



## QUANTITATIVE MULTI-OBJECTIVE EVALUATION OF CONSUMER DATA MANAGEMENT TOWARDS EFFECTIVE DECISION MAKING IN TOURIST RESORT

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### Abstract

The paper deals with the key factors affecting tourist resorts management in effective decision making. The evaluation methodology based on effective use of information received and addressed to resort clients, highlighting the key decision objectives, variables and information resources. Based on functional analysis, the framework for an effective capability driven DSS system is discussed and the data driven functions are presented. The results of an application to medium size summer holiday resorts in Alexandroupolis region in Northern Greece are discussed, providing key messages to planners, decision makers and managers providing the key principles of use of the clients' information towards effective decision making, resilience business and productive management.

### Introduction

Investing in transport infrastructures is a key driver in strengthening the national economy. For the south European countries tourism plays an important role in regional economic development, and in many cases, it significantly contributes to local development, representing the main source of income for residents. Despite an unstable economic environment, the southern European holiday tourist destinations have faced enormous growth in the tourist field during the last decade, which in turn has significantly increased the adequacy of the available hotel and resort infrastructures. As indicated in [1] that tourism growth in 2014 in absolute terms was led by Northern European and Mediterranean countries (which reported a growth of 7%). The dimensions of competitiveness are key factors towards resilience and sustainability, while the socially coherence, stability and security are issues promoting the business uncertainties. [2] indicates the remarkable contribution of tourism to regional economies, providing evidence that the selection of the final tourist destination is related to infrastructures efficient management.

Tourism is a dynamic and competitive industry and one of the fastest growing industries in terms of revenues. Despite the unpredictable business environment, travel and tourism industry continued to present high resilience and according to [3] the growth of the sector outpaced that of the global economy for the sixth year. The outlook for business and leisure travel in 2017 remains robust. Continues growth of tourism makes the industry extremely competitive and causes a whole set of desires, needs and travel requirements on behalf of the consumers, that should be fulfilled. Cornerstone towards effective and successful business development is to provide the facilities, the services and the prices that meet the needs of demand. Therefore, for the tourist services providers, the development of flexible organizational scheme, the implementation of an effective Decision Support System (DSS) supporting substantial decisions making and the monitoring of performance in infrastructure operation and business financials, are the key success forces towards business resilience and enterprise profitability.

This paper deals with the assessment of the Decision Making (DM) making in medium size tourist resorts. Key objective of the paper is to define an approach to review the DM in terms of outputs in management performance, business development and company intelligent innovation. The methodology approach includes



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two essential steps: (a) the development of a set of key areas assess and monitoring the contribution of DM in resorts operation and development; and (b) the evaluation of the performance for a group of similar resorts. The assessment methodology based on multi-objective unweighted analysis to range the DM performance in the scale of strategic planning and management. The application deals with a sample of high attractive tourist resorts in region of Thrace in Greece, providing key messages and conclusions in field of decision making and effective management

### Materials And Methods

#### Tourist resorts performance

As a service industry tourism has numerous tangible and intangible elements. Tangible elements include transportation, accommodation, and other components. Intangible elements relate to the needs of service. To meet the needs of service several components must work alongside and smoothly to create a prosperous result. Hotel industry benchmarking deals with various methodologies over time to review performance, by focusing on certain aspects of operation efficiency, however, research on evaluating the performance of decision making process and outputs are very limited. Measuring and comparing the performance of resorts provides two features become crucial to the analysis: the choice of variables to be used and the methodological approach to evaluate the different case studies and estimate the best performance. The following paragraphs provides such information of the proposed methodology constructed to assess the question of evaluation of DM in resorts.

#### Management key components

Successful management can develop quality visitor experiences that meet, and ultimately exceed, consumer expectations. To reach this goal the managers must juggle between a certain level of communication on the visitor's behalf and a certain level of service from the hotels to find an equilibrium and ultimately moderate and influence the level of satisfaction that will conclusively translate in the resort attractiveness. The managerial key elements that influence the attractiveness of a resort is of key importance to recognize the central role of perceptions and prospects that make a tourist choose a destination. Tourists are pushed by their needs. The choice will progress from an initial state where the visitor examines witch destination will fulfill the clients' requests and needs. The level of satisfaction from the choice made will judge the resort attractiveness after all. As a result, is very importance from a managerial perspective to first stimulate the clients interest to convince them make the choice that best meets their needs and when the choice is made managers must moderate the performance to meet a certain level of satisfaction that is promised to the client by stimulating their interest in the destination.

A very important factor in the profitability of tourism businesses is the focus on the quality of the services they provide to their customers. Quality of service is characterized as the gap between customer expectations, service and customer perceptions. The aim of the hotel business is to create a growing steady economic course in the business sector to evolve more but at the same time to satisfy and maintain its customers.

In the event of customer dissatisfaction, the hotel must promptly and effectively take corrective action to achieve its satisfaction. According to surveys, recovery management is considered to have a significant impact on hotel customers who have experienced service omissions because they are usually more emotionally connected because they are just observers of the hotel's recovery efforts. To achieve these goals, the management of the hotel unit should devise a strategic complaint management plan that will be promoted and strictly followed by all levels of the company's human resources,[4].

The importance of analyzing and managing complaints is confirmed by all hotel managers who work with them. The company, exploiting complaints, learns to work properly and not to repeat mistakes of the past. In addition, the management of the hotel can understand the different customer needs and "reacts" proficiently in similar cases, to meet the needs of new customers without even needing to request it (hidden needs). Additionally, by analyzing complaints through the hotel's information system, the weak points of the company are shown. The senior management must be informed and then provide solutions that will be promoted to all staff to follow a single strategy which will improve the experience of hospitality in the hotel.



Furthermore, online reviews have gained significant strength in the hotel selection process for guests. Most travelers will use online resources to get information about the hotel and generally about the tourist destination. Online comments, from other visitors, are considered a reliable source of information and travelers can form a better picture of the hotel than they could simply by looking at the hotel's official website. The client's pursuit is to check before the stay, the exogenous and endogenous factors. The intrinsic factors concern the satisfactory services they will receive from the organized sections of the hotel units.

Surveys show that hotels should embrace online reviews and accept them as an opportunity for constructive feedback. It is certain that hotels that monitor and respond to customer feedback directly and honestly improve the underlying causes of negative criticism and come out gained over time[5]. At this point it is important to recognize the reasons and prospects a tourist makes to choose a resort. The following figure shows the needs of customers, the ones they express, and their hidden needs. The course of the scheme shows what actions should be taken by the management to achieve the customer's needs satisfaction.

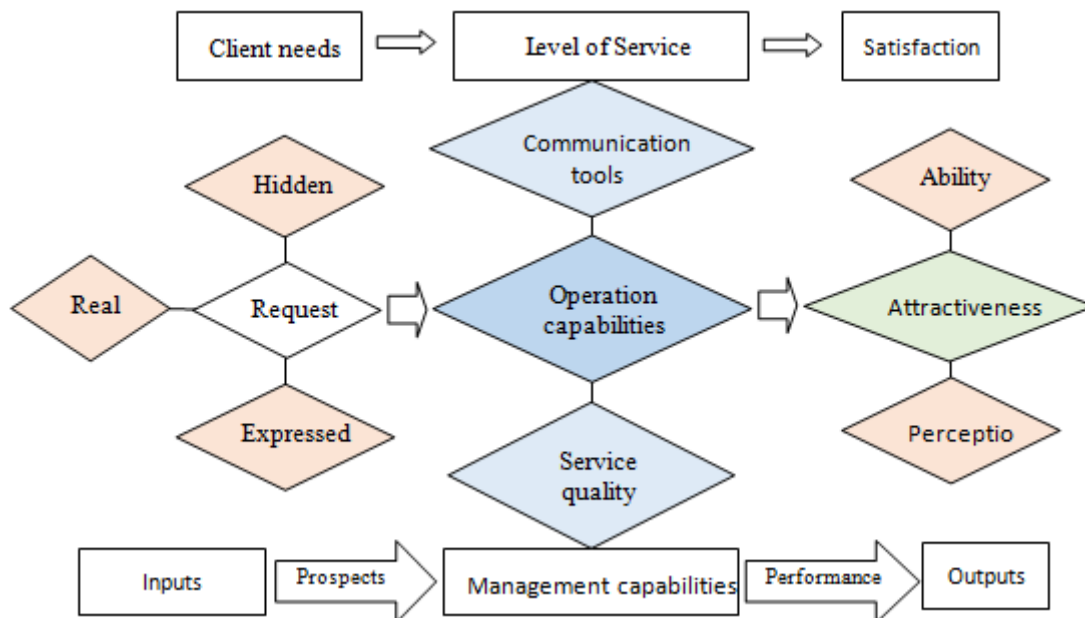


Fig. 1. Managerial key elements influencing resort attractiveness

**Tourist resort decision making**

Effective decision making is of crucial importance towards business resilience and sustainable development. Main target of this research is to identify the DM performance of tourist resorts and investigate the determinants that are associated with variations in hotel business and operation, which affect the decision process. Resorts' performance is described as a set of performance ratios defined by financial and physical measures of inputs and outputs presented in figure 1.

Effective decision making in tourist resorts consists from the financial, competition and data analysis through evaluating the efficiency, productivity and innovation and the results lead up to conclude management performance, business performance and Innovation. Financial analysis considers the regional competition, the resorts financial (equity, assets, etc) and the human resources to monitor the efficiency that leads up to the management performance [6]. Competition analysis examines the international competition, the infrastructures, the suppliers and the capabilities in general of the resort to make an assessment on the productivity that will ultimately help the business performance. Through data analysis and the collection and storage of the information the business supports the knowhow and has a clear set goal to innovation [7]. According to above



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definitions and Based on System of System concept and the agent theory, the key variables effectiveness in decision process given the taxonomy of effective DM for the resorts business development depicted in the following figure.

