

IMPLEMENTING TOTAL QUALITY MANAGEMENT IN THE HOTEL INDUSTRY

Mukhles Al-Ababneh
College of Archaeology, Tourism and Hotel Management, Al - Hussein Bin Talal University
Ma'an, Jordan
e-mail: mukhles.ababneh@gmail.com

and
Andrew Lockwood
School of Hospitality and Tourism Management, University of Surrey
Guildford, UK
e-mail: a.lockwood@surrey.ac.uk

ABSTRACT

This study sets out to explore the Critical Success Factors (CSFs) necessary for TQM implementation in hotels. It also aims to classify participating hotels into groups based on their TQM adoption by using cluster analysis. Using a survey methodology, 170 questionnaires were sent to managers in 17 four- and five-star resort hotels in Jordan in 2010 and 104 usable questionnaires were returned. The findings revealed that TQM is existed and implemented in the hotel industry. The researchers then confirmed that four- and five-star resort hotels can be classified into two groups, namely, “high TQM adopters” and “low TQM adopters”.

Key Words: TQM, CSFs of TQM, Resort Hotels

INTRODUCTION

Organisations in challenging environments are forced to apply new management approaches, one of which is Total Quality Management (TQM), and therefore many service organisations, including hotels, have responded to these challenges by adopting TQM in order to achieve competitiveness and business excellence (Samson and Terziovski, 1999; Pavlic et al., 2004). Thus, Quality Management (QM) must become the way of life in the hospitality organisations to improve services (Motwani et al., 1996). In addition, hotels are under pressure to increase profitability in the challenging situation (Daghfous and Barkhi, 2009). The concept of TQM appeared during 1980s and 1990s, both in developed and developing countries (Pavlic et al., 2004). Organisations started to adopt TQM as a quality and productivity improvement programmes in the early 1980s after the success in Japanese organisations enhancing competitive edge (Motwani, 2001; Kaynak, 2003), and therefore TQM has become an essential management philosophy used for improving quality and productivity in organisations (Karia and Asaari, 2006). TQM rapidly became a top priority in many organisations due to the globalisation age and highly competitive environment forcing customers to search for better products and services (Thiagaragan et al., 2001).

Implementing TQM is an important process for improving organisational efficiency within businesses (Yusof and Aspinwall, 2000). TQM appears to have been a universal remedy for solving organisational problems and improving organisational performance (Joiner, 2007). All organisations, private and public, manufacturing and service, are implementing TQM or are planning to implement it (Ho et al., 1999). Despite the importance of TQM, the implementation of TQM is still a problematic practice in many organisations because they do not realise that the process of TQM implementation is a comprehensive organisational change (Hansson and Klefsjo, 2003). Thus, this study will investigate the CSFs for successful TQM implementation needed overcome the difficulties related to TQM implementation.

LITERATURE REVIEW

In the early 1920s, the origin of the TQM movement started when Shewhart introduced the concept of Statistical Process Control (SPC) to monitor quality in mass production manufacturing for the first time (Shewhart, 1931). This was followed by the application of Statistical Control (SC) methods at the Bell Telephone Company in 1926. Quality Control (QC) was started in Japan in 1949 when the Union of Japanese Scientists and Engineers (JUSE) invited a group of specialists to provide a programme for promoting quality control in Japanese organisations (Lakhe and Mohanty, 1994). In 1950, Deming introduced a comprehensive management system “Japanese-Style Management Model”. Feigenbaum, who worked with the Japanese like Deming and Juran, in 1961 introduced Total Quality Control (TQC), as the forerunner of TQM as known today (Omachonu and Ross, 1995; Martinez-Lorente et al., 1998). However, many of the dimensions that have formed TQM were developed earlier during the 1950s to 1970s (Martinez-Lorente et al., 1998; Lau and Anderson, 1998). Later, in 1985, the TQM term appeared for the first time when the Naval Air Systems Command named

its Japanese-style management approach as TQM. The first study identifying the CSFs of quality management emerged by Saraph et al. (1989).

Today, there are many definitions of TQM have been given by quality researchers. It is difficult to introduce a single universal definition of TQM (Lau and Anderson, 1998). However, all quality researchers provide their own definitions, and therefore there is no universal agreement about the definition of TQM (Martinez-Lorente et al., 1998; Sila and Ebrahimpour, 2003; Boon et al., 2007). Consequently, TQM means different things to different people (Eriksson and Hansson, 2003). For example, Berry (1991) defined TQM as a total corporate focus on meeting and exceeding customers' expectations and significantly reducing costs resulting from poor quality by adopting a new management system and corporate culture. Kanji (2002) defined TQM as a management philosophy that fosters an organisational culture committed to customer satisfaction through continuous improvement. A similar definition was provided by Antony et al. (2002: p.551), who regarded TQM as "an integrative management philosophy aimed at continuously improving the performance of products, processes and services to achieve and exceed customer expectations". Based on reviewing the previous definitions of TQM, this study can define TQM as "*A management philosophy which involves a set of principles, techniques, and tools that are used for continuously improving the quality of processes, products, services and people by involving all employees to achieve superior customer satisfaction*". Generally, most of the definitions of TQM are focused on TQM as a philosophy of management that fosters an organisational culture committed to customer satisfaction throughout continuous improvement.

The CSFs of TQM can be described as the best practices of TQM implementation (Thiagarajan and Zairi, 1998; Sila, 2005). Specifically, the TQM implementation process stands a good chance of ending in failure if this CSF is not included, and the more critical a quality factor is, the higher the chances of failure if it is not part of TQM (Thiagarajan and Zairi, 1998: p.291). Successful TQM implementation is often linked with the CSFs which are responsible for achieving business excellence (Talib and Rahman, 2010). Thus, it is important to understand TQM practices and its CSFs in order to determine the level of resources and commitment needed for achieving successful implementation (Zairi and Youssef, 1995). The literature identified that the CSFs of TQM range between four and twelve factors (Karuppusami and Gandhinathan, 2006). Saraph et al.'s (1989) empirical study was the first systematic attempt to classify and organise the important critical factors of quality management practice based on literature into eight critical factors, namely, the role of top management leadership, the role of quality department, training, product/service design, supplier quality management, process management, quality data and reporting, and employee relations. This study considers the CSFs as necessary practices for successful TQM implementation in order to achieve the benefits of TQM in the hotel industry. Thus, reviewing the main empirical studies in CSFs of TQM, the researchers found that there are 12 key CSFs for the successful implementation of TQM across more than 35 empirical studies conducted in both manufacturing and service organisations, namely: top management commitment (F1), leadership support (F2), the role of quality department (F3), supplier quality management (F4), quality data and reporting (F5), product/service design (F6), employee management (F7), process management (F8), education and training (F9), continuous improvement (F10), customer focus (F11), and quality planning (F12). As a result, the specific CSFs of TQM are not completely agreed among researchers.

In the hotel industry, TQM was first used when Quality Assurance (QA) was introduced in the 1980s (Hall, 1990). Specifically, the implementation of quality management in the hospitality industry started from 1982 when the American hospitality industry implemented QA Systems and achieved excellence outcomes (Walker and Salameh, 1990). Quality has a great importance in the hospitality industry (Saunders and Graham, 1992). However, few hotels have heard about TQM (Walker and Salameh, 1990), and therefore there is still a lack of literature about TQM in hotels. In the last decade, many hospitality organisations have shown more interest in the concept of TQM. As expectations of customers and potential customers have escalated, hospitality organisations have found the implementation of quality to be an important competitive component in the global market (Cannon, 2002).

There are a limited number of empirically researched studies of TQM in the hotel industry. For example, Breiter and Kline (1995) identified that leadership, customer focus, and vision and values as CSFs of TQM in the hotel industry, followed by training, communications, empowerment, alignment of organisational systems, and implementation. While, Sila and Ebrahimpour (2003) examined the Malcolm Baldrige National Quality Award (MBNQA) to investigate TQM practices in US luxury hotels. They found that a major barrier to successful TQM implementation was failure of top management to support a TQM programme. They also revealed that leadership and customer focus are the two main factors most often integrated by hotels into their TQM programmes. Recently, Shahbazipour (2007) showed the importance of CSFs of TQM in hotels. The study supported the theory that the CSFs of TQM implementation may have different importance to performance in different hotels, that there may be a different level of relationship between each factor and

performance, and the level of CSFs is different from one hotel to another. Mohsen (2009) identified the CSFs relating to the introduction of a TQM culture in five-star hotels, namely staff empowerment, teams, staff suggestion and reward schemes, training, leadership, communication and customer focus. Overall, TQM has become popular in the hospitality industry, and therefore TQM has become increasingly important for management in hotels due to high global competition. However, hotels can be classified into groups based on the level of TQM implementation. For example, Tari et al. (2010) classified hotels into three clusters based on commitment to QM, namely, QM proactive hotels, QM committed hotels, and QM reactive hotels. They also argued that QM proactive hotels had a higher star rating, and were more likely to be chain-affiliated, have more rooms and facilities, and more resources. Although TQM has become more important in the hotel industry, and the implementation of TQM has had positive effects on hotel performance. The researchers concluded that few studies have been conducted to investigate the implementation of TQM in the hotel industry. Accordingly, more research is needed to fill this gap in the literature on the hotel industry.

RESEARCH METHODOLOGY

TQM measurement was developed consisted of 12 scales based on the previous instruments (i.e. Saraph et al., 1989; Flynn et al., 1994; Ahire et al., 1996; Zhang et al., 2000; Claver et al., 2003) to measure managers perceptions of the extent of TQM implementation. The researchers adapted 71 items for 12 TQM factors from the previous studies. These scales used a six-point Likert-type scale anchored at (1) not at all and (6) to a very large extent. The respondents will be asked about their perceptions towards the implementation of CSFs of TQM in their current hotels by investigating their agreement toward TQM implementation.

This study used a cross-sectional survey methodology, and the unit of sample was at the managerial level. The empirical data collection for the study was conducted in four- and five-star resort hotels in Jordan, which may have implemented quality management practices due to their offering high levels of service to meet customers' expectations. The sample was all managers among 17 resort hotels, with 170 questionnaires being sent to these managers. A total of 107 questionnaires were returned, a response rate of 62.3%. However, three questionnaires were invalid due to incomplete data and the researchers obtained 104 usable responses.

STUDY RESULTS

In this study, the TQM instrument consisted of 71 items covering 12 scales. Using SPSS, the reliability and validity of TQM instrument were confirmed in this study. The reliability alpha coefficients for the TQM factors were generally high ranging from .805 to .958, but some items in the TQM scales were eliminated as necessary to increase the reliability for each scale. As a result, the high Cronbach's alpha coefficients achieved support the view that the study's scales are reliable. In addition, the study scales conformed to the two types of validity: content validity, and construct validity.

According to Hair et al. (2010), factor loadings greater than 0.30 are considered significant; loadings of 0.40 are considered more important; if the loadings are 0.50 or greater, they are considered very significant. In this study, a factor loading of 0.40 was used as the cut-off point. An Exploratory Factor Analysis (EFA) using SPSS version 18 was performed for each scale separately; all items in the scales were used in the EFA before eliminating any item for maximizing reliability. It was clear from the results that all of the items had high factor loadings greater than 0.40 ranging from 0.715 to 0.948. Additionally, the results revealed that each of the 12 factors obtained an Eigenvalue greater than 1. As a result, the factor analysis showed that the items in 12 scales of TQM formed a single factor. On the other hand, Confirmatory Factor Analysis (CFA) with AMOS 18 using maximum likelihood procedure was undertaken to assess the overall fit of the model on each scale, using the items remaining after excluding those items eliminated for maximizing reliability. The results of CFA indicated that the CFI, IFI, NFI, and TLI of the 12 scales exceeded the 0.90 criterion as suggested by Hoyle and Panter (1995), and RMSEA values below .05 for most scales (Byrne, 2001), and X^2/df ranged from 0.26 to 3.363 fell within a range of acceptable values (2 to 5) as suggested by Bollen (1989), All of the factor loadings for constructs ranged from 0.662 to 0.949 were very high significant ($p < .001$). Consequently, the goodness-of-fit indexes were excellent that showed good fit for the 12 scales.

The main purpose of this study is classifying the sampled hotels based on their TQM score which representing the level of TQM implementation into different groups. The overall score of TQM was measured by accounting the scores of 12 CSFs. The results indicated that there are huge differences between hotels in terms of overall TQM score ranging from 1.82 to 5.69, these differences influence the average TQM score for all hotels. Thus, it was necessary to run cluster analysis in order to classify hotels into group. K-means cluster analysis was conducted which indicated that there are two main clusters based on the 12 CSFs of TQM and overall TQM. In order to investigate the previous two clusters as shown in Table 1, a two-step cluster analysis was conducted to determine hotels in each cluster based on the 12 CSFs of TQM and overall TQM, the results

of cluster analysis confirmed two groups of hotels based on their TQM implementation, and the sampled hotels loaded clearly in those clusters as shown in Table 1.

Table 1: Results of Cluster Analysis

Cluster	Hotel Code	N. of Hotels	% of Total Hotels	TQM	
				Mean	Std. Deviation
1	6, 8, 10, 14, 16	5	29.4%	2.11	.413
2	1, 2, 3, 4, 5, 7, 9, 11,12, 13, 15, 17	12	70.6%	4.84	.679
Combined	All hotels	17	100%	4.19	1.33

As Table 1 showed that hotels can be classified into two groups, five out of 17 hotels were in the first cluster had low level of TQM implementation (mean =2.11) which was less than the midpoint (3.5) that indicated TQM are implemented at low level in this cluster of hotels. Whereas, the other 12 hotels were in the second cluster had high level of TQM implementation (mean =4.84) greater than the midpoint. The results explored that there are two groups of hotels, namely, (Cluster 1) “low TQM adopters” and (Cluster 2) “high TQM adopters”. Furthermore, t-test was conducted in order to distinguish between the two groups of TQM adopters, the comparative results of these two groups are shown in Table 2.

Table 2: T- test for Differences in the TQM Level by Hotel

Dimension	TQM level	N	Mean	Std. Deviation	Mean Difference	t	Sig. (2-tailed)
1. Top Management Commitment (F1)	High	79	4.86	0.82	2.97	16.42	.000
	Low	25	1.89	0.66			
2. Leadership Support (F2)	High	79	4.89	0.84	2.71	15.40	.000
	Low	25	2.18	0.45			
3. Quality Department (F3)	High	79	4.73	0.93	2.71	13.47	.000
	Low	25	2.02	0.67			
4. Supplier Relationship (F4)	High	79	4.64	0.82	2.32	13.21	.000
	Low	25	2.32	0.55			
5. Quality Data & Reporting (F5)	High	79	4.58	0.83	2.49	14.17	.000
	Low	25	2.09	0.51			
6. Product/Service Design (F6)	High	79	4.90	0.78	2.68	15.97	.000
	Low	25	2.22	0.56			
7. Employee Management (F7)	High	79	4.80	0.80	2.70	15.88	.000
	Low	25	2.10	0.48			
8. Process Management (F8)	High	79	4.76	0.78	2.61	15.72	.000
	Low	25	2.15	0.47			
9. Education & Training (F9)	High	79	4.85	0.78	2.70	15.96	.000
	Low	25	2.15	0.58			
10. Continuous Improvement (F10)	High	79	4.89	0.80	2.87	16.66	.000
	Low	25	2.02	0.57			
11. Customer Focus (F11)	High	79	5.15	0.81	3.09	17.74	.000
	Low	25	2.06	0.59			
12. Quality Planning (F12)	High	79	5.07	0.76	2.97	18.32	.000
	Low	25	2.10	0.51			
Overall TQM	Low	25	2.11	.41	2.73	19.01	.000
	High	79	4.84	.68			

As shown in Table 2, the results revealed that there are strong significant differences between two groups of hotels in terms to 12 CSFs of TQM, and overall TQM. Specifically, the mean scores for all variables in “low TQM adopters” group were less than then midpoint (3.5), whereas they were greater than the midpoint for “high TQM adopters” group. For instance, the highest difference between high and low TQM adopters at the factor level was regarding ‘customer focus’ (F11) with mean difference (3.09), this followed by two factors, are: ‘top management commitment’ (F1) and ‘quality planning’ (F12) (mean differences = 2.97), then ‘continuous improvement’ (F10) with mean difference (2.87). While, the lowest difference was in term to ‘supplier relationship’ (F4) with mean difference (2.32), followed by ‘quality data & reporting’ (F5) (mean differences = 2.97). Finally, overall TQM had a mean difference was 2.73.

The t-test results suggested that the “high TQM adopters” and “low TQM adopters” were significantly different in TQM level. More specifically, “high TQM adopters” had higher TQM implementation (mean= 4.84) which was significantly different from “low TQM adopters” who had lower TQM implementation (mean = 2.11) (t=19.01, P=.00). These findings were supported by Al-Khawaldeh (2001), who classified industrial organisations in Jordan into two groups based on their level of TQM implementation: low TQM organisations and high TQM organisations, while Kuei et al. (1997) suggested that the high quality-tendency groups are already in the mature stage of quality movement, medium quality-tendency groups are still in the transforming stage, while low quality-tendency groups are still in the early stage of quality movement.

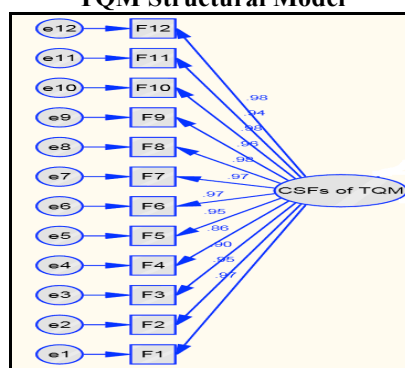
The study’s findings indicated that TQM practices as well as all CSFs of TQM are moderately implemented in Jordanian resort hotels as reported by managers. At the factor level, it was found that the highest

five mean scores were for customer focus, quality planning, product/service design, leadership support, continuous improvement, and education and training, while the lowest mean score was for quality data and reporting. The current findings suggested that hotels focused more on customer satisfaction, quality planning and product/service design through continuous improvement, and employee education and training, which are supported by leadership. This study also confirmed that both hard factors and soft factors exist in the service industry and more specifically in hotels. The above results were supported by Zhang et al. (2000), who found that the mean scores of 11 TQM factors in Chinese manufacturing organisations ranged from (3.57) for process control and improvement to (4.00) for customer focus. In contrast, Flynn et al. (1994) revealed that the mean scores of 11 TQM factors in plants were low ranged from (2.17) for customer interaction to (3.28) for quality improvement rewards.

In the hotel industry, Cheung (2006) measured the implementation of TQM in four-and five-star hotels through four factors, namely, top management commitment, continuous improvement, customer focus and employee involvement. She found that the mean score of aggregate TQM was (5.56), suggesting that TQM practices were implemented in the hotel industry. Similarly, another study was conducted by Claver-Cortes et al. (2008) who investigated TQM commitment among managers in three- to five-star hotels in Spain. They revealed that the hotels had a high degree of TQM commitment (mean=5.62), and those hotels were usually chain-affiliated since they own more resources to meet quality standards and to implement quality practices. These results supported and confirmed the findings of the current study, suggesting that TQM practices are highly implemented in the hotel industry. Additionally, the two groups of hotels showed different views of the relative importance of the CSFs of TQM implementation. The results revealed that the level of importance of CSFs for both groups was greater than the mid point (3.5), but the highest values were for high TQM adopters. T-tests showed a significant difference between the two groups of hotels related to the importance of each factor of TQM. For example, the most important factors for high TQM adopters were customer focus, education and training, continuous improvement, employee management, and top management commitment respectively, while for low TQM adopters were employee management, education and training, customer focus, continuous improvement, and process management respectively.

Structural Equation Modelling (SEM) was used to confirm the structure of TQM model. As shown in Figure 1, the TQM model is represented as a single latent construct composed of 12 variables. The results revealed that the GFI was 0.78, while the AGFI was 0.68, indicating an adequate fit of the TQM model consisting of 12 factors, and these results are similar to Tamimi's (1998) results that were obtained in the western context, his results found that the GFI was 0.75, and the AGFI was 0.71, which indicated an adequate fit of TQM model. The goodness-of-fit indexes were good. The results of this study confirmed that TQM model in the hotel industry.

Figure 1
TQM Structural Model



DISCUSSION

Compared to the other quality management instruments developed by Saraph et al. (1989), Flynn et al. (1994), Ahire et al. (1996), Zhang et al. (2000), and Claver et al. (2003), the TQM instrument presented in this paper has high reliability and validity for the hotel industry in general and for Jordanian resort hotels in particular. This study was the first to develop an instrument based on an extensive literature review for measuring TQM implementation in the Jordanian hotel industry. The instrument was empirically tested and validated using the data from the Jordanian hotel industry. The TQM instrument consisting of 12 TQM scales (59 items) was reliable and valid.

This study was able to confirm, regarding the different levels of TQM implementation among Jordanian resort hotels, that the majority of “high TQM adopters” were five-star international chain hotels, managed by management contract, while “low TQM adopters” were four- and five- star independent hotels, either managed by management contract or owner managed. This is because international chain hotels in Jordan follow specific quality standards through planning for quality, providing education and training for employees, allocating sufficient resources, introducing the latest quality programmes, improving quality continuously, and finally, implementing quality management practices at a high level, to meet customer’s needs and expectations. On the other hand, independent hotels in Jordan, unfortunately, still follow traditional management in managing their operations which is lacking any sense of quality and improvement, and they prefer to keep work going as it is without any improvement or change, ignoring customer’s needs and expectations. These hotels consider quality to be an extra cost, which is unnecessary for them to pursue, and that leads to a very low level of implementation of quality management practices. The current study suggested that TQM practices are strongly implemented in chain-affiliated hotels. These findings were supported by Claver-Cortes et al. (2008) who revealed that there was a high degree of TQM commitment in three- to five-star hotels in Spain, and those hotels were usually chain-affiliated and own more resources to meet quality standards and to implement quality practices.

This study provided strong evidence that the level of TQM implementation could be different among hotels. Thus, the instrument could be used directly in other studies for different populations. For example, managers can use the TQM instrument developed in this study to assess the level of TQM practices in their organisations and to identify problem areas that should be improved. While, researchers being able to use this instrument to develop quality management theory. Furthermore, a future study could be conducted to investigate the impact of TQM on hotels’ performance. However, this study must recognise several limitations: for example, data were collected about the level of TQM practices based on managers’ perceptions, where some respondents from the same hotel might have different perceptions, although a detailed cluster analysis did not reveal this to be significant. As 35 percent of the respondents were first-level managers, it is possible that this level of manager might not have evaluated correctly the current level of TQM practices.

CONCLUSIONS

A small number of studies have focused on investigating TQM in the hotel industry. The majority of the relevant literature, however, supports the view that TQM can be implemented in hotels. The results of this study highlight the importance of implementing TQM practices in the hotel industry by revealing the moderate level of TQM. Additionally, the current study has been able to classify resort hotels in Jordan into two groups, based on their level of adoption of TQM practices, namely, ‘low TQM adopters’ and ‘high TQM adopters’, with these groups having significantly different approaches to TQM.

REFERENCES

- Ahire, S. L. and Golhar, D. Y. (1996) “Quality management in large vs small firms”, *Journal of Small Business Management*, April, pp.1-13.
- Al-Khawaldeh, K. A. (2001) *Total quality management and productivity in industrial corporations in Jordan*. Unpublished PhD thesis. University of Western Sydney.
- Antony, J., Leung, K., Knowles, G. and Gosh, S. (2002) “Critical success factors of TQM implementation in Hong Kong industries”, *International Journal of Quality & Reliability Management*, 19(5), pp.551-566.
- Berry, T. H. (1991) *Managing the total quality transformation*. New York: McGraw-Hill.
- Bollen, K. A. (1989) *Structural equations with latent variables*. New York: Wiley.
- Boon, O. K., Arumugam, V., Safa, M. S. and Abu Bakar, N. (2007) “HRM and TQM: association with job involvement”, *Personnel Review*, 36(6), pp.939-962.
- Breiter, D. and Kline, S. F. (1995) “Benchmarking quality management in hotels”, *FIU Hospitality Review*, 13 (2), pp.45-52.
- Byrne, B. (2001) *Structural equation modeling with AMOS: basic concepts, applications and programming*. New Jersey: Lawrence Erlbaum Associates.
- Cannon, D. F. (2002) “Expanding paradigms in providing internal service”, *Managing Service Quality*, 12(2), pp.87-99.
- Cheung, C. (2006) *The impact of employees' behaviour and the implementation of total quality management on service quality: a case study in the hotel industry*. Unpublished PhD thesis. University of Strathclyde.
- Claver-Cortes, E., Pereira-Moliner, J., Tari, J. J. and Molina-Azorin, J. F. (2008) “TQM, managerial factors and performance in the Spanish hotel industry”, *Industrial Management & Data Systems*, 108(2), pp.228-244.
- Claver, E., Tari, J. J. and Molina, J. F. (2003) “Critical factors and results of quality management: an empirical study”, *Total Quality Management*, 14(1), pp.91-118.
- Daghfous, A. and Barkhi, R. (2009) “The strategic management of information technology in UAE hotels: an exploratory study of TQM, SCM and CRM implementations”, *Technovation*, 29, pp.588-595.
- Eriksson, H. and Hansson, J. (2003) “The impact of TQM on financial performance”, *Measuring Business Excellence*, 7(1), pp.36-50.
- Flynn, B. B., Schroeder, R. G. and Sakakibara, S. A (1994) “framework for quality management research and an associated measurement instrument”, *Journal of Operations Management*, 11(4), pp.339-366.

- Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010) *Multivariate data analysis: a global perspective*. 7th edn. New Jersey: Pearson Education, Inc.
- Hall, S. S. (1990) "Quality assurance in the hospitality industry", *Quality Press, Milwaukee*, pp.1-13.
- Hansson, J. and Klefsjö, B. (2003) "A core value model for implementing total quality management in small organisations", *The TQM Magazine*, 15(2), pp.71-81.
- Ho, D. C. K., Duffy, V. G. and Shih, H. M. (1999) "An empirical analysis of effective TQM implementation in the Hong Kong electronics manufacturing industry", *Human Factors and Ergonomics in Manufacturing*, 9(1), pp.1-25.
- Hoyle, R. H. and Panter, A. T. (1995) "Writing about structural equation models", in Hoyle, R.H. (ed.) *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, California: Sage Publications, pp.158-176.
- Joiner, T. A. (2007) "Total quality management and performance: the role of organization support and co-worker support", *International Journal of Quality & Reliability Management*, 24(6), pp.617-627.
- Kanji, G. K. (2002) *Measuring Business Excellence*. London, New York: Routledge.
- Karia, N. and Asaari, M. H. A. H. (2006) "The effects of total quality management practices on employees' work-related attitudes", *The TQM Magazine*, 18(1), pp.30-43.
- Karuppusami, G. and Gandhinathan, R. (2006) "Pareto analysis of critical success factors of total quality management: a literature review and analysis", *The TQM Magazine*, 18(4), pp.372-385.
- Kaynak, H. (2003) "The relationship between total quality management practices and their effects on firm performance", *Journal of Operations Management*, 21, pp.405-435.
- Kuei, C. H., Madu, C. N., Lin, C. and Lu, M. H. (1997) "An empirical investigation of the association between quality management practices and organizational climate", *International Journal of Quality Science*, 2(2), pp.121-137.
- Lakhe, R. R. and Mohanty, R. P. (1994) "Total quality management: concepts, evolution and acceptability in developing economies", *International Journal of Quality & Reliability Management*, 11(9), pp.9-33.
- Lau, R. S. M. and Anderson, C. A. (1998) "A three-dimensional perspective of total quality management", *International Journal of Quality & Reliability Management*, 15(1), pp.85-98.
- Martinez-Lorente, A. R., Dewhurst, F. and Dale, B. G. (1998) "Total quality management: origins and evolution of the term", *The TQM Magazine*, 10(5), pp.378-386.
- Mohsen, M.A.M.S. (2009) *The introduction of a total quality management culture in hotels*. Unpublished PhD thesis. University of Wales Institute.
- Motwani, J.; Kumar, A. and Youssef, M.A. (1996) "Implementing quality management in the hospitality industry: current efforts and future research directions", *Benchmarking for Quality Management & Technology*, 3(4), pp.4-16.
- Motwani, J. (2001) "Measuring critical factors of TQM", *Measuring Business Excellence*, 5(2), pp.27-30.
- Omachonu, V. K. and Ross, J. E. (1995) *Principles of total quality*. 1st edn. London: Kogan Page Limited.
- Pavlic, I., Vrdoljak Raguž, I. and Svilikos, T. (2004) *The importance of total quality management in hospitality: the case of Croatia: proceeding of the 9th international conference on travel trade, regional development and education*. University of South Bohemia, pp. 133-139.
- Samson, D. and Terziovski, M. (1999) "The relationship between total quality management practices and operational performance", *Journal of Operations Management*, 17, pp.393-409.
- Saraph, J. V., Benson, P. G. and Schroeder, R. G. (1989) "An instrument for measuring the critical factors of quality management", *Decision Sciences*, 20(4), pp.810-829.
- Saunders, L. W. and Graham, M. A. (1992) "Total quality management in the hospitality industry", *Total Quality Management*, 3(3), pp.243-255.
- Shahbazipour, M. (2007) *A feasibility study of the total quality management in hospitality industry with a case study in Esfahan hotels*. Unpublished MSc dissertation. Lulea University of Technology.
- Shewhart, W. A. (1931) *Economic control of quality manufactured product*. New York: Van Nostrand. Republished in (1980) Milwaukee, Wis: the American Society for Quality Control.
- Sila, I. (2005) "The influence of contextual variables on TQM practices and TQM organizational performance relationships", *The Business Review*, 4(1), pp.204-210.
- Sila, S. and Ebrahimpour, M. (2003) "Examination and comparison of the critical factors of total quality management (TQM) across countries", *International Journal of Production Research*, 41(2), pp.235-268.
- Talib, F. and Rahman, Z. (2010) "Critical success factors of TQM in service organizations: a proposed model", *Service Marketing Quarterly*, 31(3), pp.363-380.
- Tari, J. J., Claver-Cortes, E. Pereira-Moliner, J. and Molina-Azorin, J.F. (2010) "Levels of quality and environmental management in the hotel industry: their joint influence on firm performance", *International Journal of Hospitality Management*, 29, pp.500-510.
- Thiagaragan, T., Zairi, M. and Dale, B. G. (2001) "A proposed model of TQM implementation based on an empirical study of Malaysian industry", *International Journal of Quality & Reliability Management*, 18(3), pp.289-306.
- Thiagarajan, T. and Zairi, M. (1998) "An empirical analysis of critical factors of TQM: a proposed tool for self-assessment and benchmarking purposes", *Benchmarking for Quality Management & Technology*, 5(4), pp.291-303.
- Walker, J. R. and Salameh, T. T. (1990) "The QA payoff", *Cornell Hotel and Restaurant Administration Quarterly*, 30(4), pp.57-59.
- Yusof, S. M. and Aspinwall, E. (2000) "A conceptual framework for TQM implementation for SMEs", *The TQM Magazine*, 12(1), pp.31-36.
- Zairi, M. and Youssef, M. A. (1995) "Benchmarking critical factors for TQM, part I: theory and foundations", *Benchmarking for Quality Management & Technology*, 2(1), pp.5-20.
- Zhang, Z., Waszink, A. and Wijngaard, J. (2000) "An instrument for measuring TQM implementation for Chinese manufacturing companies", *International Journal of Quality & Reliability Management*, 17(7), pp.730-755.