BOOK REVIEW

Alvaro Matias, Peter Nijkamp, Manuela Sarmento *Quantitative Methods in Tourism Economics*

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Nowadays, tourism becomes a more competitive industry. Its contribution to general economic development is increasingly important. In order to quantify the role and the impact of the tourism on present economy, a lot of important researches were focused on the idea of quantifying the tourism's activities and determinants. The main difficulty of this scientific approach is incorporating elements not only from economics, but from psychology, demography, sociology or environment protection, as well.

I had the opportunity and the real pleasure to read the book entitled *Quantitative Methods in Tourism Economics,* which has the merit of bringing new approaches on contemporary tourism and realising a very interesting synthesis of mathematical and econometric specific technics. The high scientific level of this book is supported by its authors, remarkable scientific personalities, who succeeded in combining a set of contributions on modern methods and techniques in tourism research.

The main challenge for this book was to put together under a high scientific approach different points of view, case studies and theories and to obtain special conclusions.

The book covers three sections and 18 chapters which allow studying behavioural issues connected to tourism, supply of tourist amenities and macro and sustainability issues, as well.

In **Section I,** after an editorial introduction, Chapter 2 proposes to the reader a new marketing strategy in tourism focused on developing loyalty. A historical approach of specific terms in their trend leads to the idea of improving connection between marketing and customer loyalty in the tourism industry. Basically, it represents an introduction to a study divided into five parts. The study of loyalty in the tourism industry is based on specific methodology as a result of the analysis of 74 studies. These studies treat the loyalty construct from one-dimensional to multi-dimensional approaches. As a result, the implementation and the measure of the impact of relationship marketing strategies are based on creating loyalty in the tourism industry and operationalization of loyalty construct.

Chapter 3 is focused on tourists return intensions' analysis under the assumption that is more cost-effective to retain the same tourists than to attract new ones. This approach is supported by a case study related to Algarve (Southern Portugal) and takes into consideration German and British tourists. Using six initial hypotheses, the applied model of the study is focused on the utility derived from the intention to return, which can follow normal distribution. Finally, the probability for return is a cumulative logit-probability function. The theoretical approach is confirmed by 1500 questionnaires. The main conclusion of this chapter is that different nationalities have different return intensions. Moreover, these intensions depend powerfully on age and education.

An interesting evaluation of the interrailers' satisfaction regarding the tourism services and activities is presented in Chapter 4. This study starts from the main tourism activities and analyses travelling in Europe by rail using a case study focused on Italy, Greece and Croatia. The main tools used to measure tourist satisfaction are direct observation and inductive method, as well.

Chapter 5 introduces forecasting procedures to quantify the tourism demand in South Africa. In order to realize it, quantitative methods are used, including regression. Basically, the tourism demand is forecasted under Autoregressive Distributed Lag Model (ADLM).

The connection between a more flexible tourism and Information and Communication System (ICS) is analyzed in Chapter 6. ICT becomes important not only for the tourism distribution, but also for tourism demand. As a result, a dynamic panel data model becomes useful and it supports the idea that the number of Internet users can support an increase of the tourism demand.

Finally, Chapter 7 points out the relationship between migration and tourism flows. The case study applied to New Zealand is supported by a gravity model built using the following assumptions: a big size of an economy with big trade and great distance implies lower trade. This kind of model is used in order to connect GDP from New Zealand, to world's GDP and foreign countries' GDP, distances between foreign countries and Wellington, the tourists who speak or not speak English, the number of migrants in New Zealand and the exchange rate. The main conclusion of the study is that a 10% increase in the stock of immigrants from a foreign country leads to a 2.1% increase in the number of incoming tourists from that country.

Section II of the book deals with the analysis of the supply of tourist amenities. Chapter 8 realizes an analysis of the local public investment's impact on tourism industry, including creation of new holiday destinations. The regional approach covers Saxony and is based on the cluster analysis. It is followed by an econometric analysis under regression procedures. The final result of the analysis is the idea that the tourist localities need special touristic public investment, different to those in the newcomer localities.

The economic impact of health tourism is the main objective of the analysis in Chapter 9. This analysis is supported by two elements: an estimation of the tourist and the entity that promotes the program expenditures and an input-output model able to quantify output, employment, household income and value-added. The study covers health tourism in Portugal and is focused on the multiplier effects.

Regional development in Greece under cultural festivals is a very interesting approach in the modern tourism management that covers Chapter 10. The connection cultural festivals - tourism increase is analyzed using the Delphi method applied to three groups of respondents. The case studies reveal the role of the cultural festivals in declining agricultural local and regional areas under the restriction of existence a good infrastructure.

Chapter 11 deals with a geographical weighted regression model able to analyze the spatial and environmental characteristics of rural tourism in La Palma, Spain. In order to obtain better results, two methods of analysis are combined: GASIC Algorithm and GWR. The main target of the analysis is to support destination managers and stakeholders in designing promotion and investment policies in rural tourism.

Chapter 12 is focused on the analysis of the yield revenue management in the hotel sector in Madrid. The Delphi technic is used again for 3, 4 and 5 star hotels. According to this study, the main goals of the hotel management have to be the best strategic management and analytical system able to achieve high profitability.

Section III covers macro and sustainability issues. As a result, Chapter 13 emphasizes the importance of tourism as aa actor of economic development and social transformation. The analysis uses 6 variables of tourism (travel and tourism economy GDP, travel and tourism economy employment, travel and tourism demand, capital investment, international visitor arrivals and overnight visitor arrivals) and other 8 variables of the economic development (human development index, life expectancy at birth, literacy rate adult, enrolment ratio for primary, secondary and tertiary education, GDP per capita, probability at birth of not surviving to a specific age, mobile cellular subscriptions and internet users). Each group of variables is represented in a specific vector (x and y). The main conclusion of the study (which covers 117 countries) is that a positive correlation between tourism growth and economic development occurs only in those countries which have the lowest level of economic development.

Chapter 14 proposes an analysis of the tourism industry in Northern Portugal based on gender, wages and productivity. The chapter performs an estimation and comparison between wage and productivity of male and female employees in the tourism industry using dedicated production

functions. The main findings of the case study indicate that female employees are less productive than male employees, even that the vast majority of employees in tourism are female employees.

Starting from the Global Competitiveness Index, competitiveness and sustainability in tourism are analyzed in Chapter 15. The regional approach (NUTS 2) is very difficult, even though the study intended to cover France, Spain, Portugal and Italy. The main idea is that more qualified employees have to support new competitiveness factors as innovative products and services connected to sustainable use of the natural and cultural resources.

Chapter 16 concentrates on the tourism development in Taiwan. The author uses a ratio analysis and regression models under an input-output approach. The input variables are: the number of guest rooms, the number of equivalent full-time employees in the rooms department and the number of equivalent full-time employees in the food and beverage department, while the output variable are: number of guest rooms sold, the total room revenue and the total food and beverage revenue. The whole analysis is made under the restrictions of the present global crisis.

The reader is introduced into the institutional analysis of environmental management practices in Chapter 17, in the context of the golf tourism development. The research model in this chapter covers the following form: normative pressure, coercive pressure, mimetic pressure, environmental practices applied, organizational performance and social legitimacy. A structural model built using these form allows analyzing the impact of the institutional context on the golf courses.

Finally, Chapter 18 is focused on market segmentation in tourism. This approach is able to subdivide the heterogeneous tourism market into homogeneous subgroups using variables as consumer needs, characteristics and behavior. The case study is built under three pertinent hypothesis and help managers to adopt the best strategy in developing their touristic capacities.

The scientific approach, the econometric models used to quantify tendencies and processes in tourism and the case studies recommend this book as one of the most interesting and useful one: it is useful for specialists and managers in tourism, as well. The editors of this book succeeded in launching a new scientific challenge for all those interested in tourism related research.

Sincere congratulations for this new theoretical and practical performance!