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Economics of Sustainable Tourism

Edited by **Fabio Cerina,**
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Michael McAleer

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The economics of sustainable tourism

An overview

Fabio Cerina, Anil Markandya and Michael McAleer

This volume is based on ten theoretical and empirical chapters that cover several topics on tourism economics, with special emphasis on sustainability, productivity, tourism demand and the impact of tourism on the host community. It brings together selected papers from the First Conference of the International Association for Tourism Economics (IATE), held in Palma de Mallorca, Spain, from 25 to 27 October 2007 and jointly organized by the University of the Balearic Islands, Spain; the Fondazione Eni Enrico Mattei (FEEM), Italy; the Centre for North South Economic Research (CRENoS), Italy; and the Tourism and Travel Research Institute, Nottingham University, United Kingdom.

The book is divided into three parts, entitled ‘Tourism demand and the host community’, ‘Tourism and productivity’ and ‘Sustainable tourism: environment and cultural heritage conservation’.

Part I presents four chapters that are concerned with the analysis of tourist satisfaction and the impacts of tourists on the host community. The first two chapters develop a rigorous analysis of the determinants of tourism demand, while the last two reverse this perspective and deal with the effects of tourism demand on residents’ attitudes and residential water demand, respectively. Each of these chapters comprises a case study whose relevance makes it particularly useful for general policy suggestions and guidelines.

The purpose of the first chapter, ‘Time series modelling of tourism demand from the United States, Japan and Malaysia to Thailand’, by Yaovarate Chaovanapoonphol, Christine Lim, Michael McAleer and Aree Wiboonpongse, is to investigate the major determinants of the demand for international tourism to Thailand. In particular, the chapter focuses on the impact of changes in the consumer price index on tourism demand from the United States, which represents the long-haul inbound market; Japan as the most important medium-haul inbound market; and Malaysia as the most important short-haul inbound market. Accordingly, the authors analyse the monthly tourist arrivals and economic determinants from 1971 to 2005, using ARIMA with exogenous variables (ARMAX) models to analyse the relationships between tourist arrivals from these three countries to Thailand. The economic determinants and ARMA models are used to predict the effects of the economic, financial and political determinants on the numbers of international tourists to Thailand. A major

conclusion of this chapter is that the consumer price index has a significant impact on the number of tourist arrivals only for long-haul tourism from the United States, and not on medium- and short-haul international tourist arrivals.

The second chapter, 'Determinants of tourist satisfaction at sun and sand mass destinations' by Joaquín Alegre Martín and Jaume Garau Taberner, is also concerned with tourist demand, but the focus is on the analysis of tourist preferences. Using data from a survey conducted in 2007 at one of the Mediterranean's leading sun and sand destinations, namely the Balearic Islands, this chapter analyses the factor structure of tourist satisfaction and shows that certain threshold levels of delivery of key services are essential for satisfaction. Among this group of key services we find accommodation, easy access to information (or being an easy holiday to arrange), cleanliness and hygiene, safety, tranquillity, scenery, and prices in line with budgets. Interestingly, climate and beaches do not appear in this group. This result should have important policy implications for local policy-makers.

As we have noted, Chapter 3 reverses the perspective and analyses the impact of tourism on the host community. In 'Determinant attitudes to tourism in a mass tourist destination: a comparative-static analysis', Eugenio Aguiló Pérez and Jaume Rosselló Nadal investigate how residents in the Balearic Islands, Spain, regard tourism as affecting their community. This case study is important in providing a framework for research into attitudes towards this industry in a mature Mediterranean tourist destination. By means of a two-period survey, and using ordered logit models, this chapter shows that the host population of a mature tourist destination, such as the Balearics, generally tends to acknowledge the economic benefits of tourism. The cultural and social benefits are also perceived to be an advantage by residents of the Balearics, but to a lesser degree. At the same time, it is recognized that tourism creates various different problems, including over-saturation of the community's services, traffic congestion and high prices. However, local residents conclude that there is a positive balance between revenue from tourism and the necessary costs that are incurred.

