Preface

Holistic optimization techniques are well known in the research areas of engineering, science and technology. The current trends on application problems in engineering, science and technology are expanded in the areas of hotel, tourism and travel industry across the globe. This book chapter focuses on the best and high quality selected papers on the following research topics. The well-known and new methodologies on the holistic optimization techniques have been used to solve some of the complicated and hard problems in the areas of hotel, tourism and travel industry.

This book chapter project will be open for interested authors in hotel management, social science, hospitality management areas to submit their manuscripts. It would also cover the best chapters from the research areas of information technology and computer science which are related to hotel, tourism and travel industry. The book chapter mainly focuses on new development and contribution of the current research to the body of the knowledge in the areas of hotel, tourism and travel industry which are related to internet and computer technology.

The objective of the book is to explore the emerging innovative and novel technology on Holistic Optimization Techniques in the Hospitality, Tourism, and Travel Industry.

The prospective audience of the book “Holistic Optimization Techniques in the Hospitality, Tourism, and Travel Industry,” will be decision makers, managers, supervisors, executives, travelers, tourist, hoteliers, agents, researchers, directors, financiers, economics as well as industrialist.

The book chapters cover the following topics:

- Cultural Tourism,
- Tourist Mobility,
- Metaheuristic,
- Ethiopian Tourism,
- Game Theory,
- Hotel Management,
- E-Commerce,
- Business to Customer (B2C).

The book is organized into 20 chapters. A brief description of each of the chapters is as follows:

Chapter 1 is about the current accessibility to the UNESCO World Heritage Sites on the example of Cracow and Warsaw, the most popular historical cities in Poland. The disabled represent a significant proportion of the cultural tourism group and might have considerable importance to the development of tourist industry. However, their needs are not always met. Especially in Warsaw specific problems
for tourists with disabilities include: poor information, inaccessible streets and sidewalks, only partly accessible public transport, hotels or dining places, museums and architectural relics. In Poland tourism development in the heritage sites could be a positive force for generating revenue, enhancing cultural education and helping to preserve the historic values. However, it might be done under condition of re-examining current trends of planning and introducing a universal, holistic design philosophy, innovative technologies enhancing accessibility to all tourist infrastructure, facilities and services.

Chapter 2 examines hotel yield management from a game perspective using a duopoly situation of two hotels. The hotel yield management determines strategies by considering the number of available rooms in the Bertrand situation. The authors have derived the strategy that realizes a maximum profit under a given situation and constraints. Furthermore, it will validate the game-based strategy developed for hotel yield management. In the real world, a business manager adopts an optimum strategy of yield management to gain profits in the current conditions; after the initial strategy is chosen, however, managers continuously weigh new strategies and investments. Therefore, it’s necessary to import the method of real option. Such maneuvers and investments are required to build new strategies amidst competition in the industry.

Chapter 3 aims to analyze the different tourism search and metasearch engines for online booking based on supplier perspective (accommodation, flights, leisure and package deals) and taking into account the possible relations generated by the structure and content variables of web offers. A thorough literature review study establishes the main attributes of structure and offer content of webs focused on the user preferences. The empirical analysis is based on a representative sample of e-commerce of tourism websites, its main characteristics and possible correlations according to the structure and content of their offers. Based on this, the work identifies competitive advantages that will set the trends for the sector and future short-term strategies.

Chapter 4 deals with the decisions on the large scale infrastructure expansions in hotels are often taken while future developments are uncertain. As these projects take many years to be implemented, the hotels are exposed to multiple uncertainties. Since the costs involved in these expansion projects are quite high and most often irreversible, hotels would benefit from analyses that incorporate uncertainty in addition to traditional valuation techniques like the discounted cash flow (DCF) method. Decision tree analysis provides a distinct approach to strategic investments that quantitatively takes into account the uncertainties involved in the investments. By using real options analysis managers can incorporate and quantify flexibility and timing in their analysis. The objective of this chapter is to detail the discounted cash flow, decision tree and real options methodology and their applications specific to hotel expansion investments.

Chapter 5 focuses on the implications of branding on customer satisfaction and loyalty through two mediators:

- Brand image and
- Destination brand loyalty.

The study took place in North Cyprus as a case to investigate and explore the factors that determine the brand definition for the island and how such branding can become a marketing tool. The study revealed that the customer involvement which is the plan for tourism agencies to involve tourists in trip plan to make customer feel that they are part of the process themselves. The results revealed that customer satisfaction is a determinant factor at creating destination image.
Chapter 6 talks about booking cancellations in the hospitality industry not only generate revenue loss and affect pricing and inventory allocation decisions, but they also, in overbooking situations, have the potential to affect the hotel’s online social reputation. By employing data sets from four resort hotels and addressing this issue as a classification problem in the scope of data science, the authors demonstrate that it is possible to build models for predicting booking cancellations with accuracy results in excess of 90%. Results allow hotel managers to act on bookings with high cancellation probability and contain the associated revenue losses, produce better net demand forecasts, improve overbooking/cancellation policies, and have more assertive pricing and inventory allocation strategies.

Chapter 7 aims to analyze referral and conversion traffic from user-generated content (UGC) to other key online/offline information sources and when consumers use UGC along with their information-search and the related cross-visitation. Manual coding of open-ended questions and descriptive statistics were applied. Findings revealed that UGC plays a relevant role, along with all the online searching and booking behaviour, particularly UGC within online travel agencies (OTAs), which appears to be significant in the early stage of the tourist information search process. Contributions to the body of knowledge and managerial implications are discussed and suggestions for further research are given.

Investing in a hotel involves a big-ticket transaction. Traditionally, a number of cash-surplus entities are selected to pool-in the capital necessary for the acquisition. A critical consideration is, then, to minimize the overall cost of capital resulting from the return expectations of the surplus units. In Chapter 8, the authors introduce the readers to typical sources of hotel finance and considerations about minimizing the weighted average cost of capital (WACC). First, they provide a commentary on various types of funding sources. Further, they provide rationale for why a particular surplus unit specifies certain constraints to the investment manager. Finally, they walk the readers through various steps of the optimization process using the SOLVER function in MS Excel.

Chapter 9 presents essay review explores the problem of terrorism and security in tourism fields. Certainly, plans and policies provided by guide-books are not being followed in disaster-contests simply chaos and disorder are the nature of emergencies. Beyond any protocol, crises and security are not properly defined by scholars. They have explored not only the roots of terrorism but security over 20 years. Despite the criticism, they deserve recognition for this legacy. Based on substantial point of divergence, these specialists are concerned by the financial dependency of societies respecting to mass-media and its coverage of terrorist attacks.

The purpose of Chapter 10 is to search and review recent researches related to the area of tourism under supply chain management and optimization models perspectives. The main aim of this chapter is to identify and discuss how the tourism supply chain is studied when it is subject to different economic, market, and optimization strategies. Considering the period of 2005 to 2016, a systematic review was performed using research studies in the area of tourism supply chain management. The results show that game theory is used as a theoretical base in the majority of the cases, but several novel approaches are also incorporated to the analysis. This review can be used as a complement of the previous works and a valuable information source for the decision makers involved in the tourism area.

Chapter 11 has the objective of approaching the problem in the perspective and context of Enterprise Resource Planning (ERP) systems in the Hospitality Industry. It focuses on implementation project strategies, namely in the particular and relevant aspects of their return on investment as well as benefits expected and delivered. Projects are often implemented on-time, on-budget and are technically appropriate, nevertheless the expected benefits are not achieved. This chapter seeks to answer these questions in the context of ERP systems in the sector of hospitality industry, through a case study developed in Portugal.
Organizations constantly have to address the problem of identifying tangible and intangible benefits that can be achieved in result of investments made in Information Systems/Information Technology (IS/IT). Chapter 12 has the objective of approaching the problem in the perspective and context of Enterprise Resource Planning (ERP) systems in the Hospitality Industry. It focuses on implementation project strategies, namely in the particular and relevant aspects of their return on investment as well as benefits expected and delivered. Projects are often implemented on-time, on-budget and are technically appropriate, nevertheless the expected benefits are not achieved. This chapter seeks to answer these questions in the context of ERP systems in the sector of hospitality industry, through a case study developed in Portugal.

The purpose of Chapter 13 is to examine hotel room supply and demand for optimal capacity in Turkey. The hotel industry is capital-intensive with high operating leverage in providing accommodations. Turkey’s experiencing growth in tourism and has remarkable increases in accommodation. This situation possesses great importance for the capital groups investing in this area. Single period inventory model is used at the analysis phase and several interests are examined on this topic. Future Room demand is estimated by ARIMA and in estimating cost of undersupply earnings before taxes is used per room night sold. Combining the derived cost ratio with the future room demand and probability distribution estimated from the ARIMA method, the optimal hotel room capacity can be determined.

The authors of Chapter 14 aim to define the spatial configuration of tourism areas including different destinations within a same region. Tourist mobility is employed as a methodological criterion to reveal the network relationships among destinations and explain how tourism areas are being shaped and reshaped. The study combines Network Analysis methods and multinomial logistic regression models, in an approach to processing the data of a sampling survey, carried out in Sicily. The results show that the network structures among destinations affect the shape and dimension of tourism areas. Useful evidence for the spatial planning of tourism regions and destination management strategies are derived in this chapter.

The majority of the problems of real life applications can be defined as optimization problems, for example, finding the optimum trajectory of a robot, optimal data flows in various processes like city traffic optimization or modeling and optimization of the seasonal variances of supply, traffic and facilities occupation in tourism among the others. The structure of Chapter 15 is such that on the beginning are introduced bio-inspired algorithms, then parallelization of algorithms and parallel hardware and at the end, open research on Ho Chi Minh City traffic optimization real world example is introduced. In Conclusion are discussed possibilities of mutual combinations of introduced methods.

In Chapter 16 the study on a game theoretical model is applied to explain the decisional process of entrepreneurs about forming partnerships in formal tourism networks. The model shows that, in terms of Nash equilibrium, the cooperative optimization of a tourism network should be achieved when entrepreneurs have the same business goals and a common tourism vision. The chapter presents an empirical solution that arises from the case of Business Networks in Italy, which represents an innovation in Italian Law.

Chapter 17 researched on profit optimisation in the travel sector of hospitality industry has been dominated by the development of effective revenue management techniques to help managers in situations where demand is variable, variable costs are low, assets are fixed and perishable. These techniques have been extended to the restaurant sector, with recognition that variable costs are a larger proportion of total costs and not fixed. In fine dining restaurants substantive wine and spirit inventories present operators with the challenge of how to optimise the sales per dollar of inventory. Data from a successful fine dining restaurant are used to illustrate how the model can be used to improve the sales efficiency of the wine list and inventory. Opportunities to extend the model to spirit inventories are proposed in this chapter.
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Generation Y has been considered to be a sizeable new market. Chapter 18 is based on a sample of 1131 Italian travellers from Gen Y, investigates their views for and against disintermediation, and analyses how their choices are influenced by user generated content (UGC), rather than by information provided by high street travel agencies. The factor analysis uncovers three dimensions:

- “Benefits of Travel Agency,”
- “Benefits of Online Reservation,” and
- “Online Trust and Search Behaviour.”

The findings suggest that hotel managers and travel agencies should monitor Gen Y perceptions of the benefits and constraints of using the Internet, UGC and travel agencies for hotel booking. The accommodation providers should use online channels to create affective commitment in their young customers. Limitations of the study are discussed and suggestions for further research are given in this chapter.

In Ethiopia, a country which has been named as best tourism destination for 2015 by the European Council on Tourism and Trade (ECTT), there are many tourist destinations. The problem of determining the optimum route to visit all the tourist sites with minimum traveling time can be formulated as a travel salesman problem. Chapter 19 studies 17 of the famous tourist destination will be selected and a travel salesman model will be formulated. Due to the NP hardness of the travel salesman problem, metaheuristic based algorithms are found to be more effective. Hence, a recently introduced swarm based metaheuristic algorithm, called prey predator algorithm has been used to deal with the formulated problem.

Chapter 20 is attempting to use “Relative to an Identified Distribution” (RIDIT) algorithms based modelling for analysing real-time empirical data relating to tourists’ attitude and preference for a better understanding of the tourists’ motivation and behaviour. RIDIT approach for evaluating the factors that influence tourist behaviour is not a very common approach in tourism sector. This chapter on modelling tourists’ opinions and perceptions with RIDIT analysis would try to guide the empirical research in the domains of hospitality, tourism and travel research and analytics process in generating Optimized research outcomes.

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We editors wish all the readers a pleasant and enjoyable, insightful and inspiring lecture of the contributions of this IGI Global book. In fact, we cordially hope that this special issue will present and value IGI Global as a premium publishing house in optimization, hotel, tourism, travel and hospitality industry which strongly fosters very much needed intellectual advances and their contributions to humanity and mankind across the planet.

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