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Full Length Research Paper

Quality management as an effective strategy of cost savings

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This paper presents the cost savings performance of two quality management (QM) organisation classified groups based on the intensity of QM being implemented, namely low intensive and high intensive. Data of this study were collected from 205 local authority managers in Malaysia. The issue of cost savings is topical to the current focus of many public organisations worldwide due to the scarcity of funds available and expectation of the general public nowadays being higher than before. Although, QM has been discussed for years as an effective cost savings strategy, this strategy is not free from critics, mostly from those who are sceptical toward the potential attached to QM. Among the criticism appearing in the literature is that the implementation of QM requires a huge fund and the cost benefit of its implementation is less visible. After years of QM being introduced into the Malaysian public service, issue of its implementation deserve attention from scholars. The reported findings indicated that QM organisations achieve different cost savings performance subject to the intensity of its implementation. Therefore, the outcome of this study suggested managers of QM organisations to intensify the practice of QM, so that the cost savings objective would be attainable.

Key words: Quality management, public sector, cost savings.

INTRODUCTION

Organisations have to manage their resources effectively due to the limited resource available, and one of the effective strategies for managing the available resource is to reduce the cost of operations. In other words, managers have to find ways for resources to be used effectively by reducing work defect, shortening the time taken to complete a particular process, or reducing waste. All those objectives are closely related to quality management (QM) as purported in the literature, that QM is an effective cost savings strategy. As such, Kumar et al. (2009) reported that QM is found to be a significant determinant of less work defect. Less work defect and shorter work process time may lead organisations to use lesser resource, which in turn saves on the cost of operations. As reported by many authors (Flynn, Schroeder and Sakakibara, 1995; Fatima and Ahmed, 2000; Huarng and Chen, 2002), cost reduction is among the benefits received by QM organisations. However, Zhang (2000) solicited that there is no evidence that organisations have successfully gained cost savings under the practice of QM. Further, Kumar et al. (2009) found that 41.7% of organisations in their study reported that they fail to secure cost savings benefits under the practice of QM. In short, there are proponents as well as opponents related to the issue of associating QM with cost savings performance. Although, this inconsistency has been alive in the literature for years, scientific exploration done to clarify and resolve the issue has never been adequate and it is still attracting attention of recent studies (Kumar et al., 2009; Zu, 2009).

Based on the contingency perspective, an issue attached to the implementation of QM is that there is a possible explanation to verify the variability in results achieved by QM-based organisations. Therefore, the approach of QM being implemented has become the focus subject for a group of researchers in their effort to investigate what causes QM organisations to achieve different results. Among researchers in this group are Agus (20008), Kumar et al. (2009) and Yusof and Aspinwall (2000). However, none of these authors had investigated the intensity issue of QM as a possible answer for different results achieved by public organisations, leaving

this issue warranting attention for investigation.

In this study, the intensity of QM being implemented as a possible determinant of QM results is deemed reasonable to be investigated as the subject under study, namely local authorities in Malaysia, are all initiating QM in a standard form based on the circular published by central administrator or Malaysian Management and Planning Unit (MAMPU). However, as times goes on, variation in the implementation exists. There are local authorities with excellent service performance, since some are rated as five-star local authorities and others have won national quality awards (Khalid, 2010). There are also local authorities that fail to sustain the practice of QM, leaving their performance the focal point of consistent public complaints (Said et al., 2009). While there have been authors (Hendricks and Singhal, 2001) that report the difference in performance achieved by QM organisations and non-QM organisations, this kind of comparison is deemed inappropriate to be conducted for local authorities in Malaysia due to the fact that there is no local authority in Malaysia that can be grouped as pure non-implementers of QM.

PROBLEM STATEMENT

Local authorities in Malaysia are associated with the pro blem of having weak financial management (Lim, 2007). As a public institution, public authorities have less fle xibility in terms of ability to generate income as compared to business or private institutions. This situation would require local authorities to find other ways of managing their funds. In general, there are two ways of overcoming the situation of limited funds, namely increasing the funds and effectively using the existing funds. Due to the main function of public institutions being to service people rather than raising funds, the latter approach is deemed more appropriate for local authorities. They have to find ways to manage the limited funds effectively rather than opt to improve taxes or charges on the public as a way out from the financial problem. Among the widely discussed strategy of cost savings for local authorities is the QM (Al-Qahtani and Al-Methheb, 1999). However, QM is not new for local authorities in Malaysia. In fact, QM has been implemented for more than 20 years since the launching of Work Excellence Culture in 1989. Thus, this study had not meant to propose to local authorities to implement QM, but to investigate one interesting phenomenon: What are the factors that lead to the inability of local authorities in securing cost benefits attached to the implementation of QM? In hopes to clear the doubts, this paper reports the intensity of QM in place as a possible factor for QM to be an effective cost savings strategy.

RESEARCH OBJECTIVES

Moving from the premise that success of QM is contingent contingent upon the approach taken in implementing it, this study sought to investigate the cost savings effect of QM by comparing the high intensive implementers with the low intensive implementers. Five critical factors of QM were investigated, namely customer focus, benchmarking, employee empowerment, continuous improvement and quality information systems. Cost savings performance, as a criterion variable under study represents one of the bottom lines of QM. The issue of cost savings is also pivotal with the focus of many public organisations worldwide moving toward becoming a more sustainable organisation.

LITERATURE REVIEW

This section presents the literature review in three parts. The first part describes the potential of QM as a cost savings strategy, the second part elaborates on the implementation issues attached to successful and unsuccessful QM organisations, while the last part reviews studies done to shed light on the issue of different results being achieved by QM organisations.

QM as cost savings strategy

The objective of implementing QM has evolved from time to time, as can be traced in the development of QM literature. During the early modern history, people used to produce tools for hunting wildlife for their food. The tools produced are said to be of quality if they can serve their purpose. The quality of their tools is also evidence through archaeological findings. There are tools produced that are still in their original forms even after hundreds of years of being made and buried. Later, in the world of business, a quality product is defined based on its ability to satisfy the needs of their customers (Agus, 2008). Stiff competition among business organisations has become among the push-factors for organisations to implement QM (Kumar et al., 2009; Bernett and Nentl, 2010). As compared to the decade before, this current decade sees many parties, business organisations, public organisations and people at large giving focus on the sustainability issue. Among the sustainability issues that are relevant to the local authority include saving the costs of their operations. Reducing the cost of operation is among the top reasons for an organisation to practise QM (Kayis, 1998) . In short, quality will be a relevant issue to be studied as long as people never stop developing the best approach in doing things better and thus make this world better for living. According to Noori (1990), quality is important for four reasons, namely cost, competitive advantage, reputation and sustainability.

The practice of QM has attracted attention of managers worldwide due to its effectiveness in reducing waste, lowering expenses, cutting material costs,

lessening wage budgets and increasing productivity (Flynn et al., 1995; Kaynak, 2003; Kumar et al., 2009). Under the practice of QM, the problem of redoing or correcting for misfit end-products is aimed to be eliminated. The discussion on QM as an effective strategy has been well discussed through the concept of internal and external cost of quality failure (Michalska, 2006; Popescu and Girboveanu, 2006). Based on this concept, the funds invested by an organisation to prevent defect and reduce error is said to cost the organisation less than the possible harmful cost that might be borne by an organisation if prevention or quality control is ignored. Studies conducted by Flynn et al. (1995) reported that QM organisations have successfully attained the cost savings benefits by simplifying product design to reduce rate of failure, scraps, and re-work. Another author reported that the approach taken by QM organisations to involve customers in their product development process was one of the strategies to avoid product failure in meeting market expectation (Kaynak, 2003). A similar conclusion was derived by Kumar et al. (2009) when they found that QM organisations had successfully reduced the defect rates in their products. In a similar vein, Kayis (1998) reported that 80% of respondents in his study reported that their companies have achieved cost savings benefits due to the practice of QM.

Factors causing unsuccessful QM implementation

The literature of QM is replete with discussion on possible factors that may have impact on the results of QM. These factors include:

(a) The practice of QM has been imitated. Yusof and Aspinwall (2000) reported that this kind of organisation is unable to sustain QM practices and the significant improvement achieved by them was subtle. This type of implementers can possibly be termed as “followers of the crowd”, where they implement QM due to external push factors, such as client request, public regulations, or consumer movements. They possibly do not really understand the principle, tools, objectives, requirements and other matters related to the process of implementing QM. Although, QM has been described as a strategy adaptable to all organisations, the uniqueness of each organisation requires QM to be tailor-made rather than be implemented in a standard form (Al-Qahtani and Al-Methheb, 1999). The philosophy of QM such as continuously improve, employees working as a team and customer being first, are generally relevant to all organisations, but variation in approach of implementing them may be required. The nature of the customer for a local authority is definitely different with the nature of customer for a commercial organisation. In most cases, customers for a commercial organisation pay directly for the service rendered or product bought, invest fund into the business, or work for the business. However, for a local authority, the customer may not only be people who have direct dealings with the local authority, but it may also involve the general public at large. While customer of businesses pays for what they want, people at large pay tax due to the laws and regulations imposed. In many cases, service rendered by public organisations, such as licensing, has no alternative competing organisations at all, thus forcing the general public to have no choice of turning to other service providers. Therefore, the concept of retaining customers seems irrelevant to be used as indicators of good service delivered by a public organisation.

(b) Tenure of QM implemented (Kumar et al., 2009). QM is a long-term agenda, never ending process, and requires managers to do well-planned actions (Agus, 2008). The positive results of QM may be invisible in the short term and not always quantifiable. As a long-term agenda, it requires persistent commitment and support from the top management. For those who are looking for a 24 h quick solution strategy for cost savings, QM is not the answer and they may be frustrated with the little improvement that they attain. Although, the implementation of QM is said to be effective for cost savings, its imple-mentation may require the organisation to allocate a huge fund at the early stages of implementation. In the short term, the cost benefit attained might be smaller than the cost incurred. Therefore, the cost graph of QM may fail to bring net positive cost savings for organisations, but the changes may improve over time where the cost benefits attained become bigger.

(c) The organisation limitedly focuses on particular factors of QM. QM is built on particular critical factors covering customers focus, continuous improvement, and team work of organisational members (Agus, 2008). All these must coexist and grow together as a prerequisite for QM to be successful. Missing any of these three pillars may deteriorate the synergy among them. As such, an organisation that implements customer focus strategy cannot rely only on the front line staff or production staff. All of them must work collectively ranging from departments of production, quality control, marketing, customer relationship and sales.

All three points associated with the result of QM listed above fall into the same domain, which is the intensity of QM being implemented that covers the relatedness with unique organisational factors, tenure of implementation and QM as consisting of critical factors. In short, the discussion narrated here lays down the possibility of implemented QM intensity as a factor that may cause the difference in cost savings benefits attained by the QM organisation.

Performance of QM organisations

A study on performance of International Organization for

Standardization (ISO) organisations was reported by Lee et al. (2009). They classified their samples under study into two, namely samples that purposely implement ISO just for getting certified and organisations that implement ISO with very high commitment. The latter group was found to intensify the quality related practices, thus securing better performance than the first group. These findings are consistent with studies conducted by Terziovski et al. (2003), and Costa and Lorente (2007). According to their report, the manager's commitment toward the ISO organisation is a successful factor for the ISO organisation and not the certification itself. In other words, they suggested that managers of ISO organisations who do not believe in the potential of ISO would be hard pressed to achieve good results, even after being certified. Moreover, the authors who compared the performance between the ISO-certified organisations agreed that the implementation issue plays an important role in securing good results. The same conclusion was derived by Powell (1995) for QM. He reported that QM must be well implemented as a prerequisite for positive results to be obtained. However, findings of the studies performed on ISO organisations should be generalised on QM organisations with care due to their imperfect match between the two. As documented by Samat et al. (2008), there was no significant difference in the level of QM practices between ISO organisations and non-ISO organisations.

In addition to the studies on ISO organisations, there are studies done in comparing the performance between QM organisations and non- QM organisations. These reflective comparisons were done by Sun (2000), and Hendricks and Singhal (2001). In other words, they did not investigate the degree of performance achieved among QM organisations. In the study conducted by Hendricks and Singhal (2001), the authors reported that QM organisations achieved better performance than non-QM organisations in the dimensions of profitability, revenues, costs and capital expenditure.

A study to compare different performance existing among QM organisations was reported by Prajogo and Brown (2006). They termed their samples as minimalist and committed organisations. The minimalist refers to an organisation that invests the least effort just for the sake of being acknowledged by others. The committed organisation refers to an organisation that implements QM in the best possible ways as required by true QM organisations. Another study by Brah et al. (2000), done in the business sector in Singapore, found an interesting phenomenon that the tenure of QM being in place does not reflect the rigorousness of QM being implemented. In other words, the findings reported by these authors provided support for this present study to be conducted. Although, QM has been in place for years in local authorities in Malaysia, the rigorousness or intensiveness of its implementation may not be reflective of the age of implementation.

In a study conducted by Agus (2008), it was revealed that the length of QM adoption does not have a moderating effect on the relationship between QM and performance. The findings, however, was inconsistent with another study conducted on Canadian companies by Kumar et al. (2009). They found that a company only sees positive results of implementing QM after six months. However, there were companies that only achieve positive result after eight years of QM introduced into their organisation. This study by Kumar et al. (2009) however, only used 14 business companies as their sample, thus, raising the issue of generalisability of results overall, and more specifically pertaining to the non-business organisations like those in the public sector. The time frame of QM implementation is not a perfect reference to the issue of intensiveness, as Brah et al. (2000) reported, which means that the time frame of QM implementation does not reflect the intensiveness of QM implementation.

The discussion narrated in the preceding paragraphs indicates the variability of performance effect that may be achieved by QM organisations due to variability of the approach taken in implementing it. However, none of these studies has specifically focused on cost savings effect, thus, leaving this issue unattended. Therefore, this study posited the following hypotheses:

H_1: There is a difference between the cost savings effects of high intensive customer focus and low intensive customer focus.

H_2: There is a difference between the cost savings effects of high intensive benchmarking and low intensive benchmarking.

H_3: There is a difference between the cost savings effects of high intensive employee empowerment and low intensive employee empowerment.

H_4: There is a difference between the cost savings effects of high intensive continuous improvement and low intensive continuous improvement.

H_5: There is a difference between the cost savings effects of high intensive quality information systems and low intensive quality information systems.

METHODOLOGY

Research instrument

A questionnaire set was developed to gather the data required for the study. The questionnaire was carefully developed by taking into consideration factors critical to the quality of instrument developed, that is, care was taken in the wording used, sequence of items, expert opinion and the questions being respondent friendly. The previous questionnaire used in the literature was adapted into this study as an effort to minimise the problem of developing a weak research instrument. The item used and its related source are tabulated in Table 1. All items were measured using a five-point Likert-like scale ranging from one (lowest score) to five (highest score).

Sampling

The sampling frame of this study was developed by compiling a list

Table 1. Sources for item used in the research instrument.

Constructs (Previous Studies)	Items used to Measure the Constructs
Customer focus (Mady, 2009; Zu, 2009)	• Customer feedback is used effectively • Actively seeks ways to improve quality of service • Aware of the results of customer surveys • Customer complaints are examined by managers
Benchmarking (Ahire et al., 1996; Black and Porter, 1996)	• Engaged in extensive benchmarking • Benchmark the level of customer satisfaction • Benchmark the service process • Benchmark the level of servicescapes
Employee empowerment (Mady, 2009)	• Employees are responsible for error free output • Involvement of operational workers in quality related decisions • Employees are given authority to provide quick solution for problems
Continuous improvement (Mady, 2009; Zu, 2009)	• Quality initiative is an ongoing process • Continuous improvement is practised in all operations • Continuous improvement overrides short-term results
Quality information systems (Black and Porter, 1996)	• Quality related data is well collected • Timeliness of quality related data • Availability of quality related data • Quality related data is used to manage quality initiatives
Cost savings (Zu, 2009)	• Operation cost savings • Decrease in work defect • Reduced unit cost of service delivered

of departments attached to all City and Municipal Councils in West Malaysia. Rather than investigating particular local authorities as a unit analysis, the decision was made to conduct the study at the departmental level. This approach was deemed appropriate due to the fact that a local authority has very diverse activities run by different departments, thus these departments may possibly have different quality objectives. Furthermore, in certain local authorities, different departments were located at different locations, thus perhaps this would by a source of inconsistency in quality culture. Thus, if this study was conducted at a wide organisational level, the response received from the respondents may perhaps not really reflect the existing situation and thus may weaken the validity of findings. Stratified random sampling was applied in selecting samples under study due to characteristics of intra-group heterogeneity and inter-group homogeneity attached to local authorities (Sekaran, 2003). This characteristic is reflected through the diverse departments with diverse activities and objectives existing in each local authority. However, the overall organisational objectives, the function, and the laws used to govern local authorities are almost similar to each other.

Three phases of samples selection were involved in finalising the samples under study, which are as follows:

Phase 1: the local authorities were divided into two groups accordingly with their status of either city council or municipal council.

Phase 2: all departments attached to city councils were selected as samples due to small number available. All in all 85 departments were selected

Phase 3: in the group of municipal council, there were 25 municipal councils to be randomly selected. From this group, 18 municipal councils were selected. The number of municipal councils required was determined at 18 municipal councils based on the possibility of non-response or incomplete responses received from respondents.

In total, 250 departments were selected as samples under study, which were broken down as follows: 85 departments attached to seven city councils and 175 departments attached to 18 municipal councils. After data collection was done, only 80% of 250 respondents had returned completed and usable questionnaires. The sampling frame, number of samples selected, and questionnaires returned are tabulated in Table 2.

Goodness of data

The reliability of instrument used was tested using internal consistency test. Table 3 reports the results of reliability analysis indicating that the Cronbach-alpha coefficient for all constructs that surpassed the threshold of 0.60 (Nunnally and Bernstein, 1994). In other words, the used instrument was accepted to have high possibility of producing the same result even when used repeatedly. Further examination indicated that all items concertedly contribute to the reliability of their represented construct. This is evidenced where the Cronbach-alpha coefficient of constructs would be reduced if any item were to be removed from the questionnaire set. The construct validity was tested using exploratory factor analysis. This analysis as reported in Table 4 was done to assure that the constructs measured what they were supposed to measure. Examination done indicated that all items of respective constructs had loaded nicely on their single factor with factor loadings all above the threshold of 0.40 (Hair et al., 1998). In other words, each developed item has uniquely attached to their represented construct and not the co-tested constructs. The Eigen values of all constructs were above the reference value of 1.0, thus, indicating

Table 2. Sampling and responses.

	Sampling frame (Number of Departments)	Randomly selected samples	Number of questionnaires returned	Percentage of response (%)
		City Hall /Council		
Kuala Lumpur	22	22	14	63.64
Johor Bahru	7	7	6	85.71
Alor Setar	8	8	5	62.50
Melaka	13	13	10	76.92
Ipoh	9	9	9	100
Shah Alam	12	12	10	83.33
Petaling Jaya	14	14	12	85.71
		Municipal Council		
Batu Pahat	6	6	5	83.33
Johor Bahru Tengah	9	9	8	88.89
Kluang	6	-		
Muar	7	7	5	71.43
Sungai Petani	10	10	8	80.00
Kulim	10	10	8	80.00
Langkawi	8	8	7	87.50
Kota Bharu*	8	-		
Alor Gajah	11	11	9	81.82
Seremban*	11	-		
Nilai	6	-		
Port Dickson	9	9	7	77.78
Kuantan	11	11	10	90.91
Temerloh	13	13	10	76.92
Manjung	10	-		
Taiping	8	-		
Kuala Kangsar	7	7	6	85.71
Teluk Intan	8	-		
Kangar	8	8	7	87.50
Pulau Pinang	10	10	8	80.00
Seberang Prai	10	10	10	100
Ampang Jaya	10	10	8	80.00
Kajang*	10	-		
Klang	10	10	8	80.00
Selayang	11	-		
Subang Jaya	9	9	9	100
Sepang	7	-		
Kuala Terengganu*	7	-		
Kemaman	7	7	6	85.71
Total	342	250	205	82.00

* These local authorities were the local authorities involved in the pilot study.

Table 3. Reliability Test Results.

Constructs		Cronbach alpha if item deleted	Cronbach alpha of the construct
Customer focus	Item 1	0.737	0.795
	Item 2	0.714	
	Item 3	0.768	
	Item 4	0.744	
Benchmarking	Item 1	0.798	0.845
	Item 2	0.789	
	Item 3	0.831	
	Item 4	0.786	
Employee empowerment	Item 1	0.464	0.682
	Item 2	0.681	
	Item 3	0.553	
Continuous improvement	Item 1	0.739	0.770
	Item 2	0.766	
	Item 3	0.542	
Quality information systems	Item 1	0.768	0.827
	Item 2	0.764	
	Item 3	0.777	
	Item 4	0.816	
Cost Savings	Item 1	0.718	0.769
	Item 2	0.758	
	Item 3	0.724	

Table 4. Factor analysis results.

Constructs	F factor loadings	Eigen value	% of variance explained	Cumulative variance explained
Customer focus	0.560 - 0.656	8.764	41.732	41.732
Benchmarking	0.541 - 0.741	1.570	7.475	49.207
Employee empowerment	0.649 - 0.742	1.343	6.397	55.604
Continuous improvement	0.551 - 0.726	1.141	5.435	61.039
Quality information systems	0.659 - 0.720	1.104	5.527	66.296
Cost savings	0.517 - 0.605	1.027	5.010	71.306

that the constructs consisted of acceptable combination of theoretical items (Hair et al., 1998). The KMO value of 0.891 indicated that the factor analysis was an appropriate analysis for the data analysed.

RESULTS

This section presents further analysis to test the hypotheses under study. Before testing the hypotheses, a correlation test was performed to gauge any association that may exist between QM and cost savings. Table 5 tabulates the QM practices significantly correlated to cost savings. The results support the literature that widely discusses QM as an effective strategy of cost savings (Flynn et al., 1995; Fatima and Ahmed, 2000; Huarng and Chen, 2002). However, the effect of QM on cost savings that may vary among QM organisations can hardly be gauged at this point. Further analysis was needed by classifying

Table 5. Correlation between QM and cost savings.

Constructs	Coefficient correlation
Customer focus	0.434*
Benchmarking	0.427*
Employee empowerment	0.395*
Continuous improvement	0.480*
Quality information systems	0.531*

*p< 0.05

Table 6. Classification of samples.

Critical factors of QM	Level of intensity	Number of respondents
Customer focus	High	139
	Low	66
Benchmarking	High	110
	Low	95
Employee empowerment	High	86
	Low	119
Continuous improvement	High	124
	Low	81
Quality information systems	High	44
	Low	161

samples into two groups, namely high intensive and low intensive QM-implemented organisations.

The classification of samples was systematically done based on the procedure developed as follows. The score for each construct was measured by averaging the cumulative score of all items attached to the respective construct. The averaging process resulted in a theoretical range score for each construct, which was one to five. The sample with a score of four or less for any particular construct was grouped as low-intensive implementers. The sample with a score between four and five was grouped as high-intensive implementers. The same treatment was performed to all constructs under study. Table 6 reports the results of the grouping process for samples. Data indicated that the number of high intensive implementers varies for different QM critical factors. These results indicated that the analysis of cost savings for each QM critical factor was more reasonable rather than if analysis was done on QM as a single construct.

Further analysis was done to compare the mean scores of cost savings for all critical factors of QM under study. The results of this analysis are presented in Table 7. According to the results presented, it is crystal clear that the mean scores of cost savings for high-intensive implementers are higher than low-intensive implementers. This conclusion is true for all critical factors of QM under study. For example, mean scores of cost savings is 3.82 for high-intensive implementers of customer focus, but 3.34 for low-intensive implementers. At this stage, whether the score of cost savings achieved by different intensity levels of the implementer is significantly different or otherwise is yet to be justified. To examine the hypotheses under study, Levene's T-test was performed and results of this test are tabulated in Table 8.

Table 8 reports the results off the independent sample T-test. The results indicated that H_2 and H_4 are supported. In other words, there are significant differrences in cost savings for different intensity levels of implementation for two critical factors of QM, namely benchmarking and continuous improvement. The other three hypotheses, H_1, H_3, and H_5 were not supported. In other words, there are insignificant differences in cost savings for different intensity levels of implementation for three critical factors of QM, namely customer focus, employee empowerment and quality information systems.

DISCUSSION

This study presented findings that are food for thought. The correlation test supported that a theoretical relationship exists between critical factors of QM and cost savings. A comparison between mean scores of cost savings for high-intensive and low-intensive samples allowed this study to reach a conclusion that higher implementers secure higher cost savings benefits. However, Levene's T-test indicated that the significant difference of cost savings benefits between high- and

Table 7. Means and standard deviations.

Critical factors of QM	Level of intensity	Cost Savings	
		Mean	SD
Customer focus	High	3.82	0.707
	Low	3.34	0.697
Benchmarking	High	3.87	0.648
	Low	3.43	0.765
Employee empowerment	High	3.98	0.659
	Low	3.44	0.708
Continuous improvement	High	3.92	0.615
	Low	3.28	0.746
Quality information systems	High	4.03	0.750
	Low	3.57	0.703

Table 8. Independent sample T-test: Levene's test.

Hypothesis under study	Variables	Levene's test for Equality of variances		Results
		F	Sig	
H1	Customer focus	0.000	0.987	not supported
H2	Benchmarking	4.404	0.037*	supported
H3	Employee empowerment	2.792	0.096	not supported
H4	Continuous improvement	7.092	0.008*	supported
H5	Quality information systems	0.145	0.704	not supported

*$p < 0.05$.

low-intensive implementers was only significant for two critical factors of QM, namely benchmarking and continuous improvement. Although, QM has been reported in the literature for years as a significant predictor of cost savings (Flynn et al., 1995; Kaynak, 2003; Kumar et al., 2009), further effort to investigate different cost savings effect that may exist for different intensity levels of implementation has received less attention. Although, QM has remained to be a well accepted strategy for managers to reduce their cost of operations, there are organisations that become evidence for the statement "the successful result of QM is not always true". They fail to secure good results of implementing QM (Gibson and Tesone, 2001). These failed cases perhaps do not contradict the theoretical relationship between QM and performance; it provides avenue to postulate that the relationship between QM and performance is not in the form of a simple direct relationship, but dependent upon the other factors, among others the approach taken to implement it.

This study reported that the cost savings benefit achieved by QM organisation is related to the intensity of benchmarking been practised. The practice of benchmarking has been reported as a successful strategy for local authorities in UK in their effort toward improving their performance (Magd and Curry, 2003) . However, the literature has urged managers to intensify the practice of benchmarking, so that the intended results would be achievable. As narrated by Carpinetti, Luiz and Melo (2002), organisations should not limit themselves by benchmarking the end products or particular aspects only, but they should benchmark as many aspects as possible, covering input, process, technology, and human aspects as well as outputs. Their suggestion is much related to the nature of organisational functions. The output of an organisation is a result of many interacting variables within the organisation, which may contribute in one way or another toward the final output. In other words, if an organisation intends to benchmark its final product or service rendered with the best possible organisation, the organisation has to benchmark the other aspects as well. The intensity of benchmarking being practised is also a matter for the organisation to secure cost savings benefits since benchmarking practice provides the organisation with strategic information useful to improve their performance. The success of benchmarking practices is much related with the quantity and quality of information an organisation has (Goncharuk, 2009). In other words, an organisation that is serious in implementing benchmarking has no other way but to acquire as much information as possible without discounting the element of reliability and validity of information gathered. With useful information on hand, the organisation would be able to plan in the best possi-

ble way in planning, controlling, measuring and making decisions related to their operation. However, this is all perhaps near impossible if an organisation only chooses to benchmark their end product with their counterparts. This approach would only provide the organisation with limited information to be used in managing their organisation.

The findings of this study also indicated that the cost savings effect is significantly different for high- versus low-intensive implementers of continuous improvement. An earlier analysis on mean scores indicated that higher intensive implementers would secure higher cost savings benefits. The advocates of QM have been supporting the idea that sustainability of QM practice lies upon the work culture of continuous improvement and it is a never ending mission (Agus, 2008; Fryer, et al., 2007; Terziovski et al., 2003) . As an analogy, there are maybe two organisations side by side that keep improving their approaches in delivering service to their customers. However, the total effect they receive may possibly be unequal based on their starting point and ending point. As such, Bernett and Nentl (2010) in their study reported that 67% of interviewed respondents in their study agreed that continuous improvement practice had enabled their organisation to reduce cost of operations by be assumed that an organisation that is already at a latter point would possibly end at a farther point, thus, securing better performance effects than an organisation that has just started their improvement process. This analogy justifies higher cost savings benefits received by high-intensive implementers.

A local authority that is continuously looking for ways to improve their operations and performance perhaps should be classified as pure QM implementers. In other words, they implement QM not just because it is national agenda, but because they want to place their organisation at a higher level than before. This pure QM implementer would always go on their own initiative to continuously improve their performance which in turn contributes to their better performance than their corresponding counterparts. There is no other way to consistently improve an organisation, other than implementing it incrementally rather than radically (Larson et al., 2008). Therefore, the ability of managers to sustain the improvement effort is much more relevant to the betterment of their organisation, rather than their ability to initiate the improvement strategy. Aside two hypotheses under study were supported, while the other three hypotheses under study, namely H_1, H_3 and H_5 were not supported. In other words, this study found that there is no significant difference of cost savings between high-intensive and low-intensive implementers of three QM practices, namely customer focus, employee empowerment and quality information systems. If compared to the practices of benchmarking and continuous improvement, these three QM practices are said to be a more homogenous practice among local authorities. Although, the different levels of practice exist between them, the minimal practices required for a public organisation is there. For example, customer focus only becomes a concern of central and state governments, thus, they initiate many policies and actions that also involve local authorities to improve the services delivered to the public.

