Quality Management Practices of Building Construction Firms in Project Delivery in Anambra State, Nigeria

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Abstract: - This study aimed at assessing Quality Management practices of Building construction companies in Anambra State, Nigeria. Data for the study were obtained through well structured questionnaire administered to staff and management of Building Construction companies in the study area registered with Corporate Affairs Commission. Data collected were analyzed using descriptive statistics such as tables, percentile and mean score index. The study indentified 12 groups of factors of Quality management practice of Building construction firms with; management reviews quality issues in management meetings, promote teamwork among employees and labours, and Management responds effectively to client's enquiries and complaints as the most significant. Also, the study found out that absence/lack of site meetings with clients, lack of workers motivation, lack of quality units, lack of material test and lack of implementation of standard quality management system affects quality management in the study area. Based on this, the study concludes by recommending that there is need to develop a well and clearly defined QM strategy which must be duly communicated from the top to the lowest level management including construction site operatives in the study area.

Key Words: — ***Quality Management, Quality Management practice, Building Construction firms.***

I. INTRODUCTION

The importance of building facilities to man cannot be overemphasized: hence the management of the service providers must not be left at the mercy of inapt organizations but should be properly guided in line with the world best practice. Despite the contribution of building facilities' providing industry to man and the nation's economy at large, the industry still lags behind in delivery of quality products that meets the ever-changing clients' requirements. According to the study of Hoonakker (2010); Marasini and Quinnel (2010) the construction industry has been widely criticized for its low quality of delivery of construction projects.

Manuscript revised October 31, 2021; accepted November 01, 2021. Date of publication November 02, 2021.
This paper available online at www.ijprse.com
ISSN (Online): 2582-7898; SJIF: 5.494

Perhaps, the collapse of an uncompleted 3-storey building and a 2-storey building at Miracle Junction axis, Ifite-Awka in 2019 and also the collapse of 4 storey buildings each at No 7 Ngene Street, Okpuno, and Ifite-Amansea Road, near Unizik Rear Gate both in Awka South on 15th July and 16th September, 2019 respectively could be attributed to absence or ineffective quality management practice.

In light of the above there is dire need for construction companies in Anambra state to redress this issue of poor quality to enable them compete favourably with their counterparts in the global market and still remain in business while meeting their clients' needs and expectations. For this to be achievable the construction companies must engage in production of products that meet the specified needs and expectations of their clients. Thus, it is pertinent to bear in mind according to Salaheldin (2008); Wanderi (2015) that the current market is stiffly competitive with ever changing customer requirements, an organization must come up with unique competitive strategies and produce goods and services that continuously meet and exceed these demand and expectations. Perhaps, the

competitiveness of the building construction market might have led construction companies in developed economies of the world to incorporate quality management in the management of their firms as their clients are unrelently moving forward in their demand for improved quality service, faster building and innovations in technology. According to Okuntade, (2015) unprecedented changes are occurring in the construction industry, in the techniques, skills, methodology and most especially the expectations and attitudes of clients toward the end product of their building project.

In order to mitigate the adverse effects of globalisation and compete favourably with firms from developed nations, Khan (2004) emphasized that developing countries should adapt certain policies including developing the local industry, maintaining good governance, keeping performance monitoring systems, training labour to cope with the challenges of open economy and acquiring new technological skills. The study of Hoonakker, Carayon and Loushine (2010) asserted that 'it is no accident that the construction industry has turned to the manufacturing sector as a point of reference and source of innovation. Thus, the adoption of Quality Management practice by building construction companies in study area will not only enhance their service delivery but increase their competitive advantage, profit margin, clients' satisfaction and clients' loyalty, and reduce rate of rework and delays. Based on this, this study assessed the quality management practice of building construction firms in the project delivery in the study area.

II. LITERATURE REVIEW

2.1 Quality Management Practices in Construction firms:

The concept of quality management in construction firms is not a one off activity or process but knotted with top management processes of the organization. (Osho, 2019; Tang, Ahmed, Aoicong and Poon, 2005). This implies the activities of QM are not limited to a single activity but series of activities in the value chain with serious commitment from top management to every employee in the organization. Quality management system (QMS) is defined as "all activities of the overall management function that determine the quality policy, objectives and responsibilities, and implement them by means such as quality planning, quality control, quality assurance and quality improvement within the quality system" (MS ISO 8402, 1994) while a Quality System is defined in BS, EN, ISO 8402 as "Organizational structures, procedures, processes and resources for implementing QM".QMS could be said to be a structured collection of policy, procedures, processes and their associated responsibilities integrated to ensure continual improvement of business operations with the full involvement of top management.

Furthermore, Abdullahi, Bustani, Hassan, and Rotimi (2018); Smallwood and Rossouw (2008) opined that Quality Management System can also be defined as a continuing process of improvement involving all aspects of the business. It is important to note that QMS have become a major attention in businesses within the construction firms. The study of Mane and Patil (2015) affirmed that QMS have become the focal points in businesses within the construction industry when he opined that QMS could be implemented either at the organizational level or at the project's level itself. According to Hoonakker *et al.* (2010) QM is important for the delivery of a project with zero defects. It is required for a construction firm that seeks to sustain itself in the current construction market which is highly challenging and competitive.

The primary aim of Quality Management System in construction is to prevent mistakes from occurring thereby getting tasks right at the first attempt. It is a process to follow in reducing errors in work. Abdullahi *et al.* (2018); Abdulrahman (1996) emphasized that minimizing errors/mistakes during the delivery of goods and services is possible with the introduction of formal quality management systems to plan, monitor and control production processes.

The study of Liu (2003); Ashokkumar (2014);Hoonakker *et al*. (2010); Pheng and Wee (2001); McIntyre and Kirschenman (2000); Kiuus and Williams (2001); Turk (2006); Watson and Howarth (2011); and Ofori, Gang and Briffet (2002) emphasized that the practice of quality management can speed up projects and increase profitability, help to satisfy clients, reduce the number of defects in projects, reduce rework, bring competitive edge for firm and help to complete project within budget, improve construction firm's reputation, help firm get continued business or work from clients, improve schedule performance, improve relationships with the consulting architects and engineering firms, increase buildability factors of projects, increase efficiency in using materials, promote control of suppliers and subcontractors, reduce inspection costs, contribute to an increase in product quality, improve workmanship and efficiency, decrease wastage, and improve organizational communication; minimize material wastage, cost overrun and delay and can be used to address clients' requirements. These activities are normally management driven and integrated into a system. This is known as the systems

approach to managing quality and people are required to participate or are inspired to participate.

However, the absence of effective quality management procedures, considerable time, and resources are wasted every year resulting to client's dissatisfaction (Mane and Patil 2015). Thus, the construction industry has been widely criticized for its low quality of delivery of construction projects (Hoonakker 2010; Marasini and Quinnel, 2010). Perhaps, the deplorable state of existing buildings both public and private own could be attributed to this menace. The study of Al-Musleh (2010); Maysoon (2015) emphasized that companies in the construction industry provide infrastructure for the economy, yet they face problems of instability, low productivity, poor quality and lack of standards in the face of high fragmentation in the industry. That's why significant time and cost is expended in correcting problems during and after construction of the building and majority of the projects either suffer from time overrun or cost overrun or both and above all client dissatisfaction. The continuation of this menace in recent time led the Chartered Institute of Building (CIOB) (2019) to state that the poor quality is costing the industry annually more than the combined profits of the large construction companies in the industry. The inability to pass into law the National Building Code which specifies minimum standards for building construction processes with a view to ensuring quality, safety and proficiency in the building construction industry in Nigeria for years now has aggravated the issue of poor quality in the project delivery process. Maysoon (2015) states that also, the issue of lack of understanding of the quality systems that could be implemented in the construction industry to improve not only the end products but also the processes and the overall system. This issue lingers due to ignorance of benefits derivable from application of an effective quality management strategy.

In the study of Shittu *et al.,* (2013) it was observed that a very serious safety problem facing Nigeria is the problem of defect in building as a result of poor quality materials and workmanship which leads to fatal site accidents due to building collapse. Poor workmanship leads to building construction defects. It results in loss of resources in terms of money and material, time, labour etc which leads to client dissatisfaction and project delay, rework, waste, abandonment and building failure as well. In order to establish the existence of poor workmanship, one must compare the quality of the work done with the specification requirements as defined by the parties and in the absence of specific contractual terms, one must rely on the applicable standards in the building industry.

Workmanship is the skill and competence applied in executing a specified task. It is centred on quality; good or bad, if workers are careless or fail to follow proper protocol in achieving a job the project usually ends up with poor quality. In Anambra state, there is dearth of quality workmanship due to most youth are not patient enough to go through the learning process of acquiring skills in the building construction industry. This is as a result of the quest for white collar jobs and get rich quick syndromes resulting to shortage of skilled man power in the industry with most of the current skilled personnel aging out. The influx of foreign nationals such as Togolese, Beninese, Ghanaians etc in the state construction sites are clear indication of shortage of skilled man power thus poor workmanship. The indigenous building construction companies in Nigeria are not living up to expectation as well in terms of management and supervision of materials and labour hence the entrance of poor quality and ineffective quality management practices experienced in the industry.

Also, one other significant issue in Anambra state is the issue of inferior quality materials. This issue results mainly from engaging the services of construction companies based on the lowest bid without considering the firm's technical knowhow and most of these firms end up compromising on the project quality to the detriment of the project both in terms of the standard of building materials used and quality of workmanship with the view to cut cost. Most of these companies end up cutting cost to increase profit margin thereby delivering on poor quality products. A good number of these firms usually lack competent and experienced hands due to their lack of effective personnel management and transit nature of the industry. Also, the increasing cost of building materials in recent time is worrisome and has resulted to proliferation of poor quality materials in the building materials market which has further lowered building quality in Anambra state resulting to building defects/failure in most cases.

The most worrisome issue bedevilling the Nigerian building industry in recent time is the incessant rate of building collapse ravaging lives and properties across the nation most especially in Anambra state after Lagos. The study of Dimuna (2010) and Ede (2010) pointed out that the frequency of building failures and in extreme cases, building collapse in Nigeria has become alarming and worrisome. In a recent study conducted by Agbenyega (2014); Oyegbile *et al.* (2012) it was revealed that over the last 10 years, the incidence of building collapse in

Nigeria has become so alarming and does not show any sign of abating. 2019 National Bureau of statistics alone shows that Nigeria recorded 43 collapsed cases resulting to 66 deaths and 174 injured of which Anambra state had the second highest number of building collapse cases. See **Table 2.1** for details of collapsed buildings.

The building collapse syndrome in Nigeria especially in Anambra state is ascribed to compromise on qualities either due to the use of substandard materials, faulty design in place and constructing on ground with low load bearing capacity without taking cognizance of it, poor workmanship, quackery and above all greed, bribery and cankerworm of corruption which has eaten deep into the fabric of our beloved nation. These issues

Table.1. Lists of Collapsed Buildings in Anambra State from 2014 - 2019.

S/N	Date of collapse	Site Location	Local Government	No. of floors
1	2014	No 10 Udi Obanye Street Fegge Onitsha	Onitsha south	6
2	2/6/2014	St. Andrew's Anglican Church Odoakpu Onitsha	Onitsha North	5
3	5/7/2014	No. 8 Alloy Offia Street, Mgbuka Nkpor	Onitsha North	5
4	5/10/2014	Ezi-ora village, luxury apartment Adazi-ani	Anaocha	4
5	27/07/2015	Tony Eze Street, Owelle Aja, Obosi	Idemili North	5
6	27/07/2015	No. 1 Chief Charles Ezeoke street, off Abakiliki street, Awka	Awka South	4
7	August, 2015	Standard Plaza Unizik Temporary Site, Awka	Awka South	4
8	22/05/2016	Permanent Site Federal Polytechnic, Oko	Orumba North	4
9	28/05/2016	Close to Wonderland Hostel, AmawaAmaokpala.	Orumba North	4
10	June, 2016	Adazi-Nnukwu	Anaocha	
11	June, 2016	Amaokpala	Orumba North	4
12	June, 2016	Near Eke Market, Agba Ekwulobia	Aguata	3
13	13/07/2016	Okeleuche layout Ikenga Ogidi	Idemili North	2
14	30/07/2016	Agbani village behind second market, Ifite Awka	Awka South	3
15	04/08/2016	Oko village.	Orumba North	4
16	2016	Tetfund-building at Federal Polytechnic, Oko	Orumba North	4
17	Jan. 2017	Ihengwu village, Oko	Orumba North	4
18	15/06/2017	Behind Eke market, Oke-ani village Oko	Orumba North	
19	22/06/2017	Road 15 Udoka Housing Estate, Awka	Awka South	4
20	17/07/2017	St. Augustine Cath. Church, Ichida (Partial collapse)	Anaocha	4
21	23/07/2017	Frank Chinweike Str., Owelle Aja, Obosi(Partial)	Idemili North	3
22	17/09/2017	Umuchiana village, Ekwulobia	Aguata	4
23	Nov. 2017	Orlu – Ihiala road before Ubulu-isiuzo village junction, Ihiala	Ihiala	2
24	Nov. 2017	Close to Odogwu Hostel Amansea –Awka	Awka South	4
25	08/01/2018	Opposite Otuocha local stadium Aguleri	Anambra East	4
26	04/04/2018	Oba airport land, Oba	Idemili South	3
27		Ifite Amansea Road Unizik Perm Site, Awka	Awka South	4
28	16/07/2018	Off Tony Eze Str. Owelle-Aja L/out Obosi	Idemili North	4
29	29/07/18	Umuatulu Ifite Ani Village Enugwu-ukwu	Njikoka	3
30	30/07/18	First Market Ifite Village Awka	Awka south	4
31	4/10/18	Near yahoo junction, Ifite Awka	Awka south	4
32	18/10/18	Okpuno Otolo Nnewi	Nnewi North	4
33	22/05/19	No 38 Ogalonye Street off New Market Road, Onitsha	Onitsha North	4
34	24/05/2019	Partial collapse at 44 Modebe Avenue, Odoakpu Onitsