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Identifying the critical determinants of TQM and their impact on company performance: Evidence from the hotel industry of Greece

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Identifying the critical determinants of TQM and their impact on company performance

Evidence from the hotel industry of Greece

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Critical
determinants
of TQM

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Abstract

Purpose – The purpose of this paper is to enrich the existing literature by determining the underlying structure (latent factors) of total quality management (TQM) practices and their impact on company performance outcomes in the Greek hotel industry.

Design/methodology/approach – The research questions were examined using a sample of 153 top-and middle-level hotel-quality managers. Exploratory factor analyses, coupled with multiple linear regression analyses, were used to examine the extent to which elements of TQM influence hotel performance.

Findings – The TQM factors revealed by the present empirical research in the hotel industry are the quality practices of top management, strategic quality planning, employee quality management, customer focus and employee knowledge and education. On the other hand, the performance dimensions revealed through the present study are summarized as: financial performance, customer focused performance and service quality performance. The results also confirmed that most of the TQM elements are antecedents of hotel business performance.

Practical implications – Hotel managers/owners using reliable and valid frameworks comprising TQM practices and performance outcomes may better address their efforts by choosing whether to invest in company refurbishing or better train their personnel to maximize hotel performance.

Originality/value – The purpose of this study is to enrich the existing literature by identifying and confirming the enablers and outcomes of TQM specifically within the hospitality industry. Moreover, the relationship between the implementation of TQM practices and superior company performance is also examined due to the past contradictory results regarding this matter.

Keywords Total quality management, Greece, Company performance, Hotel industry

Paper type Research paper

Introduction

The tourism industry is emerging as a substantial and dynamic component of the Greek economy through its multiplier effects (e.g. on national gross domestic product, employment, balance of payments, etc.). Greece is one of the world's most popular tourist destinations, ranking in the world's top 20 countries. More specifically, Greece attracted more than 18 million international tourists, contributing 28.3 billion euros to the Greek economy in 2013 (16.3 percent of gross domestic product) (WTTC, 2014). The number of jobs directly or indirectly related to the tourism sector was 657,000 and represented 18.2 percent of the country's total employment (WTTC, 2014). However, the economic crisis has led to a high unemployment rate of around 25 percent. In the last few years, political uncertainty in the country, economic concurrence, the unfavorable international climate, the significant influxes of migrants and refugees and the risk of an exit from the euro zone may have a negative influence on potential international visitors. The country's tourist package is a complex mixture of services (airlines, railways, hotels, museums, etc.) and goods (restaurants, souvenir shops, etc.). Thus hotel services are considered a part of a typical country's tourist package, as many travelers evaluate their quality provided, their price, etc. According to hotel records kept by the Hellenic Chamber of Hotels, there are 9,661 units



(with 399,000 rooms) in Greece. Due to the challenges of global competition, it has become imperative for hotels, and Greek hotels in particular, to gain a competitive advantage by providing superior service quality components. Moving forward, hospitality organizations should also conceive of quality as including emotional concepts of delight and as involving the creation of a delightful and memorable experience (Crick and Spencer, 2011). It is assumed that it is more profitable to retain existing customers than to attract new customers, and it is also assumed that customer satisfaction serves as a particularly important antecedent of customer retention, creating long-term customer relationships and customer loyalty (Chatzigeorgiou *et al.*, 2009).

One way of increasing quality focus in hotels is through total quality management (TQM). TQM is a holistic management philosophy, which is based on principles and practices which lead to enhance business performance. TQM is existed and implemented in the hotel industry, but it is still a lack of literature about TQM in this specific industry (Al-Ababneh and Lockwood, 2012). Many case studies or research have provided evidence that supports the TQM success in terms of financial results, operating performance, customer and employee satisfaction. However, many other studies have shown that TQM implementation failed to achieve satisfactory performance results (Rich, 2008; Miller *et al.*, 2009). Thus, the confusing findings concerning the success of TQM practices pose, among other questions, queries about the factors of TQM that can contribute to its effectiveness. Although TQM application has become a part of business strategy and practice, a number of empirical studies that examined the nature of quality management practices have mainly focused on large organizations with manufacturing/operations functions. TQM practices have not been examined as deeply in the hotel industry literature as in the TQM literature (Claver-Cortés *et al.*, 2008). Thus, it is worth conducting a research study focusing on the hotel industry as a separate part of the services sector (Crick and Spencer, 2011). The identification of TQM factors is of particular interest in hospitality services, where “the delivery of hotel services is qualitatively different from the delivery of other types of services, and this influences the way service is managed, delivered and perceived by the customer” (Crick and Spencer, 2011, p. 463). In addition, Politis *et al.* (2009) concluded that most Greek hotels failed to implement most TQM principles. Thus, to gain a better understanding of TQM implementation in the hotel industry, the present study focuses on small- and medium-sized hotels operating all over Greece. In particular, the purpose of this study is to enrich the existing literature by identifying and confirming the enablers and outcomes of TQM specifically within the hospitality industry in the Greek context. Moreover, the relationship between the implementation of TQM practices and superior company performance is also examined due to the past contradictory results regarding this matter.

The rest of the paper is structured as follows: the second section presents a review of the TQM and performance literature and the research questions; this is followed by the methodology and the results of the research. Finally, the paper discusses the findings and ends with the main practical implications.

Literature review and research questions

TQM in the hotel industry

TQM can be considered as a management philosophy which is based on a set of theoretical principles, practices, tools and methodologies. Many definitions are used to describe it as there isn't a universally accepted definition. Vuppalapati *et al.* (1995, p. 86), for example, have defined TQM as “an integrative philosophy of management for continuously improving the quality of products and processes to achieve customer satisfaction” or “a set of management practices applicable throughout the organization and geared to ensure the organization consistently meets or exceeds customer requirements” (Talib *et al.*, 2011, p. 270). The successful TQM implementation requires planning, time and efforts (Talib *et al.*, 2012) and is based on different

multi-dimensional sets of principles. TQM was originated in the manufacturing sector but it has been also adopted by the service sector (Brah *et al.*, 2000). There are a number of instances of TQM being applied in the services sector. Many of these applications concentrate both on tangible functions within service operations (back office activities) as well as on employee-customer interactions, which are particularly important determinants of service quality. As the need for quality management was identified in organizations, it is important to study what constitutes TQM and what the key TQM factors are based on which an effective TQM model can be established. Studies within this field have provided different sets of practices considered essential to the success of TQM completion. This section presents an overview of different TQM factors in the services sector; some of the most representative studies of the last five years are presented in Table I.

One of the earlier empirical studies concerning TQM factors is that of Talib *et al.* (2013), using data obtained from 162 top- and mid-level administrators/managers of services industries in India (healthcare, banking, hospitality and information and communication technology), which represented an extensive list of 17 factors. Psomas and Jaca (2016) examined the relationships between TQM factors and organizational performance based on data from the services sector in Spain. They identified five TQM factors, namely, quality practices of top management, employee quality management, employee knowledge and education, process management and customer focus. In this vein, Voon *et al.* (2014) developed an instrument (Hospise scale) for measuring hospital service excellence culture. It consists of 21 items and is based on the following factors: total employee involvement, continuous improvement, continuous training, teamwork, empowerment, top management commitment and support, democratic management style, customer satisfaction focus and quality culture. Singh and Sushil (2013) identified a total of 14 variables based on an extensive literature review, brainstorming and experts in the Indian airline industry. They found that the level of top management commitment, training and education for employees, continuous improvement and commitment to quality, empowerment of employees, benchmarking and employee commitment are significant enablers of TQM implementation in the airline industry. However, the aforementioned published research studies incorporated a variety of services and hence a hotel-specific coverage appears to be desirable. Another study is focused on the investigation of the link between TQM practices and service quality, within the context of Malaysia's small service organizations (Ooi *et al.*, 2011). In order to identify the main TQM factors, this study was based on the theoretical framework of the Malcolm Baldrige National Quality Award (MBNQA) model. Similarly, Lam *et al.* (2012), in their study on the Malaysian services industry, also used the MBNQA model criteria, namely, leadership, policy and strategy, customer focus, information and analysis, human resource focus and process management. Moreover, Sila and Ebrahimpour (2003) also based their study on the MBNQA criteria in US luxury hotels to analyze how these practices influence business performance. It revealed that leadership, guest and market focus, and information and analysis are the most important factors in implementing quality practices. On the other hand, Karimi *et al.* (2014) analyzed the nature and the strength of internal relationships between the Baldrige criteria (leadership, strategic planning, customer and market focus, human resource focus and process management, measurement, analysis and knowledge management), concluding that all six sub-categories contribute to making the whole model meaningful. The self-assessment models or awards (i.e. MBNQA, European Quality Award, The Deming Prize and Kanji Business Excellence) can provide a useful framework for operationalizing TQM (Smadi and Al-Khawaldeh, 2006).

Some surveys have also been conducted to explore the application of components of TQM in the hospitality industry. Montasser and Manhawy (2013) examined the relationship between TQM factors and a company's performance in the context of the five-star Egyptian hotels. They also extracted ten key TQM factors: leadership, customer focus, teamwork,

Table I.
Comparison of quality
management
constructs across
different studies

Voon <i>et al.</i> (2014)	Talib <i>et al.</i> (2013)	Soria-Garcia and Martinez-Lorente (2014)	Arasli (2012)	Singh and Sushil (2013)	Montasser and Manhaway (2013)	Psomas and Jaca (2016)
Total employee involvement	Employee involvement	Internal customer involvement	People make quality	Employee commitment		Employee quality mgt
Continuous improvement	Continuous improvement and innovation		Continuous improvement continuous improvement cycle prevention	Continuous improvement culture improved service quality		
Continuous training	Training and education	Training		Training and education	Training and education increased load factor Teamwork	Employee knowledge and education
Teamwork	Teamwork		Teamwork	Coordination and teamwork		
Empowerment	Employee encouragement			Empowerment of employees		
Top mgt commitment and support -democratic mgt style	Top mgt commitment	Educational center headship commitment and involvement	Leadership	Top mgt commitment	Leadership	Quality practices of top mgt
Customer satisfaction	Customer focus		Delight the customer internal customer satisfaction	Customer satisfaction	Customer focus	Customer focus
Culture	Quality culture	Quality culture			Organizational culture Supplier relationship mgt	
	Supplier mgt	Supplier involvement	Measurement mgt by fact			
	Information and analysis		All work is process	Process improvement	Process mgt	Process mgt
	Process mgt	Process mgt		Benchmarking	Benchmarking	
	Quality systems		People-based mgt	Communication	Benchmarking HRM practices	
	Benchmarking	Quality information and communication			communication	
	HR mgt	Product design/ educational service		Customer involvement		
	Strategic planning	External customer involvement				
	Communication					
	Product and service design					
Hospital Iran	Services India	Education Spain	Hotel Iran	On-time performance Airline India	Hotel Egypt	Services Spain

organizational culture, training and education, HRM practices, communication, supplier relationship management, process management and benchmarking. According to Claver-Cortés *et al.* (2008) managerial factors such as training, information and communication technologies, information systems and environmental management are also related to organizational performance. Arasli (2012) identified 13 critical business excellence success factors based on Kanji's quality model in three-, four-, and five-star hotels in Iran. CSFs in the hospitality industry were also proposed by Tari *et al.* (2010) and Al-Ababneh and Lockwood (2012). However, the above selected practices may be not suitable to be used in Greek hospitality service sector which has totally different cultural, political, economical and social environment. Politis *et al.* (2009) presented a business excellence model for the Greek hotel sector consisting of enablers (human resources management, strategic planning, resources, suppliers/partners, customer and market focus) and results criteria (customer results, people results, society results, financial results, operating results, suppliers/partners results).

From the aforementioned brief literature review, it can be supported that a common set of practices for the successful implementation of TQM has not yet been identified, as the number and the nature of the TQM factors vary depending on the organizational (Yong and Pheng, 2008) or national culture (Psychogios *et al.*, 2008; Yoo *et al.*, 2006), the sector of employment (Psychogios, 2010), etc. Thus, the TQM factors are not universally valid in all organizational contexts and situations, which means that it is difficult to reach a conclusion on which TQM practices should be adopted by an organization with specific characteristics or belonging to particular business sectors (Politis *et al.*, 2009). Motivated by this conclusion, as well as by the limited number of studies in the hotel industry, we aim to integrate the enablers of TQM specifically into the hotel industry.

Thus, the following research question is formulated and examined through this study:

RQ1. What is the underlying structure (latent factors) of the TQM practices implemented in the hotel industry?

Company performance

A large amount of literature is available on TQM performance, revealing various indicators (Table II). For example, Calvo-Mora *et al.* (2014) indicated that the effects of TQM are measured through three types of results: quality, operational and economic-financial. Mensah *et al.* (2012) also noted that the organizational performance mostly influenced by TQM can be broadly categorized into four main groups: financial and market performance, organizational effectiveness, customer satisfaction and employee satisfaction. Psomas and Jaca (2016) conducted research on 151 Spanish service firms and found four company

Table II.
Comparison of
company performance
constructs across
different studies

Calvo-Mora <i>et al.</i> (2014)	Mensah <i>et al.</i> (2012)	Psomas and Jaca (2016)	Karimi <i>et al.</i> (2014)
Quality		Product/service quality	Product and service outcomes
Operational		Operational	
Economic-financial	Financial and market performance	Financial performance	Financial and market outcomes
	Organizational effectiveness		Organizational effectiveness outcomes
	Customer satisfaction	Customer satisfaction	Customer-focused outcomes
	Employee satisfaction		Human resource outcomes
			Social responsibility outcomes
Spain	Turkey	Spain	Iran
Services	Services and manufacturing	Services	Manufacturing, services, etc.

performance factors: financial performance, operational performance, customer satisfaction and product/service quality. Kumar *et al.* (2009) also suggested that complete quality management programs tend to have a positive impact on the quality performance dimensions investigated (as measured by employee relations, operating procedures, customer satisfaction and financial results). Sharma and Gadenne (2010) based the quality performance measurement on subjective measures, including management perceptions of quality management program performance in terms of overall company performance, improvements to the competitive position of the company and whether the quality program has been a positive development for the company. Karimi *et al.* (2014) studied a criterion set of TQM outcomes in service companies, including product and service outcomes, customer-focused outcomes, financial and market outcomes, human resource outcomes, organizational effectiveness outcomes and social responsibility outcomes. Talib *et al.* (2013) also evaluated quality performance based on items dealing with product, processes and service quality, employee service quality, employee satisfaction, customer satisfaction and supplier performance. Politis *et al.* (2009) proposed that the excellent results of a hotel are connected with financial outcomes, operating performance, customers, employees, suppliers/partners and society. According to Claver-Cortés *et al.* (2008), the quality performance in the hotel industry should include both objective and perceptual measurement, since this industry commercializes intangible experiences.

Thus, the second research question is:

RQ2. What is the underlying structure (latent factors) of the performance outcomes from TQM implementation in the hotel industry?

The impact of TQM on service company performance

There have been various studies which have investigated the relationship between TQM practices and company performance in the manufacturing and services sector. Most of them support the view that TQM improves business performance both internally (higher productivity) and externally (customer satisfaction) and leads to market share increase and long-term profitability (Fening *et al.*, 2008; Brah *et al.*, 2000; Shenaway *et al.*, 2007; Arumugam *et al.*, 2008). However, there are some studies that support negative or non-significant relationships or correlations between TQM practices and performance measures (Rich, 2008; Miller *et al.*, 2009). Candido and Santos (2011) carried out an extensive literature review to identify the rates of TQM implementation failure. The discrepancy concerning the effects of TQM implementation may have to do with the upper management motivation and support for TQM implementation, or the effective implementation by lower management levels (Bhat and Rajashekhar, 2009; Mosadeghrad, 2014) or the absence of a TQM implementation plan (Montasser and Manhawy, 2013). Fuentes *et al.* (2006) pointed out that the level of TQM implementation is related to the highest level of performance.

In the field of service management, the relationship between TQM and organizational performance is extensively studied providing evidence that TQM implementation has substantial benefits for a company's performance. Yang (2006) examined the impact of TQM practices on company performance and found that all TQM practices significantly influence customer satisfaction. He also reported that TQM implementation enhances a company's image and improves employee satisfaction and quality awareness. Lam *et al.* (2012) also offered some evidence for a positive effect of TQM practices on market orientation and service quality in the Malaysian service industry. Baird *et al.* (2011) found that three TQM factors (supplier quality management, process management and quality data and reporting) contribute to achieving the operational performance goals. Hasan and Kerr (2003) studied the relationship between TQM and organizational performance in Australian service organizations and supported the view that it is mainly two TQM factors

such as the role of top management and customer satisfaction that lead to higher productivity and quality performance.

Prior researches in service sector and especially in hospitality industry have also confirmed that TQM-adopting firms achieve higher performance (Brah *et al.*, 2000; Kumar *et al.*, 2011; Sin *et al.*, 2005). Specifically, Claver-Cortés *et al.* (2008) supported that certain managerial factors such as training, ICT/IS, environmental management and performance may be enhanced when a three- to five-star hotel is more TQM committed. In addition, Sila and Ebrahimpour (2003) analyze the TQM practices (leadership, guest and market focus, and information and analysis, human resource focus, processes, strategic planning) of three luxury hotels highlighting that the general managers interviewed argued that these practices contributed positively to their hotel's business results. Another similarly study, in three-to-five-star Spanish hotels, identified that the commitment to quality and environmental practices influences hotel performance. Wang *et al.* (2012), studying a sample of 588 hotels, found that market orientation has a mediating effect between TQM practices and hotel performance. They were also supported that TQM-adopting hotels achieve improvements in customer focus, internal/external cooperation, leadership, continuous improvement, process management, employee training, empowerment and rewards. TQM practices have also impact on performance in terms of financial results, operating performance, customer satisfaction, employee satisfaction and product/service quality (Kumar *et al.*, 2009).

In the light of these inconsistent and contradictory results, there is a need for a deeper investigation of the relationship between TQM practices and performance, regarding its quantitative and qualitative perspective. Thus, the following research question is formulated:

RQ3. Does TQM, as expressed by its respective factors, influence hotel performance dimensions?

Methodology

Establishing the constructs

In order to answer the research questions, an empirical survey was carried out among Greek hotels. A questionnaire was used as the data collection method, the design of which was based on previously developed measurement instruments. Reviewing more than 25 empirical studies in service industry, the present study proposed five key CFs for the successful implementation of TQM, namely: employee quality mgt, quality practices of top mgt, strategic quality planning, employee knowledge and education, customer focus. The TQM scale is a 30-item measure which was based on the studies of Fotopoulos *et al.* (2009), Fotopoulos and Psomas (2009, 2010), Lam *et al.* (2012), Singh and Sushil (2013), Talib *et al.* (2013), Psomas *et al.* (2013), Voon *et al.* (2014), Calvo-Mora *et al.* (2014), Mosadeghrad (2014), Karimi *et al.* (2014), Delic *et al.* (2014) and Psomas and Jaca (2016). One sample of the instrument items is the following: "Employees participate in the decision-making process and in setting quality objectives."

Company performance was measured using subjective measures of performance that tap into top-and middle-level hotel-quality managers' perceptions of the effects of TQM factors on overall hotel performance. The theoretical framework describing the TQM results used in the present study follows the suggestion of Oakland (2011). Similarly, the studies of Fotopoulos and Psomas (2009, 2010) were based on the same theoretical basis including all possible results achieved through TQM implementation. The studies of Hasan and Kerr (2003), Prajogo (2005), Kumar *et al.* (2009), Talib *et al.* (2013), Karimi *et al.* (2014) and Psomas and Jaca (2016) were used as the basis for drawing the measured variables of service company performance from TQM implementation. More specifically, the performance outcomes scale consists of 16 items referring to financial performance, customer-focused

performance and service quality performance. A sample item is: "Customer satisfaction from after sales services."

The scales were slightly modified for the best thematic fit, based on the recommendations of academics and experts in the specific field. All the instruments were translated into the Greek language following the Bracken and Barona (1991) guidelines. A pilot survey was conducted to smooth questionnaire procedures, preventing subjects from missing questions and reducing the probability of misunderstanding. Specifically, 15 hotel managers completed the pilot questionnaire and indicated any ambiguity or other difficulty they experienced in responding to the questions, as well as offering suggestions. Based on this feedback, some questions were eliminated, others were modified, and additional items were developed. The items in these instruments took the form of a seven-point psychometric Likert scale (anchored on 1 = "strongly disagree" through 7 = "strongly agree"). The self-administrated questionnaire also includes a series of questions related to the company profile as well as to the demographic characteristics of the respondents such as gender, age, marital status, etc.

Sampling process

The database of ICAP (the largest business information and consulting firm in Greece) was used for choosing the hotels that would participate in the research study. Based on a random selection, 800 hotels operating all over Greece were selected to participate in the present study. An initial e-mail was sent to all these hotels, inviting them to participate in the research study, explaining the purpose of the study and attaching the final version of the questionnaire. It was requested that the questionnaire be answered by the company representative in charge of quality management. Participants were assured of total confidentiality and anonymity. Follow-up reminder e-mails were sent after the initial e-mailing to increase the response rate. A sample of 166 questionnaires was collected, of which 13 were excluded because they were ineligible; they provided answers that were uniformly positive or negative (skewed responses), or returned blank or with incomplete answers. Hence, the total usable sample for analysis consists of 153 questionnaires – a response rate of 19.12 percent.

The sample of the responding hotels consists of small and medium-sized hotels, employing fewer than 50 employees. Most of the participating hotels have been certified according to ISO 9001 or ISO 22000. These certifications have been developed as a consistent pair of TQM and constitute the first step to advance quality.

The research questions were examined based on the responses of top-and middle-level hotel managers in charge of quality management. The quality managers have postgraduate studies, while 79.2 percent have more than 20 years' experience in the services sector.

Comparing the early and late responses, it was confirmed that non-response bias is not a cause for concern in this study (Kim *et al.*, 2012). Furthermore, since the questionnaire was completed by a single respondent (hotel-manager in charge of quality management), the common method variance was checked by applying the single-factor test (Martinez-Costa and Martinez-Lorente, 2008). This method produced poor results, confirming that common method variance is not a substantive problem. Finally, one-way analyses of variance carried out, showed that there are no significant differences among responding hotels.

Data analysis

Prior to feeding the data to factor analysis, it was confirmed that the assumptions of normality (investigated through graphical means such as histograms and normal probability plots as well as formal tests such as Shapiro-Wilks and Kolmogorov-Smirnov), linearity (investigated via graphical means including scatter plots, residual plots and partial regression plots) and homoscedasticity (investigated mainly via residual plots) were not violated. Having confirmed that the assumptions were not violated, exploratory factor analyses (EFA) were applied for the two instruments (describing TQM practices and

company performance). EFA was employed using the principal component factor extraction method with the orthogonal varimax rotation method (Gunday *et al.*, 2011).

Having as a dependent variable each of the three performance dimensions revealed, an equal number of multiple linear regression analyses were conducted in order to test the third research question of this study. Based on the sum of the respective measured items, summated scales were calculated for each independent and dependent variable (latent factors) of the regression analyses. Using the standardized and studentized residuals, the assumptions required for each regression analysis were tested and were not violated. Finally, the multi-collinearity among the independent variables of each regression analysis was checked and not confirmed.

Cronbach's α coefficient, which is the most common method for reliability analysis, was also calculated. The measurement of the concepts was based on previously developed instruments, so that content validity was assured. The analysis also verified that the factor loadings of the items exceeded the 0.40 threshold on its parent factor with low cross-loading, which shows that the measurement instruments reached convergent validity. Examining the discriminant validity of the extracted factors, it was found that the square root of the average variance extracted of each factor was greater than the highest correlation coefficient between the factor of interest and the remaining factors. This demonstrated discriminant validity between the extracted latent factors.

Results

Testing factor structure

As displayed in Table III, factor analysis of TQM practices revealed five factors. The factors explained 68.50 percent of the total variance, a rather satisfactory result in the context of social science research (Hair *et al.*, 2010). Variables with factor loadings less than 0.40 were ignored for the rest of the analysis; this effectively resulted in excluding four questions. Loadings of ± 0.45 are considered statistically significant for sample sizes of around 150 as in the present research study (Hair *et al.*, 2010). None of the factors had eigenvalues less than one (Kaiser criterion). In addition, the data for factor analysis were tested using the Kaiser-Meyer-Olkin index (sampling adequacy equal to 0.918) and the Bartlett test of sphericity (which rendered highly significant results; $p = 0.000$), both of which were considered satisfactory. The test for reliability of the factors and the instrument provided Cronbach's α coefficients that exceeded the recommended level of 0.70 and rather strong item-to-total correlations. More specifically, the Cronbach's α value of the instrument was equal to 0.95, suggesting that the TQM construct had high internal consistency (Oliveira and Roth, 2012). The extracted latent factors are explained using the measured variable loadings and can be labeled as follows: employee quality management, quality practices of top management, strategic quality planning, employee knowledge and education and customer focus. These factors are in line with the results presented in Table I and highlight the importance of training, leadership and customer satisfaction.

The factor analysis of the company performance instrument proved a very good fit that revealed three factors explaining 69.7 percent of the total variance after the deletion of two items due to its multi-factor loading (Table IV). The Kaiser-Meyer-Olkin statistic was 0.831. The Bartlett test of sphericity also provided satisfactory results. The Cronbach's α coefficient of the performance dimensions and the instrument were above 0.7, exceeding the minimum threshold level. The extracted latent factors are explained using the measured variable loadings and can be labeled as follows: financial performance, customer focused performance and service quality performance.

Regression analysis

The purpose of the third research question is to analyze how the independent variables (TQM factors) are related to the dependent variables (hotel performance outcomes). The multiple linear regression analysis would be appropriate to analyze the combined

Kaiser-Meyer-Olkin = 0.918 Items	Factor loadings				
	Employee quality mgt	Quality practices of top mgt	Strategic quality planning	Employee knowledge and education	Customer focus
Employees participate in the decision-making process and in setting quality objectives	0.820				
Employees provide services based on customer needs	0.804				
Employee performance compared with quality goals	0.782				
Employees are evaluated	0.607				
Employees are motivated to improve their performance	0.567				
Top management sets the quality issues on the agenda of the managers' meetings		0.783			
Top management supports the quality improvement efforts by providing resources		0.765			
Top management gives priority to process and product/service quality		0.681			
Top management gives the authority to employees to manage quality problems		0.666			
Employees participate in meetings concerning quality issues		0.455			
The quality policy and objectives are communicated throughout the company			0.820		
The quality policy is taken into consideration in strategic planning			0.680		
The company sets quality objectives for managers and employees			0.673		
The quality objectives are being set on customer needs and requirements			0.645		
Data are collected from employees regarding their satisfaction and suggestions for improvements			0.539		
The company applies statistical control processes			0.531		
Educational programs are evaluated				0.826	
Educational subjects are absorbed				0.791	
The company identifies areas from employee improvements				0.726	
The employees determine and evaluate the critical processes				0.573	
The employees are educated in quality management and problem solving techniques				0.511	
Customers' needs, requirements, desires and expectations are recorded and analyzed					0.738
The points/places where time is lost are detected to minimize customer dissatisfaction					0.701
Customer complaints, satisfaction level and proposals for quality improvement are selected					0.691
The processes and the services provided to customers are studied and improved					0.645
Quality data with regard to customers is taken into consideration by managers in the planning and control process					0.607
Eigenvalue	11.20	1.96	1.71	1.24	1.12
Cumulative variance %	14.955	13.723	13.661	13.604	12.548
Cronbach's α	0.872	0.856	0.860	0.875	0.874

Table III.
Exploratory factor
analysis of the TQM
practices in hotels

effect of predictor variables (independent) on dependent variables. The results of regressions are given in Table V.

According to the results of the first regression analysis, financial performance (p -value = 0.00 and $R^2 = 0.281$) is affected by four out of the five TQM factors extracted,

Table IV.
Exploratory factor
analysis of company
performance

Kaiser-Meyer-Olkin = 0.831 Measured variables	Factor loadings		
	Financial performance	Customer-focused performance	Service quality performance
The company's net profit	0.910		
The company's increase in sales	0.873		
The company's financial indexes	0.853		
The company's cash flow from operations	0.843		
The company's penetration/access in domestic and foreign markets	0.765		
The company's profitability	0.633		
Customer complains		0.788	
Customer retention and loyalty		0.742	
Customer satisfaction from after-sales services		0.715	
Employee – customer ratio		0.711	
Providing services on time			0.866
Employee – customer relationship			0.57
Services safety			0.791
Number of evaluable employees			0.591
Eigenvalue	6.92	3.97	1.06
Cumulative variance %	28.934	21.535	19.235
Cronbach's α	0.914	0.845	0.809

Dependent	Standardized coefficients β	<i>t</i>	Sig.
<i>Financial performance</i>			
Employee quality management	0.361	5.245	0.000
Quality practices of top management	0.225	3.272	0.001
Strategic quality planning	0.015	0.225	0.822
Employee knowledge and education	0.265	3.846	0.000
Customer focus	0.231	3.354	0.001
$R^2 = 0.281, F\text{-ration} = 12.861$			
<i>Service quality performance</i>			
Employee quality management	0.246	4.560	0.000
Quality practices of top management	0.228	4.222	0.000
Strategic quality planning	0.372	6.899	0.000
Employee knowledge and education	0.319	5.911	0.000
Customer focus	0.470	8.708	0.000
$R^2 = 0.558, F\text{-ration} = 39.397$			
<i>Customer focused performance</i>			
Employee quality management	0.190	2.712	0.007
Quality practices of top management	0.125	1.787	0.076
Strategic quality planning	0.366	5.218	0.000
Employee knowledge and education	0.189	2.696	0.008
Customer focus	0.231	3.297	0.001
$R^2 = 0.251, F\text{-ration} = 11.183$			

Table V.
Regression results

namely, employee quality management ($p = 0.000$, standardized β coefficient = 0.361), quality practices of top management ($p = 0.001$, standardized β coefficient = 0.225), employee knowledge and education ($p = 0.000$, standardized β coefficient = 0.265), and customer focus ($p = 0.001$, standardized β coefficient = 0.231).

Investigating the impact of the five TQM factors on service quality performance, the findings show (p -value = 0.00 and $R^2 = 0.557$) the statistical significant impact of the following latent

factors: employee quality management ($p = 0.000$, standardized β coefficient = 0.246), quality practices of top management ($p = 0.000$, standardized β coefficient = 0.228), strategic quality planning ($p = 0.000$, standardized β coefficient = 0.372), employee knowledge and education ($p = 0.000$, standardized β coefficient = 0.319) and customer focus ($p = 0.000$, standardized β coefficient = 0.470).

The third regression analysis examines the impact of the five TQM factors on customer focused performance. According to the findings, customer focused performance is significantly affected by employee quality management ($p = 0.007$, standardized β coefficient = 0.190), strategic quality planning ($p = 0.000$, standardized β coefficient = 0.366), employee knowledge and education ($p = 0.008$, standardized β coefficient = 0.189) and customer focus ($p = 0.001$, standardized β coefficient = 0.231).

Finally, the fourth regression model examines the impact of the five TQM factors and the three performance dimensions on financial performance. This model shows that (p -value = 0.00 and $R^2 = 0.379$) financial performance is significantly affected by all the independent variables.

Discussion

The purpose of this study is to enrich the existing literature by determining the underlying structure (latent factors) of TQM practices and company performance outcomes as well as the impact of the TQM factors extracted on the performance of Greek hotels. The research questions were examined using a sample of 153 top-and middle-level hotel-quality managers. The present study focuses on a homogeneous group of the hotel population, which includes hotels with common characteristics (stars, number of employees, location) selected via a systematic random scheme. Most of the participating hotels have been certified according to ISO 9001 or ISO 22000, showing their commitment to quality practices. To conduct the analysis, two measurement models were formulated. The first model includes the TQM practices, while the second contains the performance outcomes. EFA, coupled with multiple linear regression analyses, were used to examine the extent to which elements of TQM influence hotel performance.

The paper focuses, first, on the identification of the TQM factors in a particular services sector. Implementing TQM philosophy in companies involves specifying its key elements or factors. Thus, an extensive literature review on TQM has examined what constitutes TQM and what the key critical factors for its successful implementation are (Table I). Although a large amount of literature is available on TQM enablers, only a few empirical works have been conducted to understand these enablers in the hospitality industry. The TQM factors revealed by the present empirical research in the hotel industry are the quality practices of top management, strategic quality planning, employee quality management, customer focus and employee knowledge and education. These TQM factors are almost the same as those revealed by previous researchers studying the Greek business environment (manufacturing and service) (Fotopoulos and Psomas, 2010; Psomas and Fotopoulos, 2010). Three of the five factors (quality practices of top management, customer focus and employee knowledge and education) are common to all the studies, concerning services that are presented in Table I. Four out of the five factors concern the human aspect of the TQM philosophy, revealing three main players: top management team, employees and customers. These findings are in line with those of previous empirical research studies. More specifically, Calvo-Mora *et al.* (2014) supported the view that for an organization to be capable of improving key business results, it is necessary to orient its leadership and management of human resources toward a culture of quality, learning and continuous improvement. Similarly, Zarraga-Rodriguez and Alvarez (2013) interviewed Basque Country Quality award-winners and identified elements based on the human aspect of management (leadership, involvement, teamwork, communication and consensus) as being the values of the companies' quality culture that

lead to the efficient management of information. In the same vein, Ali *et al.* (2010) supported the view that quality team working, customer-focus orientation and visionary leadership are the three most critical factors in implementing successful TQM in the Malaysian higher education context. The commitment of top management and employees determine and affect strategic planning, supplier management, information and analysis, continuous improvement, process management and education and development. Similarly, customers participating with their suggestions and complaints in the service production process, contribute to a better service-quality perception. The increase in the quality of products and services combined with competitive prices of a tourist package should promote the hotel as a value-add destination.

On the other hand, the performance dimensions revealed through the present study are summarized as: financial performance, customer focused performance and service quality performance. Comparing the results of the present study carried out in the hospitality industry with the results of similar studies in the services sector (Table II), some noteworthy points are revealed. The performance dimensions extracted in the study of Psomas and Jaca (2016) are almost the same as those extracted in the present study, except for the operational performance dimension. More specifically, the present approach focuses on meeting a company's financial objectives as well as customer needs and expectations. In addition, the importance of quality for a company's performance is widely accepted in business literature. Both the internal and the external business environment are reflected in the performance dimensions extracted in the present study. Although many service companies claimed substantial benefits from TQM implementation in terms of operating performance (Yang, 2006; Sila, 2007; Kumar *et al.*, 2009), this factor is missing from the categories of the TQM benefits concerning the internal environment of the sample hotels. Thus, it can be said that although operational performance is not restricted to just the manufacturing sector, it may be more suitable for this sector than for the hotel service sub-sector. In line with the present study, Martinez-Costa and Jimenez-Jimenez (2009), studying Spanish organizations including service companies, do not mention performance outcomes from TQM concerning employees and organizational effectiveness. Similarly, Santos-Vijande and Alvarez-Gonzalez (2009), do not mention society benefits, but consider employees as recipients of benefits from TQM implementation.

The results also confirmed that most of the TQM elements are antecedents of hotel business performance. It is worth noting that financial and customer focused performance are affected by four out of the five TQM factors revealed. More specifically, it is evident that employee quality management, quality practices of top management, employee knowledge and education and customer focus play an important role in improving the financial performance of hotels. For the improvement of customer focused performance the important variables are employee quality management, strategic quality planning, employee knowledge and education and customer focus. The five factors which constitute the pillars of the TQM model the sample companies adopt, contribute to the achievement of significant service quality benefits. These relationships show that some TQM factors are more significant than others in improving a performance dimension of a hotel. The importance of TQM factors in business performance dimensions have been noticed by many researchers. Even though different studies concentrate on different TQM factors, they show their correlation with quality performance. Heskett *et al.* (1994) proposed that customer satisfaction is largely influenced by the value of the services provided to customers and created by satisfied, loyal and productive employees. Davis (2006) also noted that any company can realize considerable financial benefits by implementing initiatives which strengthen the links between employees and customers. The importance of linking leadership, employees and customers in improving business results is also highlighted by Cheung and To (2010). They confirmed that management commitment to service quality

does not produce positive organizational outcomes, unless it is linked with effective employee involvement in serving customers. Alidrisi and Mohamed (2012) stated that the soft elements of TQM, concerning the human aspect, affect organizational performance. Talib *et al.* (2013) showed that quality culture is perceived as the dominant TQM factor influencing quality performance. Factors such as quality systems, training and education, teamwork, and benchmarking also show a positive relationship with quality performance.

Practical implications and suggestions for future research

The identification of TQM factors and performance outcomes are of particular interest to those engaged in hospitality services because of the difference of this sector from the other services sectors. The TQM factors and the dimensions of performance outcomes expand the literature on TQM in the hotel industry. In the hospitality industry, employees interact in a very personal manner with customers, while customers often use some effective criteria to evaluate service and mainly visit a hotel for enjoyment purposes. Thus, they evaluate it in terms of how much pleasure they receive. This paper provides reliable and valid frameworks comprising TQM practices and performance outcomes that can be used by the hotel industry.

Arasli (2002) pointed out that hotels need some new, cheap, simple and logical TQM approaches. This research summarized quality practices that could aid the managers to enhance their hotel performance. The above findings could enable hotel managers to better understand the importance of quality as well as they provide an applicable and suitable model for self-evaluation and benchmarking among chain hotels. Thus, hotels using the proposed instruments concerning TQM factors and company performance should conduct systematic surveys on a regular and consistent basis. In this way, the hotel can self-evaluate its TQM implementation level and company performance at low cost and in so doing, the managers will receive valid information about areas that need improvement. Managers of hotels should also take into consideration the fact that the proposed multi-dimensional structure of TQM should be implemented holistically and systemically rather than on a piecemeal basis. Arasli (2012, p. 576) also pointed out that “success not only depends on an arrangement of holistic, highlighting, and interrelated factors but also on the impact that any change in one of these components will have on the overall system.”

In this study, TQM adoption in the hotel industry is decoded by determining specific TQM factors. In doing so, TQM becomes more easily understood and able to be implemented by hotels. The specific categories of TQM practices revealed in the present study help hotel managers concentrate their efforts on specific quality initiatives in order to enhance the benefits derived from TQM implementation. Moreover, implementing TQM through a structured approach, can help a hotel approach business excellence, apply for quality management awards and finally derive significant benefits with regard to the internal and external business environment. Therefore, hotel managers/owners may better address their efforts by choosing whether to invest in company refurbishing or better train their personnel to maximize hotel performance. They should focus on providing those services that satisfy the accommodation needs of every visitor and motivate new ones. Hotel managers should establish standards of service quality offered across the hotel grades to affect the formation of realistic expectations by the customers (Lee *et al.*, 2004).

As it was already mentioned, some previous researchers reported that there was a positive impact of TQM implementation on hotel performance (Tari *et al.*, 2009, 2010; Wang *et al.*, 2012). It was supported that hotels that adopt TQM practices are more likely to survive in a long term due to their strong influence on the dimensions of profitability, customer loyalty and satisfaction. The positive relationship between TQM practices and performance were also supported by the findings of this empirical study. However, hotel managers are still unfamiliar with TQM approaches (Arasli, 2002) or they have negative attitudes

throughout to the ISO 9000 certification (Mak, 2011). Lazari and Kanellopoulos (2007) referring to the Greek hotel industry, pointed out that TQM is largely not applied because executives have not contended with it or consider it unnecessary and still follow traditional management techniques which is lacking any sense of quality. Probably, hotel managers consider quality as an extra cost, which is unnecessary, and that belief leads to a very low level of implementation of quality management practices (Al-Ababneh and Lockwood, 2012). This is in accordance with the belief that one of the most important barriers of TQM implementation in the hotels is management commitment to quality (Breiter and Bloomquist, 1998). The current research ambition is to enhance hotel managers to follow TQM philosophy and increase customer loyalty, satisfaction and eventually increase the revenue of their hospitality business. In many countries tourism and hospitality firms are the backbone of the national economy and one of the basic growth pillars, Greece is included, and they play important role as indicators of countrywide development and recovery. Thus in terms of national economy, it is believed that TQM will have a positive impact in the areas of unemployment, inflows of foreign currency and increase of GDP since the satisfied international customers will prefer to visit TQM-committed hotels and resorts enjoying high-quality services.

As with any research, this study has certain limitations that should be taken into consideration when interpreting the results. First and foremost, the study was restricted to one sector (hotels) only, so a verification of the findings in another services sector is desirable. The measurement instruments of TQM elements and company performance were based on previously developed scales. The adoption of these scales on another sample is worthwhile for future inquiry. In addition, the fact that the sample was selected from one country (Greece) limits the generalizability of the findings in the hotel industry. In order to delimit this study's characteristics, future research studies should be carried out worldwide. Another possible limitation is the fact that the data does not constitute objective but subjective business evidence collected from the quality managers. Thus, the findings were consistent with research in perceptual distortion and self-rating bias. Additionally, the small sample size of the participating hotels limits the possibility of applying more advanced statistical techniques as the preferred number of observations should be ten times as many as the items of the questionnaire (Hair *et al.*, 2010). The structural relationship between the constructs can be determined using the structural equation model, which is superior to regression analysis. Finally an interesting perspective for future research would be the link between TQM, performance and hotel rating systems.

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