In this study, the higher intensity of employee empowerment is not a matter for cost savings benefits. This finding perhaps could be explained by the nature of the public service in local authorities in Malaysia. According to Khalid (2010), local authorities in Malaysia are closed service organisations with very limited opportunity of career advancement for staff. Basically, most of the regulations of what an employee can and cannot do are homogeneous among public service organisations. This regulation is normally initiated by the central policy administrator and it is integrated into all public organisations without taking into consideration the uniqueness of each organisation. In other words, the authority given to the managers of local authorities in designing the best possible approach to manage their human resource is said to be limited (Azmi, 2010) . The extra stretch they can do perhaps brings a subtle effect to their organisation. This issue deserves attention from the managers since Abdullah and Uli (2007) found that human resource practices play a significant role in contributing toward a better performance of the QM organisation.

The last critical factor, quality information system, is also a homogenous practice where all public organisations are included into the e-government agenda. The Government of Malaysia is giving considerable attention to improve the innovation and information technology of public institutions nationwide. This agenda would benefit local authorities by having reasonable quality information systems to enable them to function well. In other words, the less intensive implementers of quality information systems may still have minimal information systems required, which in turn would not deteriorate their performance. However, a local authority with more funds would initiate their own information system to fulfil their unique needs. According to Bandyopadhyay (2003), the good effect of information systems is not much related to the how big or how advance the systems are, but the consistency between the information systems and the information required by an organisation. In other words, a smaller organisation may just require small and less comprehensive information systems which are perhaps different from the requirements of information systems needed for larger organisations.

MANAGERIAL IMPLICATION

The findings of this study suggest for managers of local authorities to intensify the practice of benchmarking and continuous improvement, if the cost savings benefits of QM is intended. Benchmarking is a possible way to get

ahead and to stay ahead of competitors, since through benchmarking an organisation may compare itself with the best existing organisation in the same business. In other words, the organisation only learns from process, procedure, approach, strategies, steps, etc. that has already been proven as effective or successful in the best benchmarked organisation. The possibility of taking ineffective steps or strategies in operating the organisation is reduced, which in turn puts the organisation away from taking a wrong decision. A wrong decision is one of the possible factors that require an organisation to bear irrelevant cost of operations. The findings of this study also encourage managers to intensify the practice of continuous improvement as a way of life of organisational members. The proponents of QM (Mady, 2009; Zu, 2009) concertedly agreed that the survival of QM in one organisation lies with the spirit of never ending journey for the betterment of the organisation. In other words, the spirit of continuous improvement means organisational members have inherited in their heart that there is always room for improvement, do something today better than yesterday, and aim tomorrow to be better than today. They will always be looking for the best possible approach and most cost effective way of doing something.

LIMITATION AND RECOMMENDATION FOR FUTURE STUDY

There are limitations attached to this study which should be scrutinised while reading the reported results. Firstly, the critical factors of QM under study were restricted to five factors. Future researchers who are interested in this related issue should also give attention to the other factors that were untouched in this study. Secondly, the border line to differentiate between high-intensive and low- intensive implementers was determined arbitrarily due to the unavailability of a solid definition in the literature. Researchers should look critically into it to come out with a more generic measure in determining high intensive and low intensive implementers. Although, this study used an arbitrary measure to determine the intensity level, in principle, it was not violated. In other words, the rank used was reasonable and should not be an issue. However, the cut-off point to differentiate the upper and lower group should be re-examined.

Conclusion

This study reported intensity of QM being in place as a significant factor associated with cost savings performance. Although, the implementation of QM requires consistent and adequate funds to sustain its implementation, this study reported that the cost savings effect is more visible for high-intensive implementers. Therefore, managers of QM organisations, without doubt, should increase the intensity of their QM implementation. In other words, the implementation of QM should be well planned and supported with adequate resource. If not, the implementation of QM would possibly fail to be intensively implemented. With less intensive implementation, an organisation would possibly be hard pressed to secure significant results of QM. In the long run, this situation would deteriorate the commitment of managers toward QM, which in turn would cause the implementation of QM to fail and thus no benefits.

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