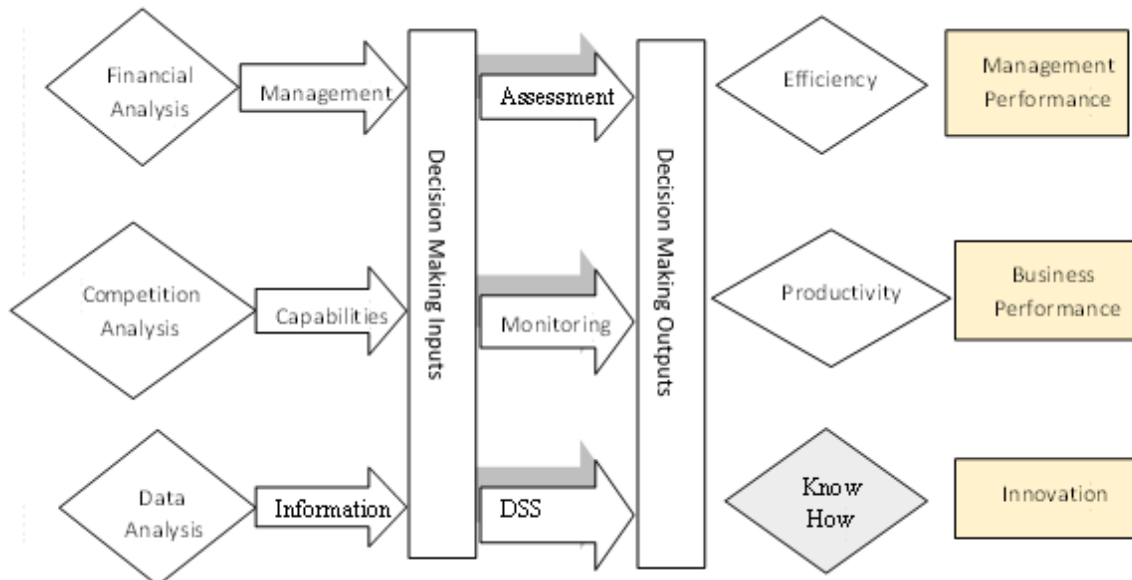


Fig. 2 Decision Making taxonomy for evaluate tourist resorts performance

### Methodology to evaluate decision making performance

This section describes the evaluation framework and outlines the methodology used in the assessment of DM in resorts development. The evaluation framework derives from a qualitative approach of the total scores, by using a rating-oriented depiction of resorts DM performance. This methodology brings a strategic vision to the performance analysis and is designed to furnish a tool for evaluating the impacts of DM to resort’s business development.

The outcome of this analysis depicting the performance aspects of airport business on regional tourism market is shown in figure 2. The performance ranking is divided into 6 performance areas, related the information use to meet managerial and business targets. The first level of rating represents the absolute necessary data analysis outputs to operate resort business and the sixth level, which is the highest, a world class resort operation [8]. The margins of each area are formed by the level of data analysis and the resources used to support decisions [9]. The methodology consists on comparing the total performance provided by the evaluation of several factors, allowing comparisons between different resorts in the same period. The application of the multi-variable assessment of decision-making is based on information provided by the resorts management providing the necessary framework to apply the current ranking of each resort in relation to the benchmark (best performing resort of the group).

The rating values is based on the star (\*) approach, commonly, used in hotel industry. The description of the rating levels is presented in following table.



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*Table 1 Rating of management capabilities by level of data use*

Rating	Information Recourses Variety	Data analysis framework	MIS	Use of outputs
1*	Company/Reception	Storage	DB	Auditing
2*	Suppliers	Blending	MIS	Administration
3*	Local Authorities	KPIs	MIS/GIS	Regional coordination
4*	National DB	Analytics	DSS	National cooperation
5*	International reservations systems	Big Data	CDS	International cooperation
5*+	Global reservations systems	Mega Data	IDS	Innovation - new products

**Case study****Tourist resort effective management characteristics**

Using a multivariate technique specifically, a conceptual model of 5+ star rating we examine how elements like data, application, system and the use of outputs are used to achieve the desired levels of efficiency and productivity management in hotel industry. We later use a sample of three medium size, 5\* resorts in the region of Alexandroupolis. The research key objective is to evaluate the level of client data used towards effective decision making by the management of the resort. Key target is to review the level of data use especially regarding the hidden needs of customers. The analysis results support management decisions and actions towards brand loyalty and employee's performance. In some cases where hotels are part of a hotel chain or group, it is investigated how closely the management of the unit is with the central chain management. The survey was carried out by creating the appropriate questionnaire and then collecting the interviewed data from the managers of the hotel units.

The numerical application deals with a sample of three medium size resorts in the region of Thrace and specifically, resorts located close to the town of Alexandroupolis. The data used in this study are received by a survey contacted with interviews to senior and high responsibility management of each resort. For obvious reasons, the resort names are not given, without limited the value of the analysis and the paper results. Therefore, the 3 tourist resorts used in this analysis are named AA, AB and TP, each of these providing different management attributes and business characteristics leading to different results of effective use of customer data by the resort management and resort staff.

The evaluation scheme is using a scale between 1 and 5+ star rating to review the efficiency and the productivity of data use and it is examined how parameters such auditing, administration, monitoring, finance, competition and use of data and connection to external data recourses, support the hotel industry decision making towards efficient management, business resilience and innovation. Using a star rating of efficiency and productive management analysis we present the table below.



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Table 2 Evaluation of decision making performance for the sample of resorts

DataUse	Decision Making Function									Average
	Management			Business			Innovation			
	AA	AB	TP	AA	AB	TP	AA	AB	TP	
Auditing	4*	4*	3*	4*	3*	3*	3*	3*	2*	3.2
Administration	4*	4*	3*	3*	4*	3*	4*	4*	3*	3.5
Monitoring	4*	3*	2*	3*	4*	3*	3*	3*	2*	3.0
Finance	4*	4*	3*	3*	3*	3*	2*	3*	2*	3.0
Local/Regional Competition	4*	3*	3*	3*	3*	3*	3*	4*	2*	3.1
International Competition	3*	2*	2*	3*	4*	3*	2*	3*	2*	2.6
Resources	3*	3*	3*	3*	3*	3*	3*	3*	2*	2.8
Storage	3*	3*	3*	3*	4*	3*	3*	3*	2*	3.00
Collection	4*	4*	3*	2*	4*	2*	2*	2*	1*	2.6
Average	3.6	3.6	2.8	3.0	3.2	2.9	2.7	2.8	2.0	2.9

### Analysis Results and Discussion

In general, there is a homogeneity in the management, decisions and plans of hotels. All three support their services on “sea and sun” model during the summer months, with multiple tourist campaigns in neighborhood regions and cooperation with those regions tourist agents. During the winter season, their interest is focused on conference/event tourism, and accessibility is a key issue towards further tourist development and attractiveness. It is worth mentioned that from the sample, AA and TP are branches of a hotel branded group, therefore, administrative decisions and development strategy come from the central management of the groups. TP, which is just be member of a world class multinational resort group presents the lowest performance and maybe this it was a key factor towards merge with an international firm/group, and from a typical family business resulting lack of tools towards supporting efficient decisions move to be part of the decision making support of a multinational company. However, AB seems to present the highest performance, mainly because, its management decision support tools deals with other services (sea sports; restaurants etc) and not the typical accommodation services which is the core business in the other cases.

Regarding customer data collection, complaints and needs, the following phenomenon is observed. These data are collected in the information system used by each hotel, but internal control and further processing for decision-making and strategy-setting are at a very early stage. However, in all three hotels there is a loyalty club for loyal customers, giving incentives to new customers to subscribe, providing extra privileges and services.

Existing hotel infrastructures are being projected on the press and on the internet to open new markets, but there is no targeted marketing plan and a strong look at social media, which is now a big channel for business promotion. Emphasis and attention is given to online reviews and complaints of customers on online platforms such as trip advisor. Hotel administrations treat them as an opportunity to correct mistakes in the day-to-day operation of hotels and provide customers with even better service.

It is also necessary, especially in 5-star hotels, to have continuous retraining of the staff, in line with the feedback received from customers from time to time on service failures and general coordination of hotel operations. The results show conclusions that are valuable to hotel managers as they can easily identify the disadvantages of the hotel they manage and then act appropriately to correct them.

### Concluding remarks

Tourism continued to play a significant role in the development of European regions, contributing to employment and wealth creation. Last three years, in Greece, tourism grow very fast despite the economic restrictions and the political risks in the surround countries. Within this context, effective decision making is a key driver towards tourism development and optimum operation of holiday resorts. This paper presents a multi-objective analysis to evaluate decision making performance, implementing in a sample of summer holiday





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resorts in Alexandroupolis. The results are given in rating of 6 levels of data analysis used related to management efficiency, business productivity and innovation. The analysis framework as well as the case study results could be considered encouraging, other test cases should be examined and studied for bigger samples and longer time periods to confirm the above findings.

### Suggestions for hotel industry

Hotels continue to invest significant amounts in new developments and, to have a positive effect, should ensure closer cooperation with visitors and consumers in the coming years. However, they should focus on personalizing hotel services through smart phones that will provide a variety of services (e.g. check-in applications). This level of personalization, where the customer can choose his room, the view, the contents of the minibar, requires them to invest in their website, mobile platforms and technology. Many hotels are already creating corporate applications for mobile phones, which in the future need to be more modernized and more interactive for the customer-hotel relationship.

They should, also, focus on creating an IT infrastructure that will be able to support growing data requirements and address new challenges. This will be helped by the recruitment of specialized staff (e.g. data analysts, social media specialists). Also, information systems must be able to process larger volumes of data in real time. The tool for achieving these goals is also the use of information decision making systems (DSS). And existing staff must be trained and managed by the modern digital media for faster and better customer service. The success key for hotel tourist destination is innovation.

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