Effects of Total Quality Management Practices on Performance of Construction Projects: A Case Study of Kiambu County

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ABSTRACT

The study was guided by the following specific objectives: the effects of customer focus, top management commitment, people management and process management on the performance of construction projects. The descriptive research design was used in the study. The study was carried out in Kiambu County. Questionnaires were used as the tools of data collection. Questionnaires were used to collect data from the employees of the construction firms. Quantitative data was analyzed using descriptive statistics which entailed use of frequencies and percentages. Inferential statistics where the researcher employed Chi-square and The Spearman Rank Order tests were used. The study found out that; most of the respondents were of the view that their organizations placed a major emphasis on communication and training processes with a view of enhancing customer focus. The top management was fairly evaluated on quality performance. The capacity of their project teams in terms of periodic training needs assessment to ensure sustainable construction projects performance. The organizations had put in place fair mechanisms to ensure that the team members fully comprehended the business processes within the organizations. The study recommended that: the construction companies should seek to place greater emphasis on customer focus. This is by way of always aligning their quality management practices and ethos on the clients' needs with a view of seeking to ensure maximum satisfaction and repeat buying. The top management in the construction industry should seek to always lead by example and from the front in seeking to enforce quality standards.

1.Introduction

British Standards BS 7850-1 (1992) formally defines Total Quality Management as management philosophy and company practices that aim to harness the human and material resources of an organization in the most effective way to achieve the objectives of the organization. Total quality management can be summarized as a management system for a customer-focused organization that involves all employees in continual improvement. It uses strategy, data, effective communications and involvement of all level employees to integrate the quality discipline into the culture and activities of the organization. According to Kaynak (2002), in the late 1970s and early 1980s, previously unchallenged American industries lost substantial market share in both US and world markets. To regain the competitive edge, companies began to adopt productivity improvement programs which had proven themselves particularly successful in Japan. One of these "improvement programs" was the total quality management (TQM) system. In the last two decades, both the popular press and academic journals have published a plethora of accounts describing both successful and unsuccessful efforts at implementing TQM.

As per the research study conducted by Talib et al., (2012), they found that there are several definitions of TQM given by different authors of quality. An essence of these definitions shares four common elements. First, they share the notion that customer is the centre of attention and driving force in the TQM philosophy. Second, they consider

management commitment as an essential component for success of TQM. Last, they consider cultural and organizational changes as necessary conditions for TQM success. Most projects in Kiambu County are affected by this trend, either because they are abandoned before they are completed or when lucky to complete, are delivered very late. Another issue affecting the projects is that the quality delivered is not commensurate with actual monies spent on the projects. There is also lack of ownership of the quality aspects for delivering the expected product. The purpose of this study is therefore to establish how TQM practices are employed in execution of these projects while addressing these challenges by examining whether there are any gaps or discrepancies (positive or negative) between the quality management offered by the organizations responsible for execution of projects and the actual TQM practices.

Projects in Kiambu County continue to face several challenges; chief among them are those mentioned in the study by Nyika (2010). These problems can effectively be dealt with by having a functioning TQM system in place. Other issues affecting projects in Kiambu County include delayed payments to contractors by clients, lack of necessary capacity to implement projects by contractors; and corruption. These factors eventually affect the deliverables of the project because they affect scope, time and cost; and overall impede on quality. In order to accomplish the requirement of quality, firms have to spend time and effort on the implementation of TQM.

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To this end, firms will introduce quality management practice by communicating TQM philosophy and/or principle effectively. In addition, the application of TQM can be implemented to enhance the relationship between firms and their suppliers.

2. Related Literature

Several theories exist on TQM. Some of them which are discussed below are: the Six Sigma model, the European Foundation for Quality Management (EFQM) model and the ISO 9000 Model. Most of those writing on the subject of TQM argue that improving quality will reduce costs, increase productivity, increase market share and customer satisfaction (Deming - Evans and Dean, 2000). According to Pino (2008), TQM is a management philosophy oriented to increasing operating and business results of an organization through activities of continuous improvement (Agus, 2005; Antony, Leung, Knowles, & Gosh, 2002; Krumwiede & Lavelle, 2000; Noronha, 2002; Powell, 1995; Prajogo, 2005). As such, the philosophy is composed of principles, models and practices: practices are the observable actions that illustrate the underlying principles, while principles are the beliefs or dogmas (Boaden 1997; Powell, 1995).

Pino continues to assert that models are conceptual frameworks developed from the TQM principles that have been adapted to changes in the atmosphere of business. Examples of the TQM models include ISO 9000:2000, Malcolm Baldrige, Six Sigma, and the European Foundation for Quality Management (EFQM) excellence model. The principles constitute the deepest and most constant part of the management philosophy; however, researchers have not yet reached a consensus on the TQM principles and whether the principles are universal (Powell, 1995; Samson & Terziovski, 1999; Zeitz, Johannesson, & Ritchie, 1997).
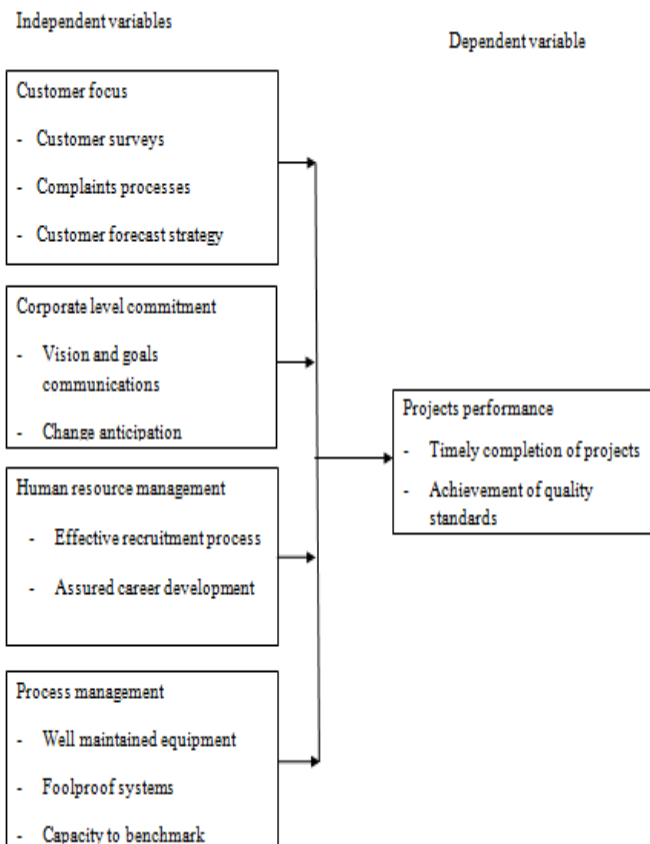
2.4 Conceptual Framework

Fig 2.1. Conceptual framework of the study.

2.4.1 Customer focus

Kumar (2006) asserts that TQM is customer oriented and that the goal is to satisfy the customer. When an organization produces goods and services of quality at economic cost and is consistently meeting the customers' needs, then the organization is said to have satisfied the customer. He goes on to say that customer's needs must be understood and used to design both the products and services offered. The experience customers have with the product or service in given situation determines the value they realize.

2.4.2 Corporate level commitment

Corporate level commitment can be achieved by providing positive leadership. Leadership is defined in the context of TQM as providing and driving the vision (Mittal, 1999). Subburaj (2005) notes that TQM based leadership puts companies far ahead of their competitors in terms of sales, profits and employee morale. Effective leadership for TQM involves everyone in the organization in value adding activities. He further asserts that the most important prerequisite to practicing TQM is that the senior management should firmly believe that TQM is the only way to do business and manage the organization. (Oakland, 2003).

According to Dale (2003) middle management will only be effective, however, if they are committed to it as a concept. The middle manager's role typically involves: Developing specific improvement plans for the department and processes for which they are responsible; ensuring that the objectives, values, policies and improvement initiatives of their departments are aligned with the company's business goals, TQM strategy, and quality management system; Communicating the company's approach to TQM in common sense and jargon free language to first line managers and other employees; Acting as TQM coach and counsellor to the employees for whom they are responsible; Ensuring that first line managers are individually trained in the use of tools and techniques and that they are used effectively; Acting as a "guardian, or sponsor or mentor" to improvement teams and securing the means to reward employees; Providing top management with considered views on how to manage the continuing implementation and development of TQM, taking into account feedback from first line managers and employees on potential difficulties or obstacles.

2.4.3 Human resource management

Employees are the strength of the organization (Subburaj, 2005). They are the prime contributors to its success. When an organization wants to expand its business or increase its profits, only the employees can make it happen. The only expandable resources in the organization are the employees. Any improvement will happen only because of the employees. Therefore, employee involvement is essential for TQM. There must be a commitment and structure to the development of employees, with recognition that they are an asset which appreciates over time. Kasongo & Moono (2010) state that part of the approach to TQM is to ensure that everyone has a clear understanding of what is required of them, how their processes relate to the business as a whole and understand the business and what is going on around them, the greater the role they can play in the improvement process..

Oakland (1989) states that quality management is concerned with moving the focus from outside the individual to within; the objective being to make everyone accountable for their own performance, and to get them committed to attaining quality in a highly motivated fashion. Management Institute defines empowerment as "an organizational state,

where people are aligned with business direction and understand their performance boundaries, thus enabling them to take responsibility and ownership while seeking improvements, identifying the best course of action and initiating steps to satisfy customer requirements". Encouraging knowledge sharing i.e. "the role of organizational reward systems", assert the key to success in any business to the ability to attract, develop and retain a quality work force. (Subburaj, 2005, Bartol and Abhishek 2002)

2.4.4 Process management

According to Hoyle (2007), all organizations have a way of doing things. For some it rests in the mind of the leaders, for others it is translated onto paper and for most it is a mixture of both. Before ISO 9000 came along, organizations had found ways of doing things that had worked for them. Systems, with all their inadequacies and inefficiencies, enabled mankind to achieve objectives that until 1987 had completely revolutionized society. The next logical step was to improve these systems and make them more predictable, more efficient and more effective- optimizing performance across the whole organization- not focusing on particular parts at the expense of the others. ISO 9000 did require organizations to establish a quality system as a means of ensuring product met specified requirements. (Kolka, 2002).

2.4.5 Projects Performance

Most of the construction projects in developing countries are undertaken through donor funded programmes. This is driven by the fact that construction is a very capital intensive exercise (Kisero, 2011). Regardless of the costs involved, sovereign states need to grow and develop their economies and one chief parameter is the infrastructural development to aid growth. This then calls for the forging of bilateral and or multilateral relations with development partners who chip in and invest their money in form of grants, loans and other programmes to facilitate these developments. Availability of finances is thus critical to the realization of optimal project performance. Majority of construction projects are the functions of governments. All government programmes that relate to procurement of goods and services have to conform to the stipulated procurement rules and practices, (Public Procurement and Disposal Act, 2005). This thus entails the government sourcing for the construction supply works through a competitive bidding process. The regulations governing the procurement of services for the public sector have been blamed for stifling growth in the construction and infrastructure sector (Ndii, 2010).

Lack of clear cut provisions in terms of specifications is a headache to many project managers involved in implementation of projects. They have to seek clarifications from many government offices and letters of clearance to facilitate the shipping in of equipment for construction works and in some instances the same waivers may not be forthcoming. It raises critical concerns about the spirit of the concessions to spur development given the bureaucratic barricades placed on the way. It has negative ramifications on the capacity to achieve optimal performance in the construction sector. In the case of donor funded projects, they have a lot of strings attached with regard to the procurement procedures. Most of the donor agencies always have a bias for the contract specifications to be tailor-made to suit the interests of the firms from their countries (Muteshi, 2010). This always disenfranchises local entities when consideration is pegged on previous experience taking into account that the local construction industry is in its nascent stages. The lack of

capacity in terms of technical expertise in the construction industry exposes the procurement process to the challenge of having very few bidders qualifying for the bids and in some instances failing to meet the thresholds required (Gumbo, 2010). This creates a situation where the available contracts are distributed to some very few contractors who qualify; as such they are overwhelmed by projects exposing the taxpayers to variations of costs owing to inflation and the other subsidiary incidental costs. This prevailing situation has negative implications on the project standards and capacity to realize good performance.

The inflationary pressure driven by the supply and demand of foreign currency and the devaluation of the shilling dealt a major blow to many construction works. The previous budgets have had to be reviewed upwards to factor in the unprecedented costs driven by the fall of the shillings value. This caused many projects to stall mid-way on exhaustion of funds and forced the injection of more from other sources thus starving some other critical areas of the much needed funds. Failure to have the requisite budgetary provisions in place for continuity of construction projects leads to situations of the programmes stalling mid-way and instances of poor performance are evidenced. The high interest rates drive up the costs of doing business. Most of the construction works is financed by financial institutions, (Shaw, 2010). There is thus need to take a critical look into the financing aspect of the works to take care of the contractors who are exposed to the risks of incurring losses and attracting hefty penalties. Rigid financing pacts have been a hindrance to most construction projects affecting their overall performance.

Methodology

3.1 Research design

This research used a descriptive case study design. It sought to determine the answers to questions asking: who, what, when, where and how. (Saunders et al., 2003).

According to (Mugenda and Mugenda, 2003), 10% or more of a population may be considered adequate to provide generalized observations about a parent population. Since the study was descriptive, 40% of the accessible population was considered adequate amounting to a sample of 30 respondents. This conforms to the widely held rule of thumb that to be representative a sample should have 30 or more test units (Wayne and Terrell, 1995). Stratified random sampling was then used to obtain a representative sample of the projects from the accessible population.

3.2 Data processing and analysis

The Chi-square tests were used as a measure of inferential statistics. The use of chi- square tests had a specific focus on variables which the study sought to confirm causal relationships on. The test statistic is a chi-square random variable (X^2) defined by the following equation.

$$X^2 = \Sigma \left[(O_{r,c} - E_{r,c})^2 / E_{r,c} \right]$$

where $O_{r,c}$ is the total frequency count observed at level r of Variable A and level c of Variable B, and $E_{r,c}$ is the expected count at level r of Variable A and level c of Variable B (Madrigal, 2012). The expected frequency counts are calculated separately for each level of the different variables.

$$E_{r,c} = (n_r * n_c) / n$$

where $E_{r,c}$ is the expected frequency count for level r of Variable A and level c of Variable B, n_r is the observations at level r of Variable A, n_c is the total number of sample observations at level c of Variable B, and n is the total sample size. The degrees of freedom (DF) is equal to:

$$DF = (r - 1) * (c - 1)$$

Where r is the number of levels for one categorical variable, and c is the number of levels for the other categorical variable. The P-value is the probability of observing a sample statistic as extreme as the test statistic.

To test for a rank order relationship between two quantitative variables when concerned that one or both variables is ordinal (rather than interval) and/or not normally distributed or when the sample size is small (Lehto *et al*, 2012) .The Spearman Rank Order was used to carry out tests on the questionnaire items having rankings and gradations..

4. Data Analysis, Interpretation and Discussion Of Findings

4.1 Customer Focus

Kumar (2006) asserts that TQM is customer oriented and that the goal is to satisfy the customer. When an organization produces goods and services of quality at economic cost and is consistently meeting the customers' needs, then the organization is said to have satisfied the customer.
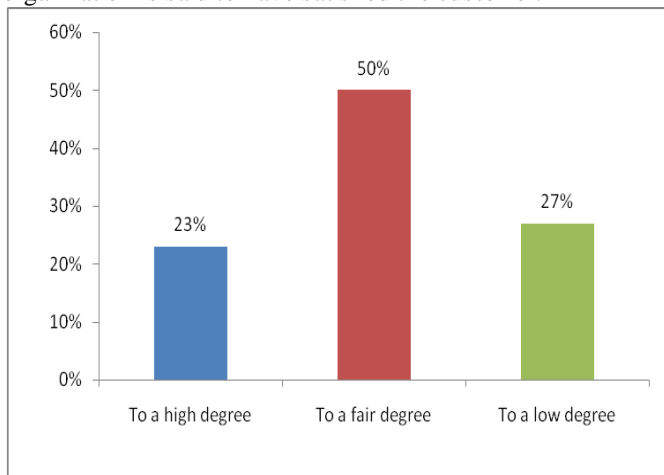

Figure 4.4. Emphasis on communication and training processes with a view of enhancing customer focus.

The response as shown in figure 4.4 indicates that most (50%) (n=15) of the respondents were of the view that their organizations placed a major emphasis on communication and training processes with a view of enhancing customer focus. The responses were an indication that customer focus was of great essence to most of the construction companies and they worked towards ensuring that the employees were forearmed by way of training and apt of exposure to the communication processes which ensured optimum customer focus.

Table 4.6. Emphasis on after sales programmes as a medium of business strategy.

Response	Frequency	Percent
To a great extent	7	23
To a fair extent	11	37
To a low extent	12	40
Total	30	100

The response as shown in table 4.6 indicates that most of the respondents were of the view that their organizations did not have a great attachment to after sales programmes as a medium of business strategy. This was an indication that most of the organizations did not seek to make a follow up with the clients upon completion of service delivery or project implementation. It can thus be interpreted to mean that most of the construction companies need to re-evaluate their after sales programmes with a view of enhancing customer focus and assuring improved construction projects performance.

A Spearman's Rank Order correlation was run to determine the relationship between the emphasis on communication and training processes with a view of enhancing customer focus and emphasis on after sales programmes as a medium of business strategy, which was statistically significant ($rs = .887$, $p = .01$). It could thus be interpreted to mean that in the event of adequate after sales programmes customer focus by the organizations was enhanced. This was in line with Kumar (2006) who asserted that TQM is customer oriented and that the goal is to satisfy the customer. When an organization produces goods and services of quality at economic cost and is consistently meeting the customers' needs, then the organization is said to have satisfied the customer.

Most of the respondents were of the view that product and service design, development and delivery were based on meeting the needs of the customers. The responses were an indication that the organizations were keen on meeting specific needs of their clients and had cut out niches for themselves as regards segmenting the clients' requirements.

Most of the respondents held the view that a wide variety of mechanisms for customers to contact the organization easily and effectively (e.g. certain phone numbers, email and website) were available. The responses confirmed the fact that the organizations strived to ensure openness in terms of avenues of communication in place. The responses denoted some measure of lethargy and inept performance on the part of the organizations which had not put in place the adequate mechanisms to ensure that clients contacted the organizations with ease.

Table 4.7. A correlation between emphasis on communication and training processes with a view of enhancing customer focus and emphasis on after sales programmes as a medium of business strategy

Correlations			Emphasis on communication and training processes with a view of enhancing customer focus	Emphasis on after sales programmes as a medium of business strategy
Spearman's rho	Emphasis on communication and training processes with a view of enhancing customer focus	Correlation Coefficient	1.000	.887[**]
		Sig. (2-tailed)	.	.000
		N	30	30
	Emphasis on after sales programmes as a medium of business strategy	Correlation Coefficient	.887[**]	1.000
		Sig. (2-tailed)	.000	.
		N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.8. Attributes on customer focus.

		Effects of customer focus programme on organizational performance		Total
		Yes	No	
Product/ service design, development and delivery are based on meeting the needs of the customer	Agree	3	8	11
	Strongly Agree	19	0	19
Total		22	8	30
A wide variety of mechanisms for customers to contact the organization easily and effectively (e.g. certain phone numbers, email and website) are available	Indifferent	0	2	2
	Agree	4	6	10
	Strongly Agree	18	0	18
Total		22	8	30
A wide variety of mechanisms for seeking and learning customers' needs and expectations (e.g. focus groups, customer surveys, customer visits and reviews) are in place.	Disagree	0	2	2
	Indifferent	0	3	3
	Agree	17	3	20
	Strongly Agree	5	0	5
Total		22	8	30
A complaints process and guidelines are established; complaints are properly recorded.	Disagree	0	2	2
	Indifferent	0	4	4
	Agree	16	2	18
	Strongly Agree	6	0	6
Total		22	8	30
Customer forecast strategies and approaches are continuously reviewed for further improvement.	Disagree	0	1	1
	Indifferent	0	2	2
	Agree	15	5	20
	Strongly Agree	7	0	7
Total		22	8	30

Most of the respondents confirmed that a wide variety of mechanisms for seeking and learning customers' needs and expectations (e.g. focus groups, customer surveys, customer visits and reviews) had been put in place. The responses were an indication that the organizations had invested in adequate feedback gathering mechanisms. This was confirmation that they valued the feedback generated by the clients and the target markets that they envisaged to capture.

A significant percentage of the respondents were indifferent to the capacity of the organizations to employ a wide array of mechanisms for seeking and learning customer needs and expectations. The responses were an indication that some of the organizations had not put in place the requisite investments with regard to engaging in customer needs and expectations survey.

Most of the respondents were of the view that complaints processes and guidelines had been established and complaints were properly recorded. The responses were reflective of a situation whereby the organizations carefully considered and evaluated the negative sentiments expressed by discontented clients. The responses were an indication that negative feedback was of high value to the organizations as a measure of ensuring that they improved on their customers' service standards.

A significant percentage of the respondents were indifferent and some disagreed to the provision of ensuring that all complaints were recorded and elaborate processes were in place to ensure that they were addressed.

Most of the respondents confirmed that the organizations had put in place customer forecast strategies and approaches that were continuously reviewed for further improvement. The responses were an indication of the fact that the organizations

valued the clients that they related with. They had gone to the extent of ensuring that they made adequate forecasts with a view of capturing client needs and ensuring that they improved on the service delivery thresholds to meet client expectations.

**4.2 Corporate level Commitment**

Corporate level commitment can be achieved by providing positive leadership. Leadership is defined in the context of TQM as providing and driving the vision (Mittal, 1999). Subburaj (2005) notes that TQM based leadership puts companies far ahead of their competitors in terms of sales, profits and employee morale. Effective leadership for TQM involves everyone in the organization in value adding activities. He further asserts that the most important prerequisite to practicing TQM is that the senior management should firmly believe that TQM is the only way to do business and manage the organization.

Table 4.9. Evaluation of top management on quality performance.

Response	Frequency	Percent
To a high degree	5	17
To a fair degree	18	60
To a low degree	7	23
Total	30	100

Table 4.9 shows that most of the respondents were of the view that the top management was fairly evaluated on quality performance. This was an indication that the mechanisms employed by the organizations did not meet the standards envisaged by the respondents. It can thus be interpreted to mean that the mechanisms in place to evaluate the top management on the quality performance standards did not

meet the thresholds envisaged by the membership of the organizations in most instances.
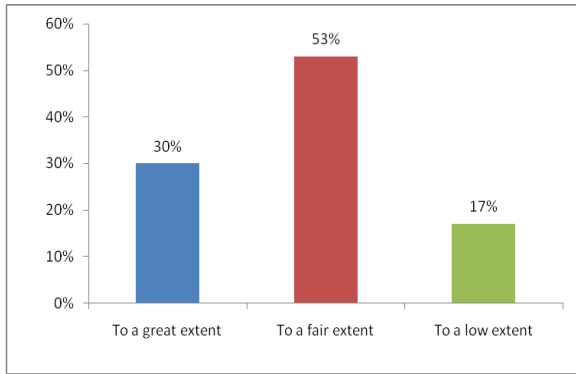
Figure 4.5. Individual responsibility for quality management by Project Managers.

The responses shows that most of the respondents (53%) (n=16) were of the view that the Project Managers were tasked with individual responsibility to ensure the realization of quality standards to a fair extent. The responses denoted the fact that the personal responsibility of the Project Managers as regards enforcement of quality standards was not emphasized on very much.

Table 4.10. Cross tabulation on evaluation of corporate level commitment on quality performance and services and individual responsibility for quality management by project managers.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	32.546ᵃ	4	.000
Likelihood Ratio	32.259	4	.000
Linear-by-Linear Association	19.128	1	.000
N of Valid Cases	30		

a. 7 cells (77.8%) have expected count less than 5. The minimum expected count is .83.

Table 4.10 gave a Chi-square value of $\chi^2 = 32.546$ at a significance level of 0.000. The calculated statistic $\chi^2 = 32.546$ was found to be more than the tabled critical value of $\chi^2 = 32.259$. It can be interpreted that, statistically, there was a relationship between the evaluation of top management on quality performance and services and individual responsibility for quality management by heads of department at $\alpha = 0.83$. It was a confirmation that in the event of individuals being tasked with personal responsibility as regards enforcement of quality standards, the quality performance thresholds may be easily realized. This was in line with previous works carried out by (Oakland, 2003) who was of the position that to be successful in promoting business efficiency and effectiveness, TQM must be truly organization-wide, and it must start at the top with the chief executive or equivalent.

Most of the respondents were of the view that the top executives were actively involved in establishing and communicating the organization's vision, goals, plans, and value for quality programs. The responses denoted a situation where the task of policy formulation and execution as regards quality assurance and management lay with the corporate level commitment within most of the organizations. A significant percentage of the respondents were of the view that the top executives were not actively involved in establishing and communicating the organization's vision, goals, plans, and value for quality programs. The responses were a pointer to the situation of failure to have the top executives synchronizing the ideals of the institutions with the need to achieve the requisite thresholds as regards quality standards. Most of the respondents held the view that the senior executives anticipated change and made plans to accommodate it. The responses reflected enhanced capacity as regards the proactive ability of the senior executives to the aspect of change anticipation and management. Some of the organizations however had the undoing of presence of senior executives who did not anticipate change and plan for it. Most of the respondents confirmed that the senior executives insisted on accuracy and reliability of all information and communications within the organization. The responses were an indication that the organizations had placed high standards as regards minimization of defects and this was going by the high demands on accuracy on all information and communication within the organizations.

Table 4.11. Attributes on corporate level commitment.

		Effects of corporate level commitment on organizational performance		Total
		Yes	No	
Top executives are actively involved in establishing and communicating the organization's vision, goals, plans, and value for quality programs.	Disagree	0	1	1
	Indifferent	0	5	5
	Agree	7	3	10
	Strongly Agree	14	0	14
Total		21	9	30
Senior executives anticipate change and make plans to accommodate it.	Disagree	0	1	1
	Indifferent	0	4	4
	Agree	12	4	16
	Strongly Agree	9	0	9
Total		21	9	30
Senior executives insist on accuracy and reliability of all information and communications within the organization.	Disagree	0	1	1
	Indifferent	0	1	1
	Agree	9	7	16
	Strongly Agree	12	0	12
Total		21	9	30
Top management views quality as being more important than meeting production schedules.	Disagree	0	2	2
	Indifferent	0	3	3
	Agree	12	4	16
	Strongly Agree	9	0	9
Total		21	9	30
We have faith, trust and confidence in our managers and juniors would like to follow them as role models.	Indifferent	0	2	2
	Agree	11	7	18
	Strongly Agree	10	0	10
Total		21	9	30

Most of the respondents held the position that the corporate level commitment viewed quality as more important than meeting production schedules. The responses denoted the essence of quality in the service delivery standards as opposed to the quantity demands geared towards meeting production volumes. It was an indication that the organizations did not attach heavy consideration to the need to make profits in comparison to assuring the clients that the quality thresholds in terms of the service delivery standards were achieved. Some of the respondents however were of the view that their organizations placed a great emphasis on meeting clients' schedules as opposed to offering quality service. Most of the respondents confirmed that they had faith, trust and confidence in their managers and juniors would like to follow them as role models. The responses denoted a situation whereby the top management was emulated by the juniors and they strived to follow it as role models in the wake of undertaking organizational pursuits.

A very insignificant percentage of the respondents were indifferent to the attribute. This was an indication that they did not identify with the capacity of the top management in their organizations as regards fully serving the ideals of the organizations and acting as role models to the juniors. This was an indication that they had failed the test of time as regards setting good examples which could be emulated by all and sundry within the organizational spectrums. This was in line with previous works carried out by (Oakland, 2003) who was of the position that to be successful in promoting business efficiency and effectiveness, TQM must be truly organization-wide, and it must start at the top with the chief executive or equivalent. The most senior directors and management must all demonstrate that they are serious about quality. Deming, (1986) urges that the senior employees must conduct themselves as leaders rather than managers. According to an empirical investigation done on Leadership and Total Quality management of ISO Certified Companies in Sri Lanka Wickramaratne (2005), asserts that senior leaders should serve as role models in planning, communication, coaching, reviewing of organizational performance, and employee recognition. As role models, they can reinforce values and expectations while building leadership, commitment, and initiative throughout the organization.

4.3 Human resource management

Employee involvement is essential for TQM. There must be a commitment and structure to the development of employees, with recognition that they are an asset which appreciates over time. Kasongo & Moono (2010) state that part of the approach to TQM is to ensure that everyone has a clear understanding of what is required of them, how their processes relate to the business as a whole and understand the business and what is going on around them, the greater the role they can play in the improvement process.

Table 4.12. Periodic training needs assessment to ensure sustainable construction projects performance

Response	Frequency	Percent
To a high degree	4	13
To a fair degree	12	40
To a low degree	14	47
Total	30	100

The response as shown in table 4.12 shows that most of the respondents considered the capacity of their organizations in terms of periodic training needs assessment to ensure sustainable organizational performance as low. The responses

denoted a situation whereby the employees may not have been exposed to training based on industry and evolving trends demands but on the whims of the management. It can thus be interpreted to mean that most of the organizations had failed to meet the industry dictates as regards periodic training needs assessment geared towards ensuring sustainable organizational performance.

Oakland (2003) states that quality management is concerned with moving the focus from outside the individual to within; the objective being to make everyone accountable for their own performance, and to get them committed to attaining quality in a highly motivated fashion.
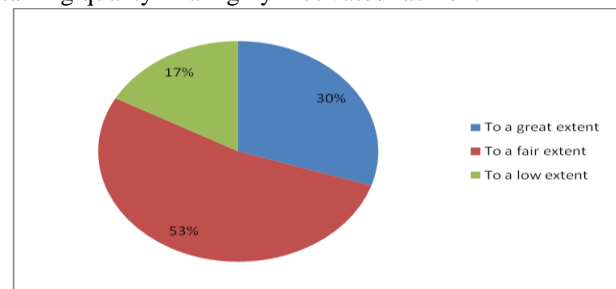

Figure 4.6. Implementation of quality management systems to ensure continuous improvement.

Figure 4.6 shows that most (53%) (n=16) of the respondents considered the implementation of quality management systems standards with a view of ensuring continuous improvement as fair. The responses were reflective of a situation whereby despite mechanisms having had been put in place to implement quality management systems with a view of ensuring continuous improvement, the implementation standards were still deemed below par by most of the respondents. It can be interpreted to mean that most of the respondents drew the consideration that the prevailing quality management systems implementation standards needed to be improved on in the organizations.

Table 4.13. Correlation between periodic training needs assessment and implementation of quality management systems.

Correlations			Periodic training needs assessment	Implementation of quality management systems
Spearman's rho	Periodic training needs assessment	Correlation Coefficient	1.000	.745**
		Sig. (2-tailed)	.	.000
		N	30	30
	Implementation of quality management systems	Correlation Coefficient	.745**	1.000
		Sig. (2-tailed)	.000	.
		N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

A Spearman's Rank Order correlation was run to determine the relationship between the periodic training needs assessment to ensure sustainable construction projects performance and implementation of quality management systems to ensure continuous improvement, which was statistically significant ($rs = .745$, $p = .01$). It could thus be interpreted to mean that in the event of periodic needs assessment conducted by the organizations, implementation of quality management systems to ensure continuous improvement was guaranteed.

Table 4.14. Attributes on human resource management.

		Effects of human resource management on organizational performance		Total
		Yes	No	
The selection and recruitment process in our organization is effective (in terms of the objectivity and 'right man for the right job')	Strongly Disagree	8	6	14
	Indifferent	1	0	1
	Strongly Agree	15	0	15
Total		24	6	30
Promotion and career development programmers emphasize quality management in the organization.	Strongly Disagree	0	1	1
	Disagree	0	3	3
	Indifferent	3	2	5
	Agree	14	0	14
	Strongly Agree	7	0	7
Total		24	6	30
The concept of the 'internal customer', i.e. the next person or process down the line and including all employees, is well understood in this organization.	Strongly Disagree	0	1	1
	Disagree	0	2	2
	Indifferent	0	1	1
	Agree	17	2	19
	Strongly Agree	7	0	7
Total		24	6	30
Communication is open and continues in three directions: up, down and across	Strongly Disagree	0	2	2
	Disagree	0	3	3
	Indifferent	0	1	1
	Agree	10	0	10
	Strongly Agree	14	0	14

The findings identified with Oakland (2003) who stated that quality management is concerned with moving the focus from outside the individual to within; the objective being to make everyone accountable for their own performance, and to get them committed to attaining quality in a highly motivated fashion.

Most of the respondents did not identify the selection and recruitment process in their organization as effective in terms of the objectivity and having the right people for the positions that they merit. The responses reflected the stark reality of failure by organizations to observe merit as the guiding pillar in the recruitment of personnel with a view of ensuring optimal organizational performance. A very significant percentage of the respondents held the view that their organizations placed great emphasis on merit as a standard on which the recruitment of personnel was based on. This saw to it that the organization met the client expectations attributed to the capacity to achieve the ideal standards as regards the service delivery thresholds. Most of the respondents were of the view that the promotion and career development programmes emphasized quality management in the organization. The responses were an indication that the organizations had a great attachment to the essence of quality management as a medium of ensuring promotion and career development programmes for the institutions.

Some of the respondents had a contrary view to the premise of promotions and career progression within the organizations being pegged on the need to ensure achievement of quality management standards. Most of the respondents alluded to the concept of the internal customer being well understood in the organizations. The responses were an indication of the fact that most of the organizations understood the essence of good internal relations which served as a precursor to sound external relations. The practice of having good internal relations was however not practiced in some of the organizations. This was an indication of the fact that they had impaired abilities in terms of ensuring cohesion and realization of corporate citizenship by the membership. Most of the respondents confirmed that communication was open and continued in all directions: up, down and across in their organizations. The responses were a pointer to fully established communication avenues within the organizations with an aim of assuring that all the requisite information was passed to the envisaged persons through the requisite mediums.

However some of the respondents had a contrary view as regards the presence of adequate avenues of communication to guarantee passage of information within the requisite mediums. The responses were a pointer to stifled avenues for communication in some of the organizations. It was an indication of the risk to the failure to fully integrate the communication activities within the organizations to assure the realization of quality management standards. Most of the respondents dissented to the premise of the organization concentrating on ongoing development of personnel by establishing extensive training programs that covered all aspects of TQM. The responses reflected a situation whereby most of the organizations did not engage in training for the personnel on a continuous basis to cover all aspects of total quality management. This negated the essence of continuous improvement by way of investing in the human resource component

The responses can be interpreted to mean that the organizations had failed to exercise prudence as regards investment in the personnel as a medium of ensuring that they changed in line with the evolving trends in the industry.

Some of the organizations were confirmed to have exploited the avenue of continuous training for the employees as a measure of sustained quality management standards achievement. Recognition of employees' achievements is one of the most important factors to motivate employees. Bartol and Abhishek (2002) in a study on encouraging knowledge sharing i.e. "the role of organizational reward systems", assert the key to success in any business to the ability to attract, develop and retain a quality work force.

4.4 Process management

According to Hoyle (2007), all organizations have a way of doing things. For some it rests in the mind of the leaders, for others it is translated onto paper and for most it is a mixture of both. Before ISO 9000 came along, organizations had found ways of doing things that had worked for them. Systems, with all their inadequacies and inefficiencies, enabled mankind to achieve objectives that until 1987 had completely revolutionized society. The next logical step was to improve these systems and make them more predictable, more efficient and more effective- optimizing performance across the whole organization- not focusing on particular parts at the expense of the others. ISO 9000 did require organizations to establish a quality system as a means of ensuring product met specified requirements. (Kolka, 2002).

Table 4.15: Use of a site-wide standardized and documented operating procedure

Response	Frequency	Percent
To a high degree	9	30
To a fair degree	14	47
To a low degree	7	23
Total	30	100

The response as shown in table 4.15 shows that most of the respondents were of the view that their organizations used site-wide documented and standardized operating procedures fairly. This was an indication that the practice of using standardized site-wide documented operating procedures was not fully entrenched in the organizations.
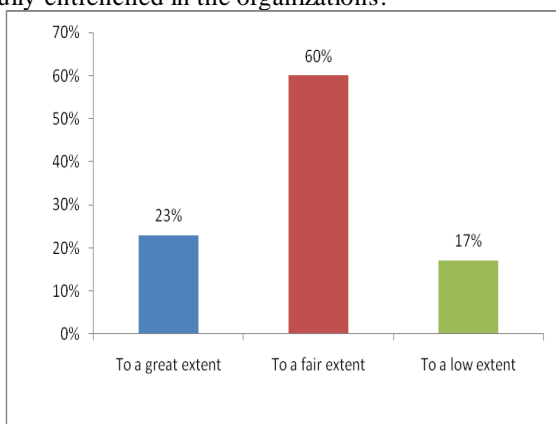

Figure 4.7. Provisions for comprehension of business processes.

Figure 4.9 shows that most (60%) (n=18) of the respondents were of the view that the organizations had put in place fair mechanisms to ensure that the membership fully comprehended the business processes within the organizations. The responses were an indication of the fact that the ability to have the employees comprehending the internal processes had not been emphasized on greatly by the organizations.

Table 4.16. Use of a site-wide standardized and documented operating procedure and provisions for comprehension of business processes.

Correlations			Use of a site-wide standardized and documented operating procedure	Provisions for comprehension of business processes
Spearman's rho	Use of a site-wide standardized and documented operating procedure	Correlation Coefficient	1.000	.865**
		Sig. (2-tailed)	.	.000
		N	30	30
	Provisions for comprehension of business processes	Correlation Coefficient	.865**	1.000
		Sig. (2-tailed)	.000	.
		N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

A Spearman's Rank Order correlation was run to determine the relationship between the use of a site-wide standardized and documented operating procedure and provisions to ensure understanding of all business processes in place within the organization, which was statistically significant (rs = .865, p = .01). It could thus be interpreted to mean that in the event of the organizations having standard operating procedures which guided them the membership was bound to understand all the business processes within the organizations.

This was in line with the position taken by Zakuan, (2012) who opined that TQM generally is the process of ensuring that a product (good or service) continuously meets and even exceeds customer expectations.

Most of the respondents confirmed that their organizations were kept neat and clean at all times. This was an indication that the ideal sanitary provisions and hygienic requirements were met in the organizations. Capacity to assure realization of hygiene and sanitary requirements standards was a pointer to the organizations seeking optimal quality standards achievement in the realms of the organizational outlook and meeting the current best practices. This had the ultimate impact of creating first impressions on the mindsets of the clients and all stakeholders interacting with the organizations.

A very significant percentage of the respondents were indifferent to the premise. This was an indication of the fact that their organizations may have had the challenge of meeting the ideal standards as regards hygiene and sanitary provisions. They may have had the challenge of unkempt premises and facilities which gave a bad impression to the clients. Most of the respondents confirmed that the production equipment was maintained well according to the maintenance plans. This was an indication of the fact that the organizations had placed an emphasis on the maintenance of production equipment with a view of ensuring that all systems within the organizational spectrums operated in a seamless manner.

The use of the Statistical Process Control (SPC) extensively for process control and improvement by the organizations was dissented to by most of the respondents.

Table 4.17. Attributes on process management.

		Effects of process management on organizational performance		Total
		Yes	No	
Our organization is kept neat and clean at all times	Disagree	0	1	1
	Indifferent	0	4	4
	Agree	13	2	15
	Strongly Agree	10	0	10
Total		23	7	30
Production equipment is maintained well according to maintenance plan.	Indifferent	0	2	2
	Agree	17	5	22
	Strongly Agree	6	0	6
Total		23	7	30
Our organization uses Statistical Process Control (SPC) extensively for process control and improvement.	Strongly Disagree	0	1	1
	Disagree	3	6	9
	Indifferent	7	0	7
	Agree	11	0	11
	Strongly Agree	2	0	2
Total		23	7	30
Our processes are designed to be 'fool proof' in order to minimize the chance of employee errors	Disagree	0	3	3
	Indifferent	0	4	4
	Agree	21	0	21
	Strongly Agree	2	0	2
Total		23	7	30
We systematically conduct extensive benchmarking of other organizations' business processes	Strongly Disagree	0	1	1
	Disagree	0	6	6
	Indifferent	4	0	4
	Agree	17	0	17
	Strongly Agree	2	0	2
Total		23	7	30

This was an indication that the organizations had not invested in the requisite statistical calibration and forecasting programmes geared towards ensuring that they improved on their process controls.

A significant percentage of the respondents confirmed that their organizations had invested in the statistical process controls. This was an indication that some of the organizations were adept to the change and had realized the essence of conforming to the demands of the emerging trends as regards quality standards management in their process controls. It can thus be interpreted to mean that the reality of embracing technology as a measure of ensuring that quality management standards were achieved had dawned on some organizations enabling them to adopt statistical process controls. Most of the respondents confirmed that their organizational processes were designed to be 'fool proof' in order to minimize the chance of employee errors. The responses denoted the fact that the organizations had invested in processes that were geared towards ensuring minimal defects attributed to employee errors. It was evidence of dereliction of duty on the part of the organizations as regards the capacity to ensure that they invested in adequate technology to ensure that optimum standards were met.

Most of the respondents affirmed that their organizations systematically conducted extensive benchmarking of other organizations' business processes. This was an indication of the fact that they appreciated the essence of engaging in comparative programmes geared towards borrowing on the good aspects of organizational practices and doing away with those not in line with the ideals of quality standards achievement. It was evidence of per review programmes carried out by the organizations with a view of ensuring that current best practices were achieved and optimized. A very significant percentage of the respondents were of the view that their organizations did not carry out benchmarking activities focused on the improvement of their processes management. The responses denoted impaired capacities on their part as regards the ability to effectively undertake comparative programmes geared towards facilitating the improvement of organizational processes.

5.3 Conclusions of the study

The study drew the following conclusions:

Most of the respondents were of the view that product and service design, development and delivery were based on meeting the needs of the customers. They held the view that a wide variety of mechanisms for customers to contact the organization easily and effectively (e.g. certain phone numbers, email and website) were available. A wide variety of mechanisms for seeking and learning customers' needs and expectations (e.g. focus groups, customer surveys, customer visits and reviews) had been put in place. Complaints processes and guidelines had been established and complaints were properly recorded. The organizations had put in place customer forecast strategies and approaches that were continuously reviewed for further improvement. Customer focus was thus emphasized on by most of the construction companies with a view of enhancing project performance. Responses reflected enhanced capacity as regards the proactive ability of the senior executives as regards the aspect of change anticipation and management. The senior executives insisted on accuracy and reliability of all information and communications within the organization. The top management viewed quality as more important than meeting production schedules. The responses denoted the essence of quality in the service delivery standards as opposed to the quantity demands geared towards meeting production volumes.

Most of the respondents did not identify the selection and recruitment process in their organization as effective in terms of the objectivity and having the right people for the positions that they merit. Most of the respondents were of the view that the promotion and career development programmes emphasized quality management in the organization. Most of the respondents alluded to the concept of the internal customer being well understood in the organizations. Most of the respondents confirmed that communication was open and continued in all directions: up, down and across in their organizations. This was an indication of the fact that there were good avenues of communication which took charge of the dictates for the requirements of internal communications within the organizations. Most of the respondents dissented to the premise of the organization concentrating on ongoing development of personnel by establishing extensive training programs that covered all aspects of TQM. The responses reflected a situation whereby most of the organizations did not engage in training for the personnel on a continuous basis to cover all aspects of total quality management.

Most of the respondents confirmed that their organizations were kept neat and clean at all times. This was

an indication that the ideal sanitary provisions and hygienic requirements were met in the organizations.

Capacity to assure realization of hygiene and sanitary requirements standards was a pointer to the organizations seeking optimal quality standards achievement in the realms of the organizational outlook and meeting the current best practices. Most of the respondents confirmed that the production equipment was maintained well according to the maintenance plans. The use of the Statistical Process Control (SPC) extensively for process control and improvement by the organizations was dissented to by most of the respondents. Most of the respondents confirmed that their organizational processes were designed to be 'fool proof' in order to minimize the chance of employee errors. Most of the respondents affirmed that their organizations systematically conducted extensive benchmarking of other organizations' business processes.

5.4 Recommendations of the study

The study recommended that the construction companies undertaking projects should seek to place greater emphasis on customer focus. This is by way of always aligning their quality management practices and ethos on the clients with a view of seeking to ensure maximum satisfaction and repeat buying. It may have the net effect of sustained growth and ensured industry standards as regards the ability to infuse quality as a measure of self regulation.

The study recommended that the corporate level commitment in the construction industry should seek to always lead by example and from the front in the wake of seeking to enforce quality standards. This is by way of having them emulated and extolled by the fellow employees in the quest of seeking to ensure that set standards are met. This may have the effect of trickling down to the organizations and influencing positive change impacting heavily on the overall construction projects performance.

The human resource management programmes in place should always be reflecting the essence of getting the best in terms of projects performance by the construction companies. This can only be achieved at the event of ensuring that only persons meriting the positions are put into them and have systems of rewards that are in sync with the expectations of the membership. This may positively weigh heavily on the ability to ensure that the construction projects ideals are realized and exceeded.

The need for construction companies to exploit technology as a medium of ensuring that the internal processes are optimal is equally of great essence. This can be achieved by way of having construction companies exploit technology in the management of their internal processes and calibrations. This may see to it that the defects are minimized and the clients derive the best out of their interactions with the construction companies.

5.6 Suggestion for further studies

The study suggested that research should be conducted on role of established regulatory authorities like the National Construction Authority (NCA) in ensuring construction projects are implemented with regard to set standards.

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