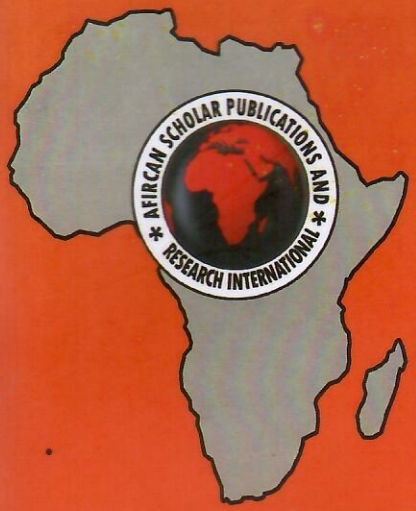

ATBU 2019

20TH MULTI-DISCIPLINARY ACADEMIC CONFERENCE

BOOK OF PROCEEDINGS

THEME:

African Continent in the Fast-moving World: New Strategies and Approaches

VENUE:

1000 Capacity Hall, Abubakar Tafawa Balewa University, Yelwa Campus, ATBU, Bauchi, Bauchi State, Nigeria.

12th DECEMBER, 2019

African Scholar Publications and Research International

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ASSESSMENT OF CHALLENGES OF TQM IMPLEMENTATION IN THE MAINTENANCE OF TERTIARY INSTITUTION BUILDINGS

MUHAMMMAD UMAR SANTALI, and BASHIR O. GANIYU
Department of Quantity Surveying, Federal University of Technology, Minna

ABSTRACT

Total Quality Management (TQM) is inevitably common factor that will shape the strategies of higher educational institutions in their attempt to satisfy various stakeholders including students, parents, industry and society as a whole. Countries quality management research and implementation are at a more developed stage relative to other countries or regions especially Africa, and the Middle East and can invariably be due to lack of information about the nature and stage of quality management practices in these regions. It is on this basis the study examine the factors affecting the implementation of TQM in Minna, Nigeria. the employed simple random sampling techniques to select professional management staff through closed ended questionnaires. The study utilized descriptive analysis through relative important index, the result showed that Lack of vision within the maintenance department and lack of worker participatory in policies formulation were major factor influencing the implementation of TQM application. The study concludes that careful application of TQM is fundamental to sustainable maintenance of tertiary institution building.

INTRODUCTION

Quality has been recognized broadly as one of the key factors to success in the global market for all kind of business. Quality is described as products' or services' totality of features and characteristics which can support its ability to fulfill both listed or implied requirements (Tam, 2000). Total Quality Management (TQM) is inevitably common factor that will shape the strategies of higher educational institutions in their attempt to satisfy various stakeholders including students, parents, industry and society as a whole. Total Quality Management is a quality management system which pursues excellence in customer satisfaction through continuous improvements of products and process by the total involvement and dedication of everyone involved in the process or the products (Chase et al., 2001). The importance of education for the development of excellence, expertise and knowledge leading to overall development in economy cannot be undermined. This has necessitated a sound strategy for the development of higher education in almost all countries of the world. TQM is the process of changing the fundamental culture of an organization and redirecting it towards superior product or service quality. TQM can be defined as a general management philosophy and a set

of tools w hich allow an institution to pursue a definition of quality and a means for attaining quality, with quality being a continuous improvement ascertained by customers' contentment with the services they have received (McAdam & Kelly, 2002).

Tertiary institution building maintenance is an integral component of its educational programmes. Xaba (2012) indicates a strong link between the quality of school buildings and learner achievement. Building maintenance as a combination of any actions required to retain an item, or restore it to an acceptable condition. The significance of facilities maintenance to the functionality of tertiary institutions' is universally recognized, to the extent that many educational departments have dedicated structures responsible for the maintenance and management of their buildings and facilities (Szuba & Young, 2003).

Maintenance as work undertaken in order to preserve, restore or improve every building or facility, as well as its services and surroundings, to presently-acceptable standards so as to sustain the utility and value of the facility. Tertiary institution building maintenance is a critical aspect of teaching and learning, school facilities maintenance has not been given sufficient priority. School administrations have experienced a lot of setbacks in the maintenance of buildings, due to several bottlenecks. Several studies indicate that most schools' administrative functions, including maintenance, are complex in nature and require special skills to execute (Chaka, 2008). Many challenges in the implementation of TQM during building maintenance have been identified, namely lack of proper planning and lack of an appropriate administrative culture supportive of TQM. Other barriers were further identified as: lack of customer focus, poor management commitment and involvement, lack of employee empowerment and training, drive for short-term financial outcomes, politics and turf issues, as well as availability of resources (Owolabi & Amusan 2014). It is on this basis that this study identifies challenges to the implementation of total quality management in maintenance tertiary education building; this will help in determining the extent of implementation TQM in the maintenance of tertiary institution building.

LITERATURE

Challenges in the implementation of TQM in Tertiary Institution

According to Skitti (2009) it is crucial to observe that in the TQM process, certain factors inhibit successful implementation. The task of implementing TQM is not an easy one, as it requires a shift of responsibilities to the management and continuous participation of all members of the organization in the process of improving quality. Salagean *et al.* (2014) explain that TQM implementation is a difficult and complex process that requires huge effort from organizations. Reports of the variances in the

success and failures of such processes are well documented (Dahlgaard, 2006:66; Arshida & Agil, 2012; Huq and Marti, 2005).

According to Huq and Marti (2005), there are several reasons for TQM implementation failure, but the majority of the cited causes arise from management's inability to implement a total system. A larger share of the barriers and difficulties of implementing TQM have substantial connections to the people that affect quality directly or indirectly (Obaid, 2005). The study further identify some roadblocks in the implementation of TQM as lack of adequate resources, fear of change, overlapping of leadership responsibilities and lack of management participation.

Walsh, Hughes and Maddox (2002) identify the dominant challenges in TQM implementation as being management behaviour, cultural change, time availability, enhancing service and obtaining tangible benefits. Obaid (2005) explains that lack of commitment on the part of the management and poor management behaviour appears to be the prevalent cause of failure of TQM initiatives in maintenance. Rohitratana and Boon-itt (2001) argue that two significant barriers in the TQM implementation process are lack of knowledgeable personnel, and lack of support and co-operation from the staff, both of which habitually result in impediments.

Amar and Zain (2002) list 11 elements discovered to be barriers against the successful implementation of TQM: human resource, management, attitude towards quality, organisational culture, interdepartmental relations, materials, machines, equipment, information, method, and training. In addition, it was also found the following elements resulting in ineffective TQM implementation; weak comprehension of TQM, lack of management commitment, inability to change organisational cultures, lack of accuracy in quality planning, absence of continuous training and lack of sufficient resources.

Pheng and Jasmine (2004) classified the challenges of TQM implementation into four main categories: infrastructure challenges, which include insufficient quality of training, lack of recognition and rewards, underdeveloped quality measures and lack of TQM expertise. Cultural and employee challenges include change of culture, resistance to change, lack of employee commitment and involvement, and lack of confidence by employees. Managerial barriers include lack of top management commitment, lack of defined vision and mission, and lack of effective leadership. Organisational barriers are also listed as consisting of poor internal and external communication network, and organisational policy.

Soltani (2014) indicates that various researchers and academics have made attempts to give reasons concerning why the rate of TQM failure is high. Ater (2013) reports that for TQM to be successful, the commitment and support of top management is important. Pheng and Jasmine (2004) further explain that the level of support top management shows in the implementation of TQM is crucial for the implementation of TQM to be successful. Top management's commitment to TQM assists workers or

employees to follow their lead and leadership. The study further argues that the implementation of TQM in hospitals in India is influenced by quality improvement and top management disposition and involvement.

Viera (2009) further detects six challenging factors in the implementation of TQM in the healthcare industry: technical competence, quality structure, leadership, organisation design, organisation culture and top management involvement. The study illustrates the following challenges that are experienced in the implementation of TQM; lack of adequate training, complacent team attitude, insufficient resources, weak labour force, lack of top management commitment and poor planning.

According to a study conducted by Hamiidi and Zamanparrar (2008), the major barrier encountered during the implementation of TQM is lack of commitment on the part of top and middle management. Emphasis is placed on top management commitment and the creation of a befitting and supportive organisational culture. Without these, there will be little or no progress during TQM implementation. It was also discovered that in most organisations, lack of top management commitment was identified as a crucial element that led to unsuccessful TQM implementation.

Mosadeghrad (2014) points out that studies carried out since the 1990's have displayed a very high level of failure in TQM implementation. Mosadeghrad (2014) categorises the challenges experienced during the implementation of TQM into five groups:

1. Structural Challenges: these deal with the physical resources and structures present during the implementation of TQM. They include: inappropriate organisational culture, lack of financial resources, non-existence of information systems and lack of physical resources.

2. Contextual Challenges: these obstacles arise as a result of the culture of the organisation itself militating against successful TQM implementation. They include poor organisational culture, lack of teamwork, poor and ineffective communication networks, lack of innovation and lack of co-ordination amongst employees.

3. Strategic Challenges: these challenges are related to organisational leadership. They are significant barriers and are a strong impediment to the success of TQM programmes. They include lack of clear vision, poor leadership, lack of support from top management, poor planning, inconsistent objectives and lack of adequate TQM programmes.

4. Procedural challenges: these challenges arise from the difficulty and complications of the processes themselves. They include inadequate process management, lack of customer focus, lack of proper supplier relationship, lack of framework for review and self-evaluation, ineffective corrective procedure and bureaucracy.

5. Human resources Challenges: these barriers are caused by human related factors such as employee resistance to change and lack of employee involvement. They include lack of employee involvement and commitment, employee resistance to change, lack

of education and training of employees, lack of employee recognition and rewards, lack of employee motivation and satisfaction and poor human resource management.

Factors Influencing the Effective Implementation of TQM

With regard to the critical success factors for the effective implementation of TQM, no universal factors are in existence. Critical success factors have a huge impact on customer satisfaction and they vary among organisations. The effectiveness of these factors has a long-term effect on the sustainability of TQM (Idris & Zairi, 2006). Critical success factors should be linked with the goals of the organisation, since most organisations fail to practice them, despite being aware of the importance (Yusof & Aspinwall, 2000).

Fotopoulos and Psomas (2009) present seven critical success factors for the implementation of TQM: leadership, process management, service design, human resource management, customer focus, education and training, and supplier quality management. The study identifies ten critical TQM success factors based on the Baldrige Award criteria, and these factors are: people and customer management, supplier partnership, customer satisfaction orientation, communication of improvement information, strategic quality management, external interface management, team structure of improvement, corporate quality culture, operational quality planning and quality improvement measurement systems.

Viera (2009) also propose that continuous training enhances employee knowledge about the mission, vision, direction and structure of identify 12 factors that are important for the implementation of TQM, and these factors are: top management commitment, customer focus, supplier quality management, design quality management, benchmarking, use of statistical process control, internal quality information, employee empowerment, employee involvement, employee training, product quality, and supplier performance.

Antony, Leung, Knowles and Gosh (2002) suggest the following factors should be considered when implementing or developing an efficient TQM plan: (1) Training and education of employees, (2) Employee Involvement and commitment, (3) Communication, (4) Continuous Improvement, (5) Management Commitment and Leadership, (6) Commitment to Customer Satisfaction (7) Reduced cost of poor quality, (8) Improved competitive advantage (9) Service design.

METHODOLOGY

The population for the study comprised of the maintenance team members at a tertiary institution in Minna. A structured questionnaire survey is used to collect primary data for this study. the study used closed ended questionnaires to collect information from the respondents. The purposive or census sampling method was adopted in this study.

the descriptive statistics used are frequency distribution and measurement of central tendency (mean, relative important index (RII). Based on limited number of number maintenance staff in Minna tertiary institution, 55 maintenance staff of tertiary institutions in Minna was selected using random sampling technique.

RESULTS

Table 1 Demographic Information of Respondents

Demographic Information of professional stakeholders presented in Table 1 revealed that 90.9% majority comprised of male, 61.8% had their first degree, with 11years to 20years professional experience.

Demographic Stakeholders	information	of	Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male		50	90.9	90.9	90.9
	Female		5	9.1	9.1	100.0
	Total		55	100.0	100.0	
Educational qualification	ND/NCE		3	5.5	5.5	5.5
	HND/B.SC		34	61.8	61.8	67.3
	M.sc/M.tech		15	27.3	27.3	94.5
	Phd		3	5.5	5.5	100.0
	Total		55	100.0	100.0	
Year of experience	10yrs below	and	4	7.3	7.3	7.3
	11-20yrs		37	67.3	67.3	74.5
	21yrs Above	and	14	25.5	25.5	100.0
	Total		55	100.0	100.0	

Source: field survey, 2019

The professional composition of respondent presented in figure 2 showed the professional affiliation of the respondents. 58% majority of sampled built professional were builders, followed by 25% of the sampled architecture and 10% represented quantity surveyors. While 5% and 2% represented civil engineer and estate surveyor respectively.

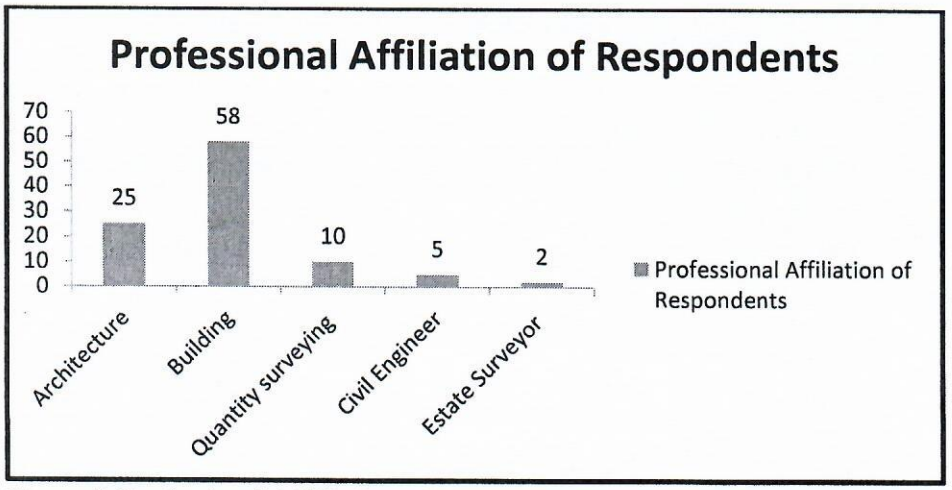

Figure 1: Professional Affiliation of Respondent

The experience of challenges in TQM application is presented in figure 2. 91% of the respondents had experience challenges in application of TQM. While 9% have not encountered any challenge. This showed that majority of the professional had encountered challenges in TQM implementation maintenance and construction of the project.

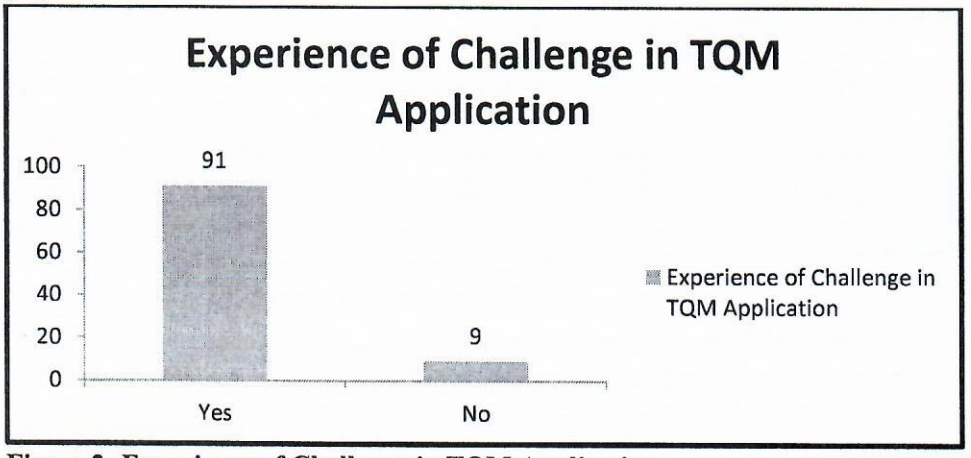

Figure 2: Experience of Challenge in TQM Application

Table 2 Extent of Application TQM Tools

The result of extent of application TQM is presented in table 2 revealed the result of five-point likert scale (Always-5, Often-4, Sometimes-3, rarely-2, Never-1). The result of raking through relative important index (RII) showed that quality assurance and cost-benefit analysis is ranked 1st and 2nd the applied TQM tools used in tertiary institution in Minna at relative occurrence at 98% and 96% respectively. Nominal technique, plan

quality and force field analysis were among the most applied tool of total quality management. The result of ch-square statistics revealed that the respondents were not significantly related in the level of application of total quality management technique as p-value (0.123) is significantly higher than 0.05.

Extent of Application of TQM Tools	N	Sum	Mean	RII	Rk	Chi-sq	p-value
Cost benefit analysis	55	263	4.79	.96	2	2.44	0.123
Cost of Quality	55	241	4.38	.88	8		
Control Chart	55	244	4.43	.89	7		
Suggestion scheme & Benchmarking	55	249	4.52	.91	5		
Flowcharting	55	243	4.41	.88	6		
Brainstorming	55	246	4.47	.89	5		
Quality assurance	55	270	4.90	.98	1		
Plan quality	55	257	4.67	.94	3		
Risk register	55	245	4.45	.89	6		
Schedule baseline	55	209	3.80	.76	3		
Experimental design	55	202	3.67	.73	10		
Affinity diagrams	55	209	3.80	.76	9		
Force field analysis	55	257	4.67	93	3		
Nominal technique	55	251	4.56	91	4		

Table 3 Factors Influencing The Implementation Of TQM In The Maintenance

The result of factor influencing the implementation of TQM in the maintenance of tertiary institutions is presented in table 3. The result of five point likert scale showed the ranking of factors influencing the implementation of TQM in relative important order. The result revealed that lack of vision within the maintenance department and lack of worker participatory in policies formulation were ranked 1st and 2nd the most important factors influencing the implementation of TQM at 94% and 93% . Lack of clear objectives from top management to guide maintenance activities, Workers lack expertise in management of quality and Non-involvement of maintenance workers in the decision-making process were among other factors have been identified as most important factors at 91%, 91% and 89% respectively. the result of chi-square revealed that the opinion of respondents on the identified factors were significantly related at p-value (0.000) is significantly less than 0.05.

Factors	N	Sum	Mean	RII	Rk	Chi.sq	p-value
Resistance from supervisors to implement approved ideas during the execution maintenance activities.	55	233	4.2364	.85	7	18.44	.000

Non-involvement of maintenance workers in the decision-making process.	55	245	4.4545	.89	4		
Lack of sufficient training and education on quality in the maintenance department	55	209	3.8000	.76	9		
Insufficient communication network within the maintenance department.	55	202	3.6727	.73	10		
Top management in the maintenance department does not have sufficient knowledge of maintenance activities	55	209	3.8000	.76	9		
Maintenance workers are not involved in the formulation of policies that directly affect their jobs	55	257	4.6727	.93	2		
Workers lack expertise in management of quality in their maintenance activities.	55	251	4.5636	.91	3		
Lack of support from top management towards the improvement of the quality maintenance process.	55	244	4.4364	.87	6		
Lack of clear objectives from top management to guide maintenance activities.	55	250	4.5455	.91	3		
Lack of understanding amongst between workers during the execution maintenance activities.	55	239	4.3455	.86	5		
Lack of vision within the maintenance department	55	259	4.7091	.94	1		
Lack of focus on school stakeholders in the implementation of maintenance activities.	55	274	4.1822	.84	8		
Lack of human and financial resources to support maintenance activities	55	209	3.8000	.76	9		
Valid N (listwise)	55						

FINDING AND CONCLUSION

The study found that larger percentage of sampled professional had experienced the challenges associated implementation of total quality management (TQM) in the maintenance of tertiary institution building. The result further found that quality assurance and cost-benefit analysis were most commonly used TQM tools among maintenance staff sampled in tertiary institution in Minna with high relative occurrence level. The study found out that lack of vision within the maintenance department and lack of worker participatory in policies formulation were major factor influencing the implementation of TQM application. Also, Lack of clear objectives from top management to guide maintenance activities, workers lack expertise in management of quality and non-involvement of maintenance workers in the decision-making process were among other factors have been identified as most important factors

influencing the implementation of TQM application. The study concludes that careful application of TQM is fundamental to sustainable maintenance of tertiary institution building.

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Challenges	always	Often	Sometimes	rarely	Never
Resistance from supervisors to implement approved ideas during the execution maintenance activities.					
Non-involvement of maintenance workers in the decision-making process.					
Lack of sufficient training and education on quality in the maintenance department					
Insufficient communication network within the maintenance department.					
Top management in the maintenance department does not have sufficient knowledge of maintenance activities					
Maintenance workers are not involved in the formulation of policies that directly affect their jobs					
Workers lack expertise in management of quality in their maintenance activities.					
Lack of support from top management towards the improvement of the quality maintenance process.					
Lack of clear objectives from top management to guide maintenance activities.					
Lack of understanding amongst between workers during the execution maintenance activities.					
Lack of vision within the maintenance department					

Lack of focus on school stakeholders in the implementation of maintenance activities.					
Lack of human and financial resources to support maintenance activities					