In Chapter 4, 'A panel data analysis of residential water demand in a Mediterranean tourist region: the case of Sardinia', Vania Statzu and Elisabetta Strazzera focus on the impact of tourism on the host community and, in particular, on residential water demand. The aim of the chapter is to estimate the effect of the presence of tourists on unofficial structures on the demand of water in the domestic sector, together with other factors influencing the residential demand for water. By analysing a data set concerning water consumption in Sardinia, the authors show that in regions where an important share of tourism is accommodated in holiday homes, the average level of residential water consumption is significantly inflated by the presence of tourists. This is an element that should be taken into account when comparing regional or district consumption levels. Higher average consumption levels may be due to less responsible consumption behaviour, or lower efficiency in the maintenance of water infrastructures.

Part II of the book deals with the productivity of the tourism sector. This issue is investigated, from both empirical and theoretical perspectives, by three

1 chapters that analyse how different factors (environmental resources, trade rela-
2 tionships, rural areas and labour) may contribute to increasing the productivity
3 of an economy that specializes in tourism.

4 The first chapter of this part, 'Pollution-averse tourists and growth' by Fabio
5 Cerina and Sauveur Giannoni (Chapter 5), is a theoretical investigation of the
5 long-run relationship between growth and environmental sustainability in a small
7 economy that specializes in tourism based on natural resources. The authors
3 present two versions of a growth model in which tourism development generates
) pollution, while tourists are pollution-averse. They establish that long-run posi-
0 tive economic growth exists only for a particular value of tourists' aversion to
1 pollution. Furthermore, they show that an intensive use of facilities is associated
2 with a lower growth rate for destinations specializing in green tourism. They
3 also show that if the destination can choose the degree of utilization of facilities,
4 tourism will generate positive growth only if tourists are not too heavily
5 pollution-averse. In this case, the growth rate of the economy will be a negative
6 function of tourists' aversion to pollution, so that the 'greener' the destination,
7 the slower is growth. The results of the analysis might be of assistance to policy-
8 makers in many developing countries that are endowed with environmental and
9 cultural amenities. The choice to be faced is between addressing economic effort
0 towards the development of an attractive tourist sector, or investing resources in
1 more traditional industrial sectors that are characterized by higher technological
2 intensity. It is an open question as to which might be more suitable to contribute
3 to the growth of the economy as a whole.

4 Chapter 6 is dedicated to an empirical investigation of the relationship
5 between tourism and trade. In this chapter, entitled 'On the relationship between
6 tourism and trade' by María Santana Gallego, Francisco Ledesma Rodríguez and
7 Jorge Pérez Rodríguez, the authors use UK data to provide convincing empirical
8 evidence of a bidirectional relationship between tourism and trade. More pre-
9 cisely, when the short-run nexus is analysed using Granger causality tests, such
0 a relationship is found to be unidirectional, specifically from trade to tourism (i.e.
1 an increase in trade leading to more tourism). However, when the long-run nexus
2 is tested by means of co-integration analysis, the authors find that tourism also
3 causes trade. They point out that, as growth theory suggests that trade (and
4 tourism, as a source of trade in services) promotes growth via increased market
5 size, this effect can be encouraged by a virtuous complementary relationship
6 between international flows of tourists and international trade.

7 Chapter 7 analyses the role of rural areas in the productivity of the tourism
8 sector. More precisely, 'Evaluating labour productivity of diversifying rural
9 tourism: evidence from Japan' by Yasuo Ohe first compares rural tourism activ-
0 ity with past farm products resulting from rural resource use, and develops a
1 basic framework to conduct an empirical evaluation of the state of market for-
2 mation of rural tourism activity in Japan. Second, the chapter examines the rela-
3 tionship between the utilization of rural resources and rural tourism. Third, it
4 estimates the marginal labour productivity of rural tourism activities, and exam-
5 ines the formation of the market for rural tourism in connection with the

utilization of rural resources. Finally, the chapter also considers policy implications for the development of rural tourism. The main findings are that providing tourism services is a more viable form of employment than farming-related services and that rural tourism remains an undersupplied service that needs more favourable institutional conditions if it is to flourish.

Part III focuses on the sustainability of tourism development. While sustainable tourism is a key word in the other chapters of this book, it represents the core of the analysis in the three chapters that make up this part. This issue is investigated from three different perspectives, namely: (1) methodological, through the construction of an index that is able to measure sustainability of tourist destinations; (2) theoretical, through a growth model that analyses the dynamic properties of an economy specializing in tourism based on environmental resources; and (3) empirical, by means of an analysis of the economic benefits derived from a proposal designed to preserve and restore a cultural heritage site.

The first task is accomplished in Chapter 8, ‘Clustering tourism destinations by means of composite indices of sustainability’ by Juan Ignacio Pulido Fernández and Marcelino Sánchez Rivero. This chapter establishes the methodological base for the design of a global composite index for the measurement of sustainable tourism development. Its calculation responds to the fourfold dimension of sustainability, namely economic, social, environmental and institutional, and facilitates the monitoring and control of results of development policies of sustainable tourism. At the same time, it also serves as an element for the measurement of convergence among different tourism destinations in order to obtain a deeper knowledge about the elements that condition market competitiveness. The use of different weights ensures that the composite sustainable-tourism index fulfils its main purpose of ranking tourism sustainability, so that the progress of tourism destinations towards sustainability can be determined and compared. Such a tourism-sustainability ranking will encourage destinations to make their own choices concerning sustainability, to set policies and to establish support programmes with well-defined targets and monitoring procedures. Moreover, the decision-makers involved will have more information with which to evaluate the performance of these programmes.

The second issue is faced by Giovanni Bella in Chapter 9, ‘Equilibrium dynamics and local indeterminacy in a model of sustainable tourism’. The chapter presents a theoretical model where the representative agent faces a tourism-oriented economic scenario. In this framework, tourism is based on the use of the existing environmental resources. This leads to an inevitable trade-off as both positive effects (in terms of new output) and negative impacts (in terms of environmental degradation) are generated. The problem, then, is to choose the optimal number of tourists to be hosted in this economy, as well as the long-run level of both consumption and natural resource extraction that maximizes aggregate social welfare. An important result of this chapter is that when externalities are taken into account, indeterminacy and multiple equilibria issues arise. It is then important for the policy-maker to find a way to ‘select’ the appropriate equilibrium, possibly based on cost–benefit analysis. This chapter is com-

1plementary to that of Cerina and Giannoni (Chapter 5), where indeterminacy is
2ruled out. However, as in Bella's analysis, environmental and natural resources
3pose important constraints on the development of a tourism sector.

4A relevant empirical issue that is related to the analysis of sustainability is
5raised by Tran Huu Tuan and Ståle Navrud in Chapter 10, 'How tourism can
6help preserve cultural heritage sites: constructing optimal entrance fee schemes
7to collect visitors' WTP for the World Heritage Site My Son in Vietnam'. The
8authors apply the contingent valuation (CV) method to estimate the economic
9benefits that would be created by a proposed plan to preserve and restore the site.
0By estimating the magnitude of the benefits and showing the respondents' will-
1ingness to pay (WTP) to preserve and restore the site, the chapter is also useful
2in informing decisions on designing pricing strategies (specifically, entrance
3fees) for cultural tourist destinations that are similar to My Son. Determining the
4demand for cultural assets, and particularly the price elasticity of the WTP for
5this site with different visitor groups, can help policy-makers to generate a
6pricing policy that will regulate visitor flows and maximize visitor revenues for
7this tourist destination. The empirical results suggest that the adoption of the
8optimal price regime would both increase revenues and reduce congestion at the
9site. However, this pricing regime would not reduce the congestion problem due
0to Vietnamese visitors. The idea of imposing a pricing structure with seasonal
1differentiation to reduce the number of Vietnamese visitors in the high season is
2one way of addressing this problem.

3The book concludes with a final chapter that summarizes the issues raised,
4evaluates the main findings and messages of the ten main chapters, and discusses
5some future developments in this exciting area of research in tourism
6economics.