283, 297
Woodroffe, CD, 366, 384
World Bank, 106, 118, 119, 133, 633, 646, 658, 681, 758, 781, 810, 836, 837, 842, 940
World Commission on Environment and Development (WCED), 24, 790, 811
World Economic Forum, 681
World Tourism Organization (UNWTO), 229, 520, 523, 540, 617
World Tourism Organization/United Nations, 601
World Trade Organization (WTO), 603
World Travel and Tourism Council (WTTC), 497, 745, 760, 785
WRI, 815, 842
Wright, M, 170
Wright, R, 168, 814, 842
Wu, DC, 70, 732, 85

Xi, YP, 190
Xia, W, 852, 855, 868
Xiao, H, 181
Xiaodong, S, 353, 359

Yacob, MR, 774, 785
Yamamoto, T, 628, 640
Yanagida, JF, 492, 572
Yasui, T, 909
Yeoman, I, 474, 481, 489, 492
Yi, D, 291, 297
Yi, KM, 579, 601, 603
Yip, GS, 151, 167
Yochum, GR, 548, 567
Yong, J, 254
Yoo, JH, 101
Yoon, YS, 735, 739
Yoshida, K, 888, 895, 898, 909, 910
Yoshihara, K, 50, 51, 59, 65
Young, R, 447, 775, 785
Yu, C-M, 150, 169
Yu, ESH, 617
Yu, L, 8, 177, 179, 190
Yuan, M, 551, 571

Zachee, P, 295
Zakaria, F, 124, 133
Zapata, S, 355, 357
Zax, M, 94, 104
Zebregs, H, 696, 704
Zenelis, P, 9, 10, 216, 217
Zeng, Y, 852, 855, 868

Zhang, CZ, 22, 725, 726, 740
Zhang, HQ, 189
Zhang, J, 473, 484, 486, 492
Zhang, K, 189
Zhang, X, 387
Zhangjiajie Statistical Office, 725, 727, 740
Zhao, JL, 150, 156, 170
Zheng, J, 168
Zhou, D, 472, 473, 475, 476, 486, 492, 548, 572
Zientara, P, 752, 757
Zimmerman, F, 664, 681
Zimmermann, J, 284, 297
Zimmermann, KF, 287, 294
Zins, AH, 90, 94, 104
Zukin, S, 318, 321, 337

SUBJECT INDEX*

access, 13, 16, 41, 129, 147, 180, 186–188, 193, 200, 213, 217, 221, 226, 260, 261, 264, 268, 285, 288, 289, 292, 293, 314, 321, 326, 331, 344, 362, 363, 365, 370, 383, 430, 431, 433, 446, 451, 459, 462, 622, 655, 669, 676, 697, 701, 735, 749, 769, 777, 819, 835, 883, 889, 899, 908, 917, 930, 931, 933
admission charges, 11, 259, 266, 272, 333
advanced economies, 648, 651, 652, 659, 667
adventure tourism, 5, 711, 720
advertisement of tourism, government subsidies, 430
Afghanistan, 131, 207, 245
Africa, 324, 474, 591, 592, 594, 597, 632, 634, 636, 641, 678, 760, 775, 822, 826, 865
African countries, 132, 633, 826
African game reserves, 775
age of loneliness, 814, 815
agencies, 192
agreement on guidelines, 891
agricultural, 4, 29, 63, 64, 83, 121, 130, 172, 269, 387, 388, 442, 478, 492, 541, 581, 584, 587, 666, 672, 751, 754, 759, 775, 785, 843, 866–868, 874, 875, 882, 883, 910
agricultural development, 769
aid trap, 836
AIDS, 55, 56, 59, 60, 64, 69, 72, 82, 84
AIDS demand system, 33, 52, 54, 56, 60, 62–64, 67, 68, 73, 83, 84
AIDS model, 57, 68, 69, 72, 82
AIDS model, non-linear, 57, 70, 71
Air Arabia, 216
Air Asia, 216
air cargo services, 213
air transport, 8–10, 207–209, 211, 213–215, 217–221, 497, 516, 586, 596
air transport accessibility, 216
air transport and tourism, 207, 209–211, 217, 221, 224
air transport sector, 209, 210, 221, 585
air transportation, 225, 233, 234, 236, 238, 242, 243, 248, 249, 251, 345, 532, 537, 538
air transportation services, 237, 238
airfares and flight times, 239
airline companies, 194, 196, 218, 219
airline sector, 9, 10, 213, 215, 586
airlines, 9, 10, 43, 106, 124, 152, 192, 196, 213–221, 223, 236–238, 240, 241, 245, 353, 433, 439, 477, 529, 537, 580, 734
airport, 106, 207, 210, 218–221, 433, 475, 485, 676, 699, 709, 712, 727, 736, 737, 747
airports as gateways to tourism destinations, 218
airports, importance for the local economies, 219
Alaska, 343
almost ideal demand system (see *AIDS demand system*)
alternative development paradigm, 653
American Airlines, 215, 232, 241
amusement, 319, 326, 335, 677
amusement parks, 11–13, 268, 317–319, 664, 677
amusement parks, categories of, 320
Antarctica, 775, 843
Antigua and Barbuda, 625, 631
Applied General Equilibrium Models, 472
area life cycle, 8, 10, 212, 225–227, 473, 487, 739
Argentina, 591, 592, 594

*Entries relating to institutions/organizations are listed in both Author Index and Subject Index.

Aruba, 571, 670
Arunachal Pradesh, 20 21, 22, 705–723
Arunachal Pradesh, growth in its tourism, 721
Arunachal Pradesh, identified tourist spots, 709, 712, 713, 720
ASEAN region, 7, 105
Asia, 4, 70, 106–108, 110, 115, 118, 132, 163, 183, 205, 245, 249, 268, 299, 303, 304, 312, 316, 322–327, 335, 519, 541, 693, 706, 709, 710, 760, 822, 839, 840, 939
Asia-Pacific region, 167, 198, 761
Asian economies, 4, 303, 628
Asian financial crisis in 1988, 179
asymmetric information, 288, 289, 292, 293, 790, 796
attraction development, 259, 263, 267, 275, 276
attraction product, 261, 271
attractions, 11–13, 21, 23, 25, 26, 28, 36, 41, 106, 109, 117, 129, 157, 209, 211, 260, 261, 263, 264–270, 272, 273, 275, 278, 317–319, 321, 325, 326, 328–337, 393, 426, 431, 478, 480, 486, 494, 497, 559, 564, 580, 668, 673–677, 710, 714, 716, 720, 726, 732, 767, 787, 794, 801, 825, 848, 851, 853, 855, 856, 858, 859, 861, 871, 872, 874–876, 879, 881
attribution factor, 874
Australia, 3, 12–14, 16, 18, 25, 26, 29, 33, 43, 63, 66, 67, 79, 81, 83, 85, 87, 104, 107, 110, 116, 131, 168, 183, 215, 268, 283, 287, 299–304, 306–313, 315, 316, 324, 325, 359, 363, 371, 375, 384, 386–388, 407, 412, 413, 417, 430, 434–436, 439, 443, 445, 447, 463, 465, 466, 472, 473, 475, 477, 482, 490, 492, 493, 495, 500, 502–505, 511–516, 520, 568, 569, 591, 593, 605, 649, 725, 740, 743, 755–758, 761, 765, 773, 783, 785, 787, 808, 830, 842, 845, 848, 849, 869, 871–873, 875, 877, 881–884, 910, 937
Australia's world heritage areas, 866, 876
Australia — expenditure by tourists who visited national or state parks, 875
Australian higher education sector, 301
Australian national parks, 25, 864
Australian tourism, 70, 81, 83, 493, 519
Austria, 12, 66, 85, 103, 198, 649, 664, 681, 921
Austrian Airlines, Olympic Airways, 216
aviation services, 10, 221

backpacker, 748, 755, 856
backpacker destination, 694
Bakken, 317, 318
barriers to internationalisation, 146
beach activities, 363
beach and foreshore economics, 444
Beach conservation activities, 450
beach environments, 363
beach expenditure, 458, 461
beach management, 460, 465
beach protection, 14, 377–379, 381, 283, 445, 458
beach protection and maintenance, 16, 17
beach recreation, 361, 371, 387, 455, 456, 461, 464
beach replenishment, economic assessments of, 446
beach resorts, 694, 830
beach tourism destinations, 363
beach valuation studies, 361, 365, 367
beach, sun and surf tourism, 11, 361
beaches, 13, 14, 16, 17, 37, 38, 361–364, 367, 369, 374–376, 379, 383, 386, 413, 444–446, 450, 452, 455, 457, 459–466, 549, 673, 674, 676, 684, 686, 689, 691–694, 700, 747, 775, 776, 791, 796, 828, 932
beaches and foreshores, 443, 444, 446, 447, 451, 464, 466
beaches as societal assets, 443
behavioural economics, 6
behavioural economics, experimental economics, 28
Beijing Olympics, 174, 473, 482–484
Belgium, 198, 201, 325, 393, 414, 490, 549, 649
Belize, 357, 775
benefits, 7, 15, 17, 21, 27, 30, 34, 38, 115, 129, 164, 196, 203, 242, 244, 261, 265, 269–271, 273, 290, 302, 305, 309, 329, 334, 347, 356, 362, 365, 368, 377, 378, 379, 387, 393, 394, 396–398, 401, 404, 405, 407, 408, 410–413, 417, 419–423, 425, 426, 430, 432, 434, 437, 440, 443–445, 447, 450, 456, 460–464, 476,

481, 483, 485, 499, 501, 512, 545, 546, 552, 555, 556, 559, 565–568, 606, 617, 622–624, 652, 656, 657, 660, 663–665, 669, 672, 678, 684, 696, 722, 727, 735, 741, 742, 749, 755, 756, 775, 777, 781–784, 788–791, 795, 797–799, 803, 804, 806, 811, 817, 819, 824, 835, 846, 847, 857, 859, 863, 866, 873, 883, 887, 899, 907, 911, 912, 914, 916–921, 923, 935, 936
benefits and values, 915
benefits of beach recreation, 452, 455
benefits of conservation, 937
benefits of nature, 937
benefits', 395
Bergson-type social welfare function, 420
Bermuda, 351, 567, 568
Bhutan, 130, 710, 833
Bihar, 123, 126, 127, 129, 130
biodiversity, 25, 27, 126, 439, 705–707, 709, 710, 721, 768, 795, 813, 815, 817, 820, 821, 830, 831, 833–835, 839–841, 864, 866, 884, 892, 896, 912, 918, 919, 921, 922, 932, 939
biodiversity conservation, 419, 441, 828, 842
biodiversity hotspot, Indo-Burma, 707
biological diversity, 444, 776, 808
biosphere, 711, 814, 820, 839
BonBon-Land, 321, 325
Bophuthatswana, 827
born globals, 144, 160, 167
Botswana, 591, 593
boundaries, 816, 912–914
bounded rationality, 6, 14, 16, 438
Brazil, 125, 169, 203, 473, 476, 487, 549, 591–593, 815, 831
Britain, 13, 70, 131, 223, 260, 264, 290, 309, 318, 327, 549
Brundtland Report, 653
budget constraint, 44, 47, 48, 50, 211, 212, 607, 615
bundled holiday package, 214
business, 138, 538
business travel, 84, 219, 237, 238, 499, 524–526, 531, 532, 534, 536, 539

California, 243, 244, 317, 319, 321, 324, 337, 363, 364, 375, 387, 702, 808, 841, 939
Cameron Government, 309
Canada, 63, 69, 75, 82, 122, 131, 198, 201, 215, 247, 254, 255, 260, 270, 283, 287, 310, 316, 327, 351, 500, 519, 529, 591–593, 648, 649, 667, 670, 671, 680, 809
canned hunting, 827, 826
capacity, 16, 40, 122, 173, 175, 208, 210, 219, 225, 232, 240, 243, 248, 260, 267, 272, 273, 310, 312, 313, 332–334, 339–341, 343, 345, 347, 349, 353, 359, 409, 431, 443, 448, 477, 481, 549, 622, 625, 635, 663, 671, 672, 675, 692, 734, 772, 789, 790, 800, 801, 866, 900, 907, 918, 919, 926
capacity concept, 806
capital coefficient, 645, 654–656, 658, 659, 673
capital formation and inbound tourism, 605
carbon offset schemes, 830
carbon tax on tourism output, 518
Caribbean, 198, 214, 323, 342–346, 351, 355, 571, 678, 755, 760, 808, 815, 938
Caribbean cruise tourism, 358
carrying capacity, 218, 225, 226, 229, 230, 233, 253, 686, 703, 758, 774, 776, 787, 794, 804, 806, 809, 810, 813, 829–831, 905, 910, 911, 931–935, 938, 939
carrying capacity, social, 229, 244
carrying capacity concept, 432, 805, 806
carrying capacity of the planet, 817
carrying capacity, ecological, 805, 907, 931
casino tourism, 750
casinos, 219, 317, 504, 570, 677, 699, 700, 827
catch up, 171, 176, 179, 472
catching up by China's hotel industry, 175
causality, 619, 627–632, 634, 635
CBA, 420, 421
CCTs, 837
celebratory phase, 271
Central America, 324, 824
certification, 187, 296, 780, 828, 845, 846
certified tourism products, 855, 857
certified, tourism products, knowledge of, 857
CGE, 495
CGE database, 507, 510
CGE model, 511

CGE model, dynamic, 483, 484, 486
CGE modelling, 506, 520
characteristics, determining the relevant one, 93
consumer demand, characteristics theory of, 211
charter airlines, 9, 198, 200, 213, 214, 216, 217
charter flight tourists, 697
Chhattisgarh, 123, 126, 127, 129, 130
China, 4, 8, 12, 20, 22, 30, 107, 110, 115, 116, 118, 122, 125, 126, 133, 170–190, 203, 232, 284, 294, 303, 304, 308, 310, 312–314, 326, 335, 336, 343, 473, 528, 541, 602, 633, 649, 651, 677, 704, 714, 725–727, 730, 732–735, 737–740, 755, 766, 827, 833, 868
China catch up, 8
China Hotel Industry, 189
China, private hotel firm, 179
China's, 21, 126, 133, 171, 172, 174, 177, 182–187, 303, 326, 478, 491, 726, 739, 814
China's development, 740
China's domestic tourism, 174, 175
China's economic development, 190
China's economic growth, 172, 189
China's economic reform, 171, 172, 175, 176, 187
China's economic reforms, 174
China's hotel industry, 8, 9, 171, 172, 189
China's international tourism, 173
China's lodging sector, 8, 171, 172, 175, 178, 186, 187
China's lodging sector,, 177
China's lodging sectors, 8
China's outbound tourism, 180
Chinese domestic hotel firms, 180, 185
Chinese growth, 303, 304
Chinese hotel corporations, 172
choice experiment to value the recreational benefits, 921
choice experiments, 911, 923, 935, 936
choice modelling, 13, 368, 370, 405, 882, 923
civil unrest, 121, 123
civil wars, 821
climate change, 17, 66, 85, 361, 362, 365, 383, 384, 388, 389, 440, 443, 444, 459, 460, 462, 464, 481, 506, 520, 765–767, 772, 783, 784, 815, 878, 879, 881, 883, 884, 941
climate change impacts, 464
climate change impacts on beaches, 366
clusters, 19, 89–91, 93, 96, 97, 541, 554, 555, 559, 560, 562, 660, 796
CO_2 emissions, 767
CO_2-e emissions, 767
coast, 361
coastal, 366
coastal and marine environments, 768, 794
coastal areas, 186, 361, 683, 689, 692, 698, 767
coastal assets, 365, 383, 465
coastal cruising, 340, 343
coastal economy, 363, 366
coastal infrastructure, 371, 377
Coastal recreation, 775
coastal tourism, 222, 361–363, 366, 371, 388, 781, 911, 938
coastal tourism assets, 361, 362
coastal tourism, its sustainable and quality, 692
Colombian drug barons, 821
Columbia, 65, 84, 166, 222, 254, 318, 358, 591, 592, 594
Commission of the European Communities, 497
common pool, 771, 773, 777, 782, 872, 883, 885, 900, 905
common pool resources (CPRs), 885, 891, 893, 899, 900
common property, 787, 792, 793
common property as a source of market failure in tourism activity, 792
common-property resources, 790, 792
communal management, 885
community-based approach, 824, 837, 838
community-based approach of ecotourism, 835
community-based co-management of Ogasawara, 906
community-based ecotourism management (CBEM), 885
community-based ecotourism management of Minami-jima Island, 906
competencies and customers, 199
competition from other destinations, 245–247
complete demand systems, 6, 35, 50, 70

Computable General Equilibrium (CGE), 17, 28, 393, 406, 471, 472, 490–493, 495, 570, 875
conditional cash transfer programs, 837
conditionalities, 837, 838
conservation, 3, 5, 16, 17, 23–25, 27, 30, 254, 364, 367, 385, 432–439, 441–444, 451, 465, 680, 692, 723, 733, 765, 768–771, 773–775, 781, 783, 784, 808, 809, 813, 815, 818–823, 825–829, 835–843, 864, 865, 872, 881, 882, 885, 887, 898–901, 904, 907, 909, 910, 912, 914, 928, 936, 937–940
conservation and ecotourism, 893
conservation issues, 765
conservation and tourism, 3, 939
conservation benefits, 436
conservation NGOs, 832, 835
conservation of natural resources, 435, 824, 908
conservation organisations, 825, 836, 837
conservation zones, 821
conservationists, 25, 822, 823, 827, 838
conservative spending, 874
conservative spending measure, 26, 874
consolidation, 179, 191, 193, 199–201, 204, 206, 357, 784, 868
constraints to tourism development in PICs, 755
consumer heterogeneity in tourism, 100
consumer surplus, 397–400, 408, 413, 434, 446, 452, 455, 456, 462, 464, 873, 881, 934
consumer surplus and the entry producer surplus, 393
consumer theory of demand, 33, 43
contingent valuation, 277, 368, 369, 377, 378, 383–386, 387, 405, 440, 783, 785, 882, 849, 850, 865, 866, 868, 873
  Contingent Valuation Method (CVM), 275, 367, 368, 369, 384, 387
Contingent Valuation of Environmental Resources, 387
contribution to foreign exchange, GDP and employment, 744
Convention on Biological Diversity, 833
Cook Islands, 385, 741–744, 746–749, 757, 758, 791
Copenhagen, 317, 318, 783
Copenhagen's Tivoli Gardens, 269, 318, 323
coral cover, 27, 815, 929, 931, 932
coral reef services,, 915
coral reef unit value, 922
coral reef zonation, 920
coral reefs, 768, 782, 796, 820, 834, 911–914, 920, 921, 926, 928–932, 936–940
coral reef, its value 912
corporate social responsibility, 190
corporate social responsibility (CSR) policies, 752
corporate social responsibility activities, 23, 753
corruption, 685, 699, 825, 834, 837
cost and benefit items, their identification, 393, 402
cost efficiency, 290
cost management, 353
cost of transportation, 39, 238
cost-benefit analysis, 413, 417, 438, 445, 466, 873, 925
cost-benefit analysis, private, 15, 419, 420
Costa Rica, 439, 440, 591–593, 775, 783, 820, 828, 840
costs, 605
costs and benefits, 15, 19, 20, 281, 355, 365, 394–396, 400–402, 404, 406, 407, 420, 605, 609, 788, 842, 867, 934, 935
costs and benefit, quantification, 402
Cote d'Ivoire, 821
creative industries, 275
cross-cultural research, 101
cross-price elasticities, 51, 53, 72, 77, 78, 81, 115, 117
cross-price elasticity, 70, 342
cross-price elasticity of demand, 342, 343
crowding-out effects, 403
cruise industry, 340, 345–347, 356–359, 473, 485, 491
cruise industry, North American, 357
Cruise Lines International Association (CLIA), 340, 357
cruise ship tourism, 357, 358, 750
cruise ships, 13, 246, 323, 340, 349, 350, 354–356, 537, 768
cruise ships, new, 350
cruise tourism, 13, 339, 340, 355, 357, 358, 492

cruise-fly, 485
cruising, 13, 196, 231, 232, 234, 339–347
cruising, direct expenditure value, 356
cruising capacity, 343
cruising markets and geography, 342
cruising product, 13, 347, 349
cruising, price elasticity of demand for, 347
cruising regions, 343
cruising travel agents, 344
cruising's, 343
cultural, 11, 21, 27, 36, 94, 101–104, 107, 125, 147, 148, 155, 156, 158, 161, 163, 164, 184, 264, 265, 270, 275–278, 285, 335, 336, 367, 369, 371, 383, 411, 426, 484, 504, 551, 559, 563, 567, 578, 646, 648, 650, 652, 653, 656, 660, 664, 668, 673, 674, 677, 683–685, 692, 694, 703, 709, 710, 719, 734, 755, 760, 773, 787, 789, 799, 801, 807, 814, 818, 886, 887, 892, 909, 916–918, 922
cultural attractions, 641, 666, 677
cultural development, 260
cultural distance, 155–158
cultural heritage, 39, 222, 278, 568, 673, 689, 705–707, 892
cultural tourism, 260, 664, 677, 710
culturally, 155, 867, 887
culture, interaction of Chinese and Korean, 737
Cyprus, 473, 479, 485, 489, 568, 591–593, 649
Czech Republic, 670

damages, 800
demand
  conditions, 38
  elasticity, 77, 109
demand for tourism, 3, 5, 6, 7, 34–36, 38, 40, 41, 43, 60, 69, 71, 72, 77, 79, 81, 83, 84, 107, 108, 111, 112, 115, 423, 429, 494, 625, 766
demand functions, properties of, 35, 47
demand model specification, 44
demand modelling, system approach, 42, 72
demand systems, 51–53, 56, 60, 61, 64, 67–69, 70–72, 76, 82, 84
demand systems, estimation of, 72, 75
Democratic Republic of the Congo, 823
demographic transition, 816
Demonstration effect, 622, 669, 685
Deng Xiaoping, 176
Denmark, 271, 321, 324, 325, 427, 568, 569, 649, 739
density clusters, 96
desertification, 815, 840
destination parks, 319, 321, 326, 327, 330, 331, 333
developed and developing countries, 154, 286, 297, 590, 623, 636, 647, 652, 660, 661
developed countries, 106, 107, 175, 185, 187, 215, 282–284, 287, 290, 293, 419, 596, 598, 599, 646–649, 652, 654, 657, 659, 662, 668, 669, 672, 677, 683, 788, 793, 830, 833
developing an attraction, 267
developing countries, 20, 21, 106, 131, 153, 167, 175, 281, 282, 285, 289, 291, 296, 371, 435, 472, 487, 575, 590, 593, 595–597, 599, 622, 625, 636, 646, 652, 654, 658, 661–663, 666, 668–671, 675–677, 683, 702, 788, 789, 793, 797, 833
developing countries, management contracts, 154
development, 8–13, 16, 17, 21, 23–26, 28–30, 33, 38, 66, 67, 85, 88, 90, 126, 130, 132, 133, 137, 145, 146, 163, 164, 166, 167, 169–172, 174, 176, 177, 179, 181–183, 184, 186–189, 198, 204, 214–221, 227, 229, 230, 233, 241, 250, 252, 259, 265, 266, 268–270, 274, 276, 278, 295, 303, 317, 318, 322, 323, 325–329, 333, 335, 339, 340, 345, 349, 356, 361–363, 365, 393, 402, 404, 417–420, 422, 429, 430, 436, 458, 459, 471, 472, 485, 486, 494–497, 498, 500, 506, 519, 520, 543–545, 547, 551, 565, 566, 569, 572, 575, 582, 587, 596, 599, 603, 612, 617, 621, 627, 628, 634, 637–640, 645–652, 654–656, 658, 660–666, 670, 672–679, 680–683, 685, 686, 688, 689, 691–694, 696–698, 700–702, 704, 705, 707, 712–714, 719–722, 725, 727, 730–733, 738, 739, 741, 742, 747–751, 752, 756, 757, 758–761, 765–768, 770, 771, 772, 774, 775, 780, 782–784, 787–790, 795–799,

801, 804–809, 811, 813, 815, 819, 820, 825, 828, 829, 831, 833, 836, 838, 839, 846, 859, 865–868, 889, 899, 900, 907, 908, 913, 918, 926–928, 930, 933, 936, 937, 939, 940
development process for an attraction, 268
direct visitor impact, 779
discount rates, 421
Disney, 264, 274, 277, 317, 319, 321, 322, 324, 326, 331, 332, 335, 345, 346, 353, 677
Disney Corporation, 260
Disneyland, 268, 269, 277, 319, 321, 326, 336
distribution of income, 165, 418, 420, 438, 665
dive tourism, 27
dive tourism management, 27, 911
divers and snorkelers, 913, 930
diving impacts, 928
(domestic) travel to Hawaii, 247
domestic tourism, 71, 83, 121, 125, 126, 128, 129, 131, 171, 178, 186, 187, 207, 423, 475, 478, 480, 510, 536, 661
dry parks, 318, 319, 323, 332
duality theory, 45, 63
Dubailand, 335
Dutch disease, 605, 606, 609, 617, 634

e-intermediaries, 204
E-ticketing, 216, 220
eclectic paradigm, 141, 142, 144, 146–148, 153, 164
ECO certification, 845, 848, 849, 852–855, 858–859, 862
ECO Certification, perceived contribution to sustainability, 860
eco-certification, 865, 866
ecological certification of tourism (ECO certification), 25
ecological footprint, 816, 829, 830, 841
ecological impacts, 441, 567, 789, 933
ecologically sustainable development, 465
economic contribution, 505, 517, 520, 683
economic contribution of tourism development, 659
economic development, 3, 5, 20–23, 30, 118, 132, 156–158, 169, 173, 175, 189, 207, 221, 278, 316, 420, 530, 531, 538–541, 544, 568, 604, 618, 619, 633, 636, 637, 654, 810, 869, 883, 886, 912
Economic Development and Tourism, 3, 119, 246, 248, 251, 253, 254, 523
economic developmental benefits, 645, 646
economic evaluation of alternatives, 418
economic growth, 3, 4, 12, 20, 106, 117, 122, 123, 169, 172, 175, 186, 249, 264, 269, 277, 303, 308, 309, 494, 506, 519, 555, 566, 619, 621, 623–627, 630–640, 645, 646, 652, 653, 655, 656, 658–661, 663, 673, 677, 678, 727, 740, 741, 758, 807, 814, 817
economic impact, 15, 16, 19, 124, 132, 133, 222, 277, 315, 329, 342, 355, 357, 361, 363, 377, 386, 406, 407, 412–414, 437, 472, 475–479, 481–484, 486, 487–492, 501, 502, 505, 517, 541, 543, 546, 548, 565, 566, 568, 571, 572, 741, 742, 754, 756, 760, 783, 785, 873, 875, 876, 878, 879, 822
  economic impact of tourism, 567, 569, 570, 757
economic impact analysis, 14–17, 26, 28, 393, 417–419, 422, 423, 437, 438, 493, 495, 505, 517, 521, 875
economic impact measures, 881
economic impact of cruises, 13, 354
Economic impacts of cultural heritage, 568
economic impacts of tourism, 18–20, 471, 472, 492, 520, 544, 545, 547, 571, 645, 647, 653, 659, 665, 741
economic liberalism development paradigm, 652
economic tourism, 3
economic valuation methods, 871
economic value, 13–16, 21, 25, 277, 369, 374, 377, 385, 386, 388, 389, 422, 543, 548, 549, 554, 566, 787, 791, 867, 872, 873, 878, 881, 882, 884
economies of scale, 9, 147, 148, 157, 197, 228, 339, 347, 350, 353, 424, 430, 620, 622
Ecosystem, 939
ecosystem service approach, 911
ecosystem services, 16, 362, 367, 385, 432, 872, 915, 917, 918, 938
ecosystem services, different perceptions and interests, 918

ecosystem services approach, 27, 911, 912, 914, 916, 937, 940
ecosystem services classification, 916
ecosystems, 777, 779, 828, 892, 907, 912, 914, 918, 920, 921, 931, 937
ecosystem, its ecological succession, 919
ecotourism, 22–26, 30, 357, 419, 653, 705, 707, 719, 722, 723, 740, 748, 769, 770, 773, 783, 775, 784, 785, 796, 799, 809, 810, 813, 817, 818, 820, 822, 826, 828, 830, 832, 836, 838, 840, 842, 864, 866, 867, 898, 900, 908, 910, 911, 926
ecotourism, its resource-base, 820
ecotourism, real, 818, 828, 830
ecotourism and conservation, 828, 837
ecotourism and conservation zones, 827
ecotourism and realpolitik, 832
ecotourism as a tool for sustainable local/regional economic development, 888
Ecotourism Australia, 848, 865
ecotourism development, 834
ecotourism markets, 824, 832
ecotourism, factors determining the possibility, 820
ecotourism, failure of projects, 829
ecotourism, its sustainability, 888
ecotourists, 712, 828, 831, 836
ecotours, 886, 888, 897, 899, 900, 903, 909
education, 10, 12, 103, 130, 133, 143, 173, 267, 299, 300, 303, 305, 310, 344, 411, 464, 497, 504, 514, 516, 552, 559, 560, 572, 620, 633, 634, 646, 647, 653, 671, 672, 678, 680, 682, 703, 752, 753, 755, 756, 760, 788, 808, 854, 867, 869, 916–919, 922, 932
ecotours, rules for, 889
Education Australia, 102
education exports, 299, 300, 302–304, 308, 313
education exports, growth in, 311, 313
education services, 299, 300, 302, 303, 312, 315
education trade, various sectors in it, 307
education tourism, 117, 299, 300, 302, 306, 309, 311, 314
education tourism significance for universities, 304
education tourism, size and significance, 302
educational, 30, 687
educational activity, 259
educational tourism, 12
Egypt, 23, 124, 577, 651, 667, 676, 679, 912, 926, 938, 940
Egypt, employment opportunities, 926
EKIG hypothesis (see Export Capital Good Imports Growth hypothesis)
Elasticities of demand, 54, 79
elasticity of demand, 38, 47, 77, 78
elasticity of tourism demand, 105
elephants, 824, 831, 836
emerging economies, 649, 650, 652, 667, 683
empirical results, 76, 105, 107, 117, 152
empirical tourism demand, 33, 34
employment, 3, 21, 33, 35, 122, 270, 293, 305, 313, 351, 354, 355, 406, 422, 428, 476, 479, 483, 487, 488, 496, 498, 499, 501–503, 505–507, 509, 511, 518, 520, 543–547, 551–555, 557, 558, 565, 566, 569, 600, 605, 606, 611, 612, 617, 622, 623, 645, 650, 660, 669–672, 685, 696, 703–705, 707, 721, 741, 742, 746, 749, 751–753, 756, 768, 770, 788, 799, 801, 804, 806, 824, 845, 877–879
employment multipliers, 543, 547, 555
energy use, and tourism, 24, 766
energy use, global tourism-related, 767
Engle–Granger test, 112
entrance, 396, 911
entrance fees, 334, 436, 439, 825, 923, 924, 925, 930, 934, 936
entry fees, 431, 433, 435, 441, 872, 873, 882
entry formalities, 718, 721
entry mode decision, 146
entry-mode decisions in the hotel sector, 156
environment, 3, 24, 30, 96, 102, 103, 106, 133, 154–157, 168, 185, 213, 214, 216–218, 220, 221, 254, 260, 311, 378, 386, 388, 426, 440, 460, 464, 465, 480, 511, 590, 612, 621, 639, 646, 675, 694, 698, 766, 703, 722, 754, 759, 769, 773, 776, 777, 785, 790, 793, 795, 797–801, 803–805, 807, 808, 810, 811, 816, 818, 819, 823, 826, 831, 833, 837, 861, 863,

864, 866–868, 878, 879, 881–883, 886, 887, 889, 890, 893, 894, 896, 899, 909, 912, 921, 927, 930, 933, 939–941
environment and tourism, 3, 18
environment, its preservation, 700
environment, its undervaluation, 796, 800
environmental and conservation issues, 23
environmental and conservation considerations, 765
environmental degradation, costs of, 486
environmental and economic sustainability, 872
environmental and energy accounts, 471
environmental costs, 363, 393, 396, 798
environmental damage, 355, 385, 486, 659, 675, 698, 701, 770, 771, 774, 796–798, 802, 803, 826
environmental damage, irreversible, 801
environmental degradation, 212, 217, 700, 768, 771, 774, 795–797, 801, 802, 804, 898
environmental education, 685, 700, 886, 887, 930
Environmental Education Forum, 886
environmental externalities, 425, 765, 779, 781, 782, 804
environmental externalities associated with tourism, 779
environmental factors, 226
environmental goods, 370, 422, 660, 769
environmental goods in tourism development, 678
environmental goods valuation, 673
environmental impact, 426, 444, 768, 770, 776, 780, 801
environmental impact assessment, 218, 686, 780, 829
environmental impacts, 27, 426, 627, 653, 675, 684, 791, 792, 798, 799, 807, 859
environmental impacts of tourism, 18, 474, 480, 492, 500, 779, 789, 809, 842
environmental limits, 657, 659
environmental policy instrument, 765, 774, 780, 782
environmental policy, economic theory of, 778
environmental problems, 10, 771, 772, 778–780, 798, 807
environmental protection, 771, 808, 833, 869, 881, 884
environmental quality and inbound tourism, 605
environmental resources, 23, 229, 765, 766, 769, 771, 772, 776, 778, 782, 789, 794, 800, 828
environmental spillovers, 420, 766
Environments used by tourism, 792
equilibrium models, 15, 493, 519, 572, 627
equity investments, 154
erceived contribution of ECO Certification, 861
error correction model, 105, 107, 628, 634
essential force: quality scenery and convenient infrastructure, 735
Estimation of Tourism Demand, 67
Etour, 510, 511
Europe, 9, 64, 65, 69, 70, 84, 85, 110, 113–115, 122, 155, 161, 183, 190, 192, 194, 195, 198–200, 203–205, 213–217, 222, 223, 268, 316, 318–325, 327, 330, 331, 333, 336, 343, 413–415, 429, 575, 584, 672, 727, 744, 760, 781, 814, 940
European, 82, 103, 132, 163, 165
European Union, 215, 479, 586, 670, 678, 940
Event China, 314
exchange rate, 108, 110, 304, 307, 309, 312, 474, 475, 480, 483, 487, 582, 631, 634, 636, 662, 681, 788, 925
exchange rate effect, 110, 115
exchange rate effects, 110
exchange rate policy, 771
exchange rates, 39, 113, 299, 303, 314, 499, 518, 669
expenditure approach, 871, 881
expenditure elasticities, 56, 59, 70, 79–81
expenditure pattern, 65, 543, 550, 569, 571
Export Capital Good Imports Growth hypothesis (or EKIG hypothesis), 625
export tourism, 37, 619
export-led growth, 619, 623, 627, 628, 635, 636, 638
export-led growth literature, 627
exports and economic growth, 623, 636, 637, 641
external agents, 795
external economies, 393

external environmental costs, 425
externalities, 15, 275, 299, 393–396, 402, 413, 420, 429, 607, 621, 627, 766, 770, 772, 774, 778, 790, 792, 800
externalities and tourism, 395
externalities as a source of market failure in tourism activity, 791
externalities, common property, 791
externalities, negative, 24, 395–397, 406, 545, 675, 769, 781, 782
externalities, positive, 396, 397, 486, 620, 781, 782
externality, 395, 765, 787, 791, 802–804

family parks, 327
FDI, and risk in the destination country, 155
Federated States of Micronesia, 746
FIFA World Cup, 471, 474, 482, 483, 569
Fiji, 20, 22, 23, 123, 124, 471, 473, 482, 491, 570, 741–746, 747, 748, 750–753, 755–760
Finland, 356, 591–593, 649
firm size, 148, 158, 159
'flagship' enterprises, 329
flag carriers, 9, 213, 214, 216
flags of convenience, 351
flagship species, 825, 829, 831
floating resort, 340
flora and fauna, 126, 218, 379, 675, 705, 711, 776, 779, 791, 792, 828, 917
fly-cruise, 485
footloose industry, 13
forecasting future tourist flows, 34
foreign capital investment, 658
foreign direct investment, 138, 140, 162, 164, 168, 169, 171, 172, 175–177, 181, 185–187, 576, 601, 680, 755, 759
foreign direct investment by Chinese hotel firms, 185
foreign exchange, 12, 33, 106, 300, 303, 304, 506, 605, 606, 616, 617, 622, 623, 625, 639, 665, 666, 668, 685, 706, 741, 742, 747, 756, 770, 788, 815, 826
foreign exchange rate, 148
foreign markets, modes of penetrating, 148
foreign operation of tourist accommodation, 748
foreign reserves, 20, 605, 606, 614, 616, 617
foreign resources and inbound tourism, 605
foreign students, 12, 299, 300, 302, 305
foreign tourists, 40, 83, 122, 362, 427, 476, 479, 584, 605, 607, 609, 610, 614, 616, 624, 665, 666, 669, 693, 695, 706, 713, 715, 717, 718, 911, 912, 929
forest cover, 815
Formula 1 Grand Prix, 407, 408, 410
fragmentation of the value chain, 577
France, 113, 198, 216, 223, 300, 325, 335, 336, 549, 575, 603, 609, 618, 640, 649, 921
franchise agreement, 162, 181, 576
Fraser Island, 770, 781, 910
free-rider problems, 430, 900, 907
French Guayana, 823
French Polynesia, 22, 743, 744, 746–748, 750, 791
funfairs, 326
Futurescope, 333

Galapagos Islands, 775, 828, 898, 899
gambling, 504, 516, 700
gambling casinos, 827
game-viewing tourism, 834
GATS (see *General Agreement on Trade in Services*)
General Agreement on Trade in Services (GATS), 198, 589
German, 113
Germany, 102, 182, 192, 195, 197, 198, 217, 300, 325, 350, 549, 591, 592, 594, 597, 649, 651, 659, 664, 667, 694, 813, 841, 843, 921, 933
global cruise passengers, 341
global cruising, its value of, 341
global economic and financial crisis, 207
global economy, 137, 171, 172, 357, 358, 481, 683
global financial crisis, 174, 245, 286, 308, 310, 313, 322, 473, 478, 491, 744, 783
global hotel chains, 243
global market, 132, 146, 180, 188, 199, 286, 344, 347
global marketplace, 868
Global Peace Index (GPI), 131, 132

global tourism, 4, 22, 165, 304, 600, 601, 646, 669, 811, 865, 908, 910
global warming, 24, 767, 793, 830
globalisation, 138, 146, 156, 296, 297, 324, 478, 479, 576, 577, 579, 582, 600, 722
globalisation in tourism, 19, 575–577, 595
globalisation process, 137
globalised economy, 646
Goa, 20, 21, 170, 356, 683, 684, 686, 688–702, 704
Goa, growth of its tourism sector, 693
Goa, impacts of the tourism growth, 696
Goa Chamber of Commerce and Industry (GCCI), 689
Goa Tourism Development Corporation (GTDC), 691
Goa, process of development, 684
Goa, process of tourism development, 690
Goa, tourism development and social problems, 697
Goa's Vigilant Army, 697
Gold Coast, 14, 17, 29, 30, 252, 325, 372–377, 380, 386, 387, 388, 413, 439, 443–445, 449–452, 453, 455–462, 464–466, 783, 882–884
Gold Coast beaches, 379, 448
Gold Coast City Council, 16, 17, 375, 385, 445, 447, 464–466
good tourism policy, 782
gorillas, 835
government revenues from tourism, 746
government sector, 807
GPAUNIT, 887, 890, 891, 894, 896, 898–900, 903
gravitational attraction, 121
Greece, 161, 168, 207, 223, 224, 351, 591, 592, 633, 649, 671, 864
green products, 854
Gross Domestic Happiness, 833
gross domestic product, 172, 250, 477, 498, 499, 502, 506, 508, 523, 524, 536, 647, 741, 742
Gross World Product, 814
growth of global tourism, 33

Hawaii, 10, 18, 70, 225, 230, 232–238, 240–255, 344, 363, 427, 428, 440, 472, 476, 481, 485, 487, 490–492, 523, 524, 528, 530, 532, 536–538, 540, 670, 791
Hawaii, domestic travel, 247
Hawaii, visitor arrivals by air, 231
health, 35, 72, 117, 130, 151, 196, 208, 267, 270, 281, 282, 284, 286–290, 292–297, 364, 366, 516, 529, 552, 558, 559, 563, 620, 634, 646, 647, 660, 740, 752, 753, 830, 838, 928, 930, 932
health insurance, 283, 286, 289–292, 294
health tourism, 12, 281, 287, 296, 566
Heckscher–Ohlin (HO) model, 139
hedonic pricing, 367, 368, 405
heritage and cultural resources, 808
heritage tourism, 277, 279, 709
heritage tourism, adventure tourism, ecotourism, 693
higher education, 299, 301, 302, 304, 305, 307, 311, 313–315
Higher Education Report 2008, 315
Himachal Pradesh, 124
Hong Kong, 110, 116, 176, 182, 260, 295, 316, 329, 349, 541, 605, 649, 677, 727, 761
hospital waiting lists, 283, 294
hotel chains, 171, 184, 185, 599
hotel franchising, 154
hotel industry, 154, 164, 168, 177, 179, 181, 189, 428, 601, 789
hotel internationalisation, 160, 167
hotel sector, 8, 137, 152, 154, 160–163, 179, 188, 689, 704, 752, 864
hotels, 171
hotspots, 705, 707
hotspots of biodiversity, 820, 825
household income multipliers, 543
human nature, 816, 836
human population, 23, 814, 816, 831
hunting, 552, 769, 813, 824, 835, 839
hunting tourism, 826

ICT based services, 677
imagescape, diversity of, 262
imagescape mix, 328
imagescapes, 11, 259–261, 263, 267, 269, 271, 272, 274, 275, 276, 320, 321, 326, 330, 335
imagineers, 260, 275, 321, 336
impact analysis, 506
impact of tourists on nature, 902
impact of visitor spending, 877
Impact of tourism, socio-cultural and environmental, 684

impacts, 15, 17, 18, 22, 205, 206, 218, 226, 229, 251, 291, 339, 345, 354, 361, 365, 398, 400, 407, 412, 418, 422, 439, 441, 443, 445, 446, 458, 460, 462, 464, 471, 472, 482, 484, 488, 493, 495, 499, 512, 517
import tariff, 610, 611
import–export indicators of the travel and tourism, 667
inbound tourism, 20–22, 187, 423–425, 430, 477, 512, 514, 516, 585, 605–607, 669
inbound tourism and economic growth, 20, 619, 620
inbound tourism, costs and benefits of, 16
inbound tourism, increase in, 20, 512, 513, 515
inbound tourism in Queensland, 512
inbound tourism market, 490, 731, 737, 738
inbound tourism market development, 737
inbound tourism marketing, 725
inbound tourism to Queensland, 493, 495
inbound tourists, 8, 20, 21, 183, 209, 423, 425, 511, 610, 725, 726, 731, 737
income and employment multipliers, 437
income and employment multipliers, input–output analysis, 15
income elasticity, 47, 78, 113, 116, 576
income elasticity of demand, 78
incremental internationalisation, 142, 144
India, 4, 7, 12, 20–22, 121–133, 203, 282, 296, 303, 308, 313, 326, 427, 633, 684, 686, 690–692, 695, 696, 700, 702, 703, 705–707, 709–712, 714, 715, 718, 720, 722, 723, 755, 766, 815, 866
Indirect Addilog System, 50, 51
India, development processes, 706
India, domestic tourism, 7, 123, 125, 132
India's North-Eastern Region, 715
India's Northeast Frontier, 21
Indian, 316
indirect contribution of tourism, 505, 523–525, 528, 532, 536
indirect contributions of tourism, 18, 523
Indonesia, 105, 107, 110, 115, 124, 303, 363, 473, 474, 477, 478, 491, 492, 540, 821, 833, 838
indoor attractions, 323
industrial attractions, 11, 271
industrial revolution, 318, 577, 600, 814
industry life cycle, 226, 228
information and communication technologies for air transport, 207
information and communication technology (ICT), 9, 223, 662
information asymmetries, 299
information effects on stated WTP, 377
information technology, 8, 191, 205, 222
information treatment design, 378
infrastructure, 366
initial force: pioneers in Korean tourism market, 730
Inner Line Permit (ILP), 713, 714
innovation, 4, 9–11, 13, 161, 175, 191, 194, 204, 205, 228, 229, 233, 243, 249, 252, 253, 259, 264, 265, 276, 277, 317–319, 335, 336, 358, 567, 572, 622, 656, 657, 774, 783, 883
innovation and ownership, 263
input–output (I–O) multipliers, 523, 524
Input–Output (I–O) table, 525, 529
input–output analysis, 18, 19, 471, 481, 875
input–output database, 508, 518
input–output matrices, 552
Input–Output model, 471, 530, 531, 538, 539, 541, 543, 547, 548, 549, 553, 875
input–output multipliers, 536
input–output table, 19, 485, 487, 495, 507, 551, 553, 975, 877, 878
input-output analysis, 356, 569
insurgent activities, 714
integrated specialisation, 589, 593–596
inter-industry analysis, 3, 17
inter-industry comparisons, 498
inter-industry modelling, 471
inter-industry models, input–output analysis, 17
internal rate of return, 15, 401, 406
internalisation theory, 141, 146
internationalisation, approach to, 145
internationalisation, concept of, 138
international arrivals, 576, 695
International arrivals to Fiji, 745
international arrivals to PICs, 742, 743
international arrivals to the Pacific Island countries, 22

International Association of Amusement Parks and Attractions (IAAPA), 317
international business, 137, 139, 145, 147, 149, 152, 160–169, 189, 703, 757
international division of labour, 622
international division of production processes, 577, 579
international division of tourism production, 19, 584, 588, 602, 679
international division of tourism production (IDTP), 575, 578
international economics and tourism, 3, 19, 618
international fragmentation of production, 575
international fragmentation of tourism production, 579, 590, 600
international hotel chains, 153, 166, 748
international hotel companies, 152, 166, 181, 183
international hotel sector, 153, 155, 163
international new ventures, 144, 160, 163, 167, 168
international student market, 300, 301, 309
international students, 12, 300, 301, 304–306, 309–312, 314–316
international tourism, 19, 21, 28, 41–43, 63, 82–84, 122, 124, 131, 169, 206, 208, 213, 221, 222, 349, 472, 476, 478, 483, 488, 489, 491, 521, 567, 576, 590, 595, 598, 605, 609, 616, 636, 638, 640, 648, 652, 653, 658, 662, 668, 669, 675, 679, 680, 681, 746, 747, 756, 784, 788, 789, 868, 908
international tourism policy, 605
international tourism receipts, 173, 192, 630, 631, 634, 649, 652, 706, 746, 766, 846
international tourist, 9, 21, 22, 29, 35, 94, 126, 173, 187, 414, 476, 480, 576, 605, 606, 617, 635, 661, 665, 683, 693, 694, 696, 706, 726, 727, 766, 787, 789, 793, 828, 875, 921, 924, 925, 936
international tourist arrivals, 124, 173, 605, 630, 648, 684, 705, 706, 742, 766
international trade in services, 36
international trade theories, 139
international trade theory, 35, 577, 579
international travel, 29, 35–37, 41, 61, 63, 65
internationalisation, 8, 9, 19, 137–140, 143, 144
internationalisation in tourism, 152
internationalisation of business firms, 8, 172, 186
internationalisation of hotel sector in China, 184
internationalisation of service firms, 138, 150
internationalisation of services, 149, 151, 165, 166, 169
internationalisation theories of the firm, 142
internationalisation theory, 141
internationalisation, international experience and degree of, 156, 158, 159
internet, 9, 12, 194–196, 203, 205, 282, 286–289, 292, 294, 295, 331, 373, 385, 559, 562, 595, 599, 719, 832, 837
internationalisation, network approach, 145
internet searches, 287, 293
investment, 8, 15, 17, 33, 41, 117, 119, 137, 141, 146, 161, 163, 165–167, 169, 171, 172, 175–177, 181, 182, 185, 188, 189, 200, 212, 267, 277, 303, 304, 312, 316, 319, 326, 327, 329, 330, 383, 393, 394, 396, 397, 401, 406, 408, 410, 486, 487, 507, 654–657, 719, 734, 810, 825, 845, 847, 882, 884
investment behaviour, short sighted in the tourism industry, 800
investments, 117, 137, 161, 200, 212, 329, 825
Iraq, 207, 245, 473, 477
Israel, 569, 591, 592, 594, 637, 649
Italy, 113, 325, 350, 351, 549, 570, 591–593, 597, 618, 632, 633, 649, 671, 841, 921
Italy's, 830
its international specialisation, 19

Jamaica, 591–593, 597, 631, 638
Jammu, 122, 126, 129, 131, 132
Japan, 23, 26, 107, 113–116, 131, 182, 247, 253, 254, 278, 326, 350, 351, 537, 549, 591–593, 646, 648, 649, 651, 652, 667, 668, 710, 718, 727, 730, 761

Japan's National Parks Act, 908
Japanese ecotourism, 886, 888
Japanese ecotourism, criteria of, 888
Japanese ecotourism movement, 886
Japanese ecotours, 887, 888
Japanese visitors, 246, 247
Jetstar, 216
Jharkhand, 123, 126, 129
Jordan, 124, 591–593, 631, 638

Kashmir, 122, 124, 126, 129, 131, 132, 696
Kenya, 820, 823, 824
Kerala, 775
Keynesian multipliers, 551, 557, 558
Kiribati, 344, 743, 747, 759
knowledge, 857
knowledge and willingness to pay, 858
knowledge capital transfer, 177
knowledge transfer in hotel management, 186
Korea, 110, 303, 356, 474, 594, 597, 631, 632, 637, 725, 732–734, 736, 737
Korea-China, 910
Korea/Finland, 350
Korean tourists, 22
Korean airline expansion, 734
Korean package group tourists, 726
Korean Wave, 22, 725, 726, 728, 730, 731, 733
Kyoto Protocol, 519, 833

LCC, 212
leakage from the economy, 749
leakages from inbound travel, 668
learning, 97, 143, 145, 146, 165–167, 175, 177, 262, 315, 347, 490, 570, 624, 735, 814
leasing agreement, 576
Legoland, 271, 321, 324, 327, 333
Legoland California's, 322
Legolands, 327
leisure tourists, 11, 72, 182
leisure travel, 40, 192, 198–200, 203, 204, 207, 223, 238, 300
leisure travel, leading concerns in Europe, 201
leisure travel value chain, 191, 198, 199
leisure-related energy use, 767
leisure-travel, 202, 213
Leontief model, 525
Leontief's input–output model, 547
less developed countries, 419, 634, 645, 654, 664, 679
Liberia, 351, 821, 822
life cycle of Hawaii's tourism industry, 230
lifeguarding services, 463
limits of acceptable change, 806, 810, 829
limits of acceptable change to the environment, 776
'Linear-Approximate' AIDS model, 56, 60
Linear Expenditure System, 33, 50, 51, 67, 68
Linear Expenditure System, Translog Demand Model, 72, 82
lodging, demand for, 9, 175, 188, 427, 428
lodging, demand for in China, 175
lodging, elasticity of demand for, 427
local economic impact, 569
local government, 16, 17, 329, 380, 529, 694, 698, 701, 726–729, 733–735, 889, 891, 908
local stakeholders, 818, 825, 835
lodging sector, 8, 171–173, 175, 176, 181, 186, 187
London Olympics, 474, 482, 484
low cost carriers, 9, 194, 202, 212, 223, 224, 599
Lufthansa, 215, 216

Macau, 670
Madagascar, 490, 781
Malaysia, 105, 107, 110, 115, 117, 122, 125, 286, 312, 591, 592, 597, 785, 833
Malaysia, Indonesia, 7
Maldives, 124, 667, 788, 796, 810, 811
Malta, 217, 218, 223, 355, 474, 479, 489, 591–593, 649
man-made capital, 444, 445
management, of beaches, 361
management contracts, 8, 154, 163, 168, 176, 177, 181, 756
Maoist rebels, 7, 121, 130
market and non-market valuation, 361, 367
market deregulation, 209, 215
market failures, 15, 23, 24, 141, 429, 439, 607, 770, 790
market power in tourist trade, 38

market reform in China's lodging sector, 179
market segmentation, 7, 87, 94, 100–104, 171, 182, 570, 739, 866
market segmentation analysis, 6, 87, 88, 91
market segmentation strategy, 87, 88
market size and growth, 148, 155, 157
marketing and economics, 543
marketing possibilities, 826
marketing strategies, 13, 103, 202, 204, 205, 314, 494, 548, 555, 559, 565, 566
mass extinction of species, 813
mass tourism, 117, 197, 242, 362, 371, 413, 571, 653, 697, 769, 826, 888, 889, 907, 927, 928, 931
mass tourism development, 244
Matson Shipping Line, 281, 232
Mauritius, 474, 480, 490, 632, 637, 755
McDonaldization, 342, 349, 358
medical tourism, 12, 281–283, 285–289, 291–295, 297
Medical Tourism Association, 290, 296
medical tourism, concerns about, 289
medical tourist destinations, 289
medical tourists, 12, 281, 282, 284, 285, 289, 290, 293, 296
medical travel, 281, 287
Mediterranean, 69, 82, 84, 202, 205, 214, 217, 339, 342, 343, 358, 363
Mediterranean countries, 69, 84, 634, 637
Mediterranean cruises, 340
mega-events, 260, 484
'Mega' park, 328, 329
Mexico, 198, 247, 325, 631, 649, 651, 652, 667, 677, 782
Middle East, 322, 323, 335
Millennium Development Goals, UN, 837
Minami-Jima Island, 26, 27, 885, 892–894, 896, 897, 899–903, 905, 907–909, 910
mixed goods, 432, 778
model closures, 509
modernisation development paradigm, 652
monopolistic competition, 30, 272, 273, 343
Morocco, 591, 592, 594, 597, 599, 670
Mount Cameroon National Park, 824
mountains, 128, 129, 260, 549, 709, 711, 735, 796, 818, 886
multi-criteria analysis, 28
multinational enterprises, 141, 181
multinational firms, 140, 622
multiplier effects, 105, 118, 122, 355, 400, 544, 549, 554, 558
  of tourism, 551, 555, 569
multipliers, 106, 517, 527, 532, 534, 543, 546–548, 551, 553, 554, 558, 565, 568, 570, 571
multipliers, normal, 551, 552, 558
museum, 16, 261–263, 268, 271–273, 278, 563, 664
Myanmar, 591, 592, 594, 718

National Accounts, 406, 493–496, 501, 540, 680
national park, 384, 385, 432, 434, 441, 450, 709, 720, 729, 740, 821, 823, 826, 830, 831, 841, 865, 879, 881, 889, 890, 909, 912, 936, 938–940
national park, Egypt, 27, 911
national park-associated spending, 874, 880
national parks, 16, 26, 433, 435, 439, 440, 444, 570, 711, 777, 824, 836, 849, 878, 880, 883, 883, 884, 891
national parks, economic value, 25, 871, 883
natural and cultural resources, 906
natural and cultural attractions, 645, 647, 732
natural and cultural tourism resources, 548
natural and non-natural remedies, 444
natural areas, 16, 439, 685, 769, 773, 799, 819, 826, 837, 871, 873, 887
natural beach capital, 446
natural capital, 17, 385, 444, 445, 938
natural catastrophes, 133, 208
natural ecosystems, 839
natural environment, 26, 244, 358, 653, 684, 771, 776, 794, 795, 802, 871, 873, 886–888, 891, 899, 909
natural environment and culture, 887
natural environment attractions, 882
natural environments, 22, 23, 425, 872, 881, 883
nature, 5, 8, 10, 13, 21, 25, 35, 37–40, 43, 48, 68, 294, 296, 321, 567, 570, 590, 593,

683, 689, 697, 700, 705, 789, 885, 887, 940, 938
nature and structure of tourist demand, 718
nature conservation, 434, 441, 886, 872, 909, 940
nature rehabilitations and tourist behaviours, 900
Nature Society of Japan's, 887
nature's economy, 458–460, 462, 464
nature-based tourism, 30, 434, 436, 441, 442, 677, 707, 710, 711, 722, 817, 928
nature-based tourism and adventure tourism, 710
neighbourhood effects, 7, 19, 105
neoclassical economic modelling, 19, 423
neoclassical economic theory, 264, 423
neoclassical economics, 6, 14
neoclassical growth theory, 625, 653
neoclassical theory, 48
neoclassical theory of consumer behaviour, 5, 44
net present value, 15, 394, 401, 406, 445
Netherlands, 113, 198, 201, 296, 319, 325, 549, 649, 922, 933
New Caledonia, 22, 743, 744, 746
New Caledonial, 743
New South Wales, 119, 365, 387, 409, 475, 482, 491, 493, 520, 521, 761, 875
New South Wales Government, 387
New Zealand, 12, 43, 79, 81, 101, 131, 145, 268, 287, 310, 325, 359, 387, 413, 603, 619, 640, 641, 670, 680, 743, 744, 746, 755, 758, 759, 761, 785, 830, 864–867
Nigeria, 815
Nigerian gangs, 821
Niue, 743, 747
non-agricultural, 130
non-market valuation techniques, 367
non-market values, 364, 365, 383, 387
non-use values, 364, 369, 370, 463
non-use values, economic, 447
Nordic countries, 198, 199, 330, 775
North America, 70, 186, 237, 243, 268, 322, 324, 327, 343, 349, 600, 601, 744, 809
North People's Republic of Korea (NPRK), 735
North-East India, domestic tourist inflows, 716
North-Eastern Region, 711, 720, 722
North-Eastern Region of India, 706, 713, 721, 722
North-Eastern States, 706, 712, 715, 721
North-Eastern States of India, 712
Norway, 351, 500, 649
not-for-profit sector, 274, 276
Number of tourist arrivals, 695, 725

ocean acidification, 366
ocean cruises, Major suppliers, 345
ocean cruising, 343, 345, 347, 350, 354
Ogasawara Country Code, 886, 898
Ogasawara Island as a World Heritage site, 907
Ogasawara Islands, 26, 27, 885, 886, 889–893, 895, 899, 901, 903, 906–910
Ogasawara Tourist Association, 891, 893, 909
Ogasawara Village Government, 889, 896
Ogasawara Whale-watching Association, 886, 892
oligopolistic, 339, 789
oligopolistic marketing firms, 789
oligopolistic structures within cruise markets, 345
oligopoly, 272, 339, 343
Olympic Games, 260, 397, 571
on-board cruise product, 349
online distribution, 191, 202–204
open access, 13, 771, 773, 774, 778, 782, 792, 917
open-access resources, 792, 834
operating force: tourism businesses and their attitude to tourists, 734
opportunity costs, 393, 394, 396, 397, 399–401, 432, 461, 545, 672, 685
optimal tax on tourists resembles, 610
organ harvesting, 285
Organisation for Economic Co-operation and Development (OECD), 35, 301, 520, 784
Orissa, 123, 126, 127, 129, 130
outdoor recreation, 205, 273, 277, 375, 444, 465, 569, 809
output multipliers, 543, 547, 569, 749, 750
overseas tourists, 175, 181, 183, 475, 926
own price elasticities, 53, 59, 70, 71, 76, 77, 79, 80, 116

ownership, 11, 137, 141–143, 147, 160, 177, 179, 181, 182, 184, 190, 199, 237, 259, 260, 265, 267, 268, 270, 274, 276, 324, 331, 339, 345, 504, 576, 578, 582, 585, 668, 672, 674, 748, 755, 778, 792
ownership patterns, 272

Pacific Island Countries (PIC), 20, 22, 741, 756, 758, 785
package holidays, 191–193, 196, 198, 202, 675, 789
packaged tour, 242
Pakistan, 131, 633
Palau, 22, 743, 744, 746, 747, 775
Palestine, 125
palm oil plantations, 833
Panama, 351
Papua New Guinea (PNG), 22, 743, 744, 746, 747, 752, 755, 758, 760
Paretian improvement principle, 418, 424
Pareto efficiency, 400, 401
park admissions, 330, 331
park entrance fees, 440, 808
park planning, 317, 330, 909
parks, 13, 165, 260, 262, 268, 269, 274, 276, 321–325, 326–330, 332–337, 379, 383, 432, 434, 441, 450, 774, 785, 816
parks, underperforming, 327
Partial specialisation, 589, 593–597, 599, 600
Passenger Mobility Index, 121, 125
Pay-One-Price (POP) admission, 331
Peru, 591–594
philanthropists, 816, 837
Philippines, 107, 125, 356, 591, 592, 748, 796
PICs to tourism, its economic significance to PICs, 746
Pilanesberg National Park, 827
pilgrimage tourism, 710
planning, 41, 100, 107, 117, 118, 157, 168, 170, 175, 208, 221, 253, 255, 268, 270, 316, 317, 327, 329, 330, 332, 335, 353, 358, 365, 367, 377, 385, 413, 421, 439, 450, 451, 458, 465, 500, 501, 541, 565, 570, 571, 686, 691, 692, 697, 698, 701, 702, 704, 719, 722, 740, 783–785, 792, 797, 798, 809, 810, 881, 911, 927, 928
poachers, of ivory, 823, 824
poaching, 779, 823, 824, 826, 831
Poland, 198, 591, 592, 594, 921
policy incentives, 799
political feasibility, 28, 29, 813, 820, 832
politically feasible, 813, 839
poor, 21, 108–110, 113, 125, 126, 129, 420, 487, 626, 665, 666, 700, 817, 920, 929, 933
ports, 344, 349, 353–357
Portugal, 21, 137, 161, 162, 170, 544, 550, 553–556, 559, 560, 565–569, 572, 591, 592, 594, 633, 649, 683, 690, 704
positive environmental externalities, 781
Posner's principle of justice, 419
poverty, 18, 23, 133, 292, 358, 473, 487, 490–492, 620, 648, 652, 742, 759, 809, 822, 836, 842
poverty alleviation, 133, 660, 681, 741, 760
preference heterogeneity, 911, 924
'pre-packaged' holiday offer, 202
price elasticities, 54, 56, 57, 59, 63, 64
primary, 46, 144, 172, 174, 175, 183, 184, 186, 207, 221, 224, 292, 374, 388, 427, 467, 481, 499, 507, 511, 514, 546, 560, 621, 654, 665, 670, 673, 679, 692, 720, 726, 755, 773, 788, 848, 869, 874, 876, 916
primary education, 561
private sector, 265, 270, 274, 289, 292, 393, 394, 403, 406, 498, 521, 546, 691, 692, 720, 798, 808, 886
producer surplus, 399, 400
product differentiation, 13, 37, 103, 346, 349, 353
product life cycle, 170, 225, 253, 639
product life cycle theory, 140
prostitution, 685, 697, 806
protected areas, 16, 25, 26, 431–435, 439, 441, 549, 697, 774, 806, 817, 821, 825, 831, 832, 841, 869, 871–873, 875, 876, 878, 881, 882, 884, 926, 938
psychological economics, 6, 28
public bad, 793
public decision-makers, 411
public economics, 3, 5, 14, 16, 417, 418, 438, 520
public education programs, 797
public finance, 29, 417, 438, 617

public goods, 275, 387, 430, 433, 673, 674, 765, 772, 774–776, 778, 782, 787, 790, 791, 793, 813, 821, 839, 872, 884, 917
public ownership, 770
public policies, 20, 170, 417, 438, 699, 704
public policy, 316, 388, 423, 467, 499, 683, 732, 840
public sector, 11, 24, 170, 263–266, 269, 270, 272–274, 276, 292, 329, 393, 394, 406, 440, 571, 699, 704, 725, 798
pull force: change in tourism supply, 733
pure public good, 431
push force: Government support and aggressive marketing, 732

Qantas, 215, 216, 473
quasi-private good, 16, 24, 431, 777, 793
quaternary activities, 671
Queensland, 3, 14, 16–18, 30, 132, 281, 299, 304, 306, 314, 316, 388, 417, 435, 441–443, 445, 450, 460, 465, 466, 511

Ras Mohammed National Park, carrying capacity, 931
racism, 817
random utility method, 367, 369
realpolitik acceptable, 813, 839
recreation, 13, 16, 35, 36, 70, 71, 128, 208, 362, 363, 366–369, 377, 379, 383, 384, 386, 388, 432
recreation and tourism, 361, 371, 882, 894
recreation assets, 361, 383
recreation economy, 362
recreational activities, 4, 364, 460, 791, 805
recreational returns, 443
recreational surfing, expenditure on, 373, 374
recreational surfing, economic value, 371
recreationists, 11, 13, 14, 16
Reducing Emissions from Deforestation and Forest Degradation (REDD), 838
reef ecosystems, 27, 440, 936, 939
reef services, 911, 914, 917, 919
reef sites, determinants of demand, 930
reef-building corals, 366, 919, 920
reefs, 366, 768, 914, 918, 919, 929, 937
regeneration and property development, 269
regional development, 209, 414, 501, 543, 567, 671, 910
regional economic impact study, 543
regional economic impacts of national parks, 26
regional economic issues, 18
regional economics, 123, 371, 545, 740, 878, 881–883
regional economy, 524, 543, 661, 875
regional input–output model, 551, 569
regional tourism, 703, 740
regional tourism economic impact analysis, 520
regional tourism satellite accounts, 519
reinvestment, 217
relational factors, 159
remote state of India, 705, 707, 719, 721
repeat visits of tourists and recreationists, 13, 249, 259, 270, 271, 334, 335
resort park, 326
resource consumption, 816
restricted area permit (RAP), 713
returns from, 11, 430, 461, 499, 788
revealed comparative advantage (RCA), 19, 579, 588, 591, 592, 600, 601
revealed comparative advantage index, 575
revealed preference, 373
revealed preference methods, 370, 465
revenue management, 278, 331, 339, 340, 346, 353, 358
rhinos, 823, 824, 841
Ricardian model, 579, 583, 601
river cruises, 340, 343, 346, 350
Rodriques, 824
roller coasters, 324, 332
Romania, 355, 640
room taxes, 417, 426–428, 430, 439, 441
Rotterdam Demand System (RTDS), 51, 52
rural farm stays, 775
Russia, 203, 326, 346, 349, 351, 633, 822, 921, 933
Ryanair, 215, 216, 219, 439

safe minimum standard, 829, 830
Samoa, 741–744, 746, 747, 750–752, 757, 759, 918, 939

Schumpeter's theory, 264
Scotland, 271, 474, 489, 810
scuba diving, 363, 440, 911, 933, 938, 926, 938
Sea World parks, 264
sea-level rises, 767
seasonality, 67, 68, 72, 73, 83, 208, 214
seasonality of tourism, 736
security, 121, 130, 218, 220, 221, 354, 484, 552, 647, 821
security problems in nature reserves, 823
segmentation, 6, 87–93
segmentation model, 544, 549, 554, 566
segmentation research in tourism, 88, 90
segmentation studies, data-driven, 90, 94, 104
segments, 544
segments of the tourist industry, 3, 10
segments of visitors, 555
self-imposed management, 885, 892
self-imposed management (SIM) rules for managing ecotours, 892
self-imposed rules, 26, 893
self-packaged holiday, 203
sensitivity analysis, 18, 410, 485, 486, 880
Severe Acute Respiratory Syndrome (SARS), 245
Six Flags, 321, 325, 327, 335, 337, 677
Social Accounting Matrix (SAM), 476
social and cultural environment, 794
social cost benefit analysis (SCBA), 14–16, 28, 394, 395, 400, 405, 417, 418, 422
social impacts, 650
socio-cultural, 686
socio-cultural and environmental impacts, 357, 683
soil erosion, caused by ecotourists, 904
South Korea, 592
State of Hawaii Department of Business, 240
stated preference methods, 384, 873
strategic developments, 223
Sunshine Coast Regional Council, 460
sustainability, 24, 25, 411, 421, 422, 425, 486, 490, 637, 680, 682, 683, 686, 692, 722, 756, 765, 779, 787, 789, 796, 799, 819, 835, 842, 847, 854, 859–861, 863, 869, 883, 888, 928, 936
sustainability, boundaries of, 829
sustainability concept, 653
sustainability development, 654
sustainability issues, 16, 314, 423, 425, 740
sustainability issues in tourism, 769
sustainability of ecotourism, 819
sustainability of tourism, 24, 429, 766, 805, 806, 810, 841
sustainable development, 444, 481, 549, 603, 680, 702, 705, 741, 758, 774, 783, 789, 790, 801, 802, 810, 817, 819, 840, 864, 908, 939, 941
sustainable development in tourism, 884
sustainable industry, 769
sustainable tourism, 787, 883
sustainable tourism in Ras Mohammed, 935

taxation, 605
Thailand, 117, 591
the budget constraint, 78
the changing role of travel agents, 193
the tourism sector, economic potential, 693
theme park, 263, 277, 319, 325, 326, 328, 330–332, 336, 337
theme park development, 319, 324
theme parks, 260, 264, 271, 278, 317, 324–327, 329, 346, 396, 580, 827
tigers, 827
total economic, 441, 462, 505, 544, 546, 565, 841
total economic benefits, 548, 554
total economic impact, 549, 554, 555
total economic value, 363, 364, 367, 872
tourism, 10, 429, 524, 619, 701, 782, 854
tourism, a predatory industry, 828
tourism carrying capacity, 244
tourism carrying capacity in Goa, 692
tourism, characteristics of, 35, 40
tourism, economic value, 872, 881, 883, 884
tourism, economic values, 881
tourism, growth of, 4, 229, 235, 247, 427, 623, 694, 703, 799, 801
tourism goods, as mixed goods, 777
tourism, its economic vulnerability, 124
tourism, its effects on the balance of payments, 666, 669
tourism, direct economic benefits, 546
tourism, direct economic contribution, 502

tourism development, its economic contribution, 523, 540, 883, 884
tourism consumption, direct and indirect import content, 535
tourism contribution, 650, 655, 658
tourism demand, 505
tourism demand, its modelling, 35, 40, 42, 72, 75, 82
tourism demand, measures of, 40
tourism demand econometric issues, 67, 69, 74
tourism demand, determinants of, 34, 38
tourism demand, empirical studies of, 69, 79
tourism development, 570, 683
tourism development, challenges for, 711
tourism development, constraints to, 699
tourism development, impacts of, 684, 692, 794, 828
tourism direct economic benefits, 546
tourism development in Zhangjiajie, 726, 727, 729
tourism development, its effects on the environment, 24, 794
tourism education, 224, 700
tourism externalities, negative, 774
tourism firms, 137
tourism impact, 911
tourism in the Central Region of Portugal, 19, 543
tourism industry, 756, 796
tourism industry, its long-term viability, 801
tourism market segmentation, 91, 96
tourism policy, 765
tourism prices, measures of, 41
tourism products, demand for, 817
tourism production processes, breaking up of, 600
tourism production, dynamics of the international division of, 590
Tourism Research Australia, 875, 876, 880, 884
tourism resources, 405, 424, 731, 737, 770, 771, 778, 787, 799, 872
tourism satellite account for Hawaii (HITSA), 528
Tourism Satellite Accounts (TSAs), 5, 17, 18, 406, 494, 496, 497, 487, 489, 493, 511, 520, 523–526, 528, 529, 531, 532, 536, 537–539, 540, 544, 670, 875, 880
tourism's international splitting up, 578
tourism's, value added changes, international splitting up, 578
tourism-led growth, 20, 619, 636
tourism-led growth (TLG) hypothesis, 620, 630, 635, 637–639
tourist developments, 28, 417, 418, 420, 426, 429, 438, 788
tourist expenditures, import content, 525, 528
tourist intermediaries, 9
tourist magnetic site, 121, 123
Tourist Regional Multiplier Model, 547
tourist spots, 129, 130, 709, 710, 712, 713, 717–719
tourists' expenditure, 527, 871, 872
tourists' motivations, 348
trade in tourism, 37, 38, 587, 588
transaction and communication costs, 578, 580, 600
transaction cost theory, 140, 141, 166
Transaction costs, 4, 24, 141, 162, 166, 419, 804, 854
Translog, 53–57, 59, 61, 63, 67, 76
translog demand model, 33
translog demand system, 53, 64, 68, 69
transport, cost of, 41, 43
transport, demand for, 208
transnational companies, 748, 750, 756
transplant surgery, 284
transport and communications technologies, 594
transportation, cost of, 39, 238
transport sector, 207
transport sector, and tourism, 207
transport services, 124
transportation, 36, 39, 41, 43, 70, 71, 109, 144, 151, 193, 214, 222, 226, 229, 230, 232, 233, 237, 240, 249, 251, 252, 344, 476, 479, 487, 494, 528, 530, 531, 533–535, 538, 575, 576, 581, 597, 600, 666, 677, 699, 700, 718, 719, 787, 794, 825, 889, 938
travel, 538
travel agencies, 191, 193–195, 197, 198, 200, 201, 203, 204, 219, 559, 562, 578, 590, 676, 728–730, 733, 734, 737, 738
travel agencies, changing role of, 196

travel agent, 9, 122, 185, 191, 192, 194–196, 205, 216, 220, 233, 580, 675, 730, 926
travel and tourism, contribution to GDP, 766
travel and tourism, Determinants of demand, 38
travel and tourism giants, 200
travel and tourism intermediaries, 9, 191–193, 204, 205
travel and tourist agents, 9
travel cost analysis, 865, 873
Travel Cost Method, 13, 367–369, 405, 409, 447, 452, 462
Travel costs, 43, 110, 369, 405, 409, 413, 448, 452, 462, 734
travelling for treatment, 281
trends, 7, 22, 59, 166, 168, 171, 205, 223, 228, 239, 240, 244, 252, 253, 269, 288, 296, 300, 314, 317, 329, 358, 579, 639, 715, 740, 816, 887
Trends in tourist inflows, 717
tribes, 121, 705, 707, 710, 714, 833
trolley parks, 318
trophy hunting, 826, 834
TSA/RMF, 494, 496, 497, 520
TSAs (see *Tourism Satellite Accounts*)
Tunisia, 591–593, 631, 635–637
Tuvalu, 743, 747, 757, 759

UK, 12, 30, 64, 69, 79–81, 83, 102, 107, 113, 116, 198, 760, 783, 784, 808
UK demand for tourism, 69, 75
Ukraine, 355
United Arab Emirates, 323, 646
United Liberation Front of Assam (ULFA), 714
United Nations World Tourism Organization, 223, 520
United States, 63, 69, 75, 79, 81, 82, 116, 122, 124, 183, 192, 198, 207–209, 215, 228, 229, 241, 252, 255, 300, 303, 310, 371, 428, 465, 467, 497, 508, 523–526, 529, 540, 591–593, 600, 618, 646, 648–652, 666, 667, 669, 809, 810, 833, 892
Universal Studios, 264, 271, 321, 322, 327, 335
unsustainable development, 657
unsustainable environmental consequences, 771
UNWTO (see *United Nations World Tourism Organisation*)
UNWTO TSA:RMF, 525
Uppsala Model, 142–144, 153
urban environment, 794, 795
Uruguay, 594, 597, 631, 637
US foreign outbound travel data from US Department of Commerce, 248
USA, 9, 30, 64, 65, 107, 110, 114, 116, 124, 125, 167, 170, 190, 192, 196, 205, 214, 215, 225, 254, 271, 295, 300, 308, 312, 314, 316, 319, 321, 323, 327, 331, 412, 440, 441, 466, 472–474, 484, 523, 540, 549, 571, 625, 640, 651, 668, 718, 784, 810, 865, 922, 924, 933, 939
US-China WTO Agreement, 190
use and non-use values, 364, 378
user-fees, 430–437, 440
user-pays, 439
user-pays principle, 16, 417, 430, 431
user-pays principle and tourism, 430
utility function, 44–46, 49–55, 59, 60, 62, 486, 607, 613, 614

valuation methods, 14, 368, 369
valuation of benefits, 403
valuation of cost and benefit items, 393, 403
valuation of environmental resources, 769
valuation of the environment, 465
valuation value (VV), 673, 674
value added chain, 579
value judgements, 417, 438, 932
Vanuatu, 22, 355, 741, 743, 744, 746–748, 751, 752, 756, 758–760
vertical specialisation', 577
Vietnam, 107
Village Roadshow chain, 325
violence, and tourism, 7, 121, 124, 128–130, 132, 697, 822
visas, 282, 299, 309–311, 582, 585, 606, 676
visitor attendances, 271
visitor attractions, 259, 262, 264, 270, 271, 274, 276, 278, 324, 327, 337
visitors, 544

volume of domestic tourism, India's Passenger Mobility Index was calculated, 125
voluntary rules, 27, 900
voluntary sector, 267, 273

Wales, 11, 52, 53, 59, 63, 65, 74, 76, 83, 84, 279, 466, 475, 511, 878, 879, 882, 883
Walt Disney Attractions, 322
Walt Disney parks, 260
wanderlust travel, 37, 38, 245
wanderlust travellers, 36
Warner Bros Movie World, 321, 325
waste production, 816
water parks, 317, 322, 323, 325, 326, 332
wealth maximisation, 418
web of life on Earth, 815
welfare, 29, 38, 62, 267, 296, 399, 405, 417–419, 422–424, 429, 431, 437, 438, 440, 475, 476, 480, 487, 605, 606, 608, 610–617, 624, 637–639, 646–648, 654, 742, 754, 756, 767, 784, 790, 791, 798, 810, 828, 873, 914, 917, 919, 924
welfare benefits, 479
welfare economics, 417, 418, 422, 438, 439, 646
welfare effects of increased inbound tourism, 608
West Bengal, 123, 126–130, 718
Wet Tropics of Queensland World Heritage Area (WTQWHA), 848, 849
Wet Tropics World Heritage Area, 845, 865, 868, 877
whale watching, 784, 775, 824, 886, 892, 893, 895, 896
whale-watching ecotours, 889
wild goats, 895, 898, 900, 909
wilderness and protected areas, 431
wildlife, 17, 130, 260, 433, 435, 439, 440, 450, 473, 484, 492, 716, 720, 768, 769, 774, 783, 794, 808, 818, 823–826, 871, 875, 882, 883, 896, 897
wildlife conservation, 840
wildlife parks, 580
Wildlife tourism, 441, 711, 720, 769, 780, 783, 784
willingness to pay, 14, 274, 371, 384, 387, 393, 397, 398, 400, 401, 404, 405, 613, 849, 853, 855, 856, 857, 861, 864, 866, 867
willingness to pay for ECO certification, 853
willingness to-pay, 441, 845, 847, 851, 868, 939
World Heritage Areas, 876, 877, 883
World Heritage Site, 22, 26, 126, 130, 265, 716, 725, 885, 906, 907
World Natural Heritage Areas, 725, 726, 886
World Tourism Organisation (WTO), 35, 229, 497, 517, 519–521, 523, 540, 603, 617, 680, 692, 704, 760, 788, 809, 811, 867
WTO (see *World Trade Organisation*)
World Trade Fairs, 260
World Travel and Tourism Council (WTTC), 497, 744, 760, 785
Wulingyuan, 22, 725, 726, 740
Wulingyuan Scenic Area, 727

Yugoslavia, 668

Zhangjiajie National Park, 22, 725
Zhangjiajie, annual tourist arrivals, 727
Zhangjiajie, impacts of the Korean tourist arrivals, 736
Zhangjiajie, improvement of tourist supply of tourism facilities, 736
Zimbabwe, 834
'zero fee' policy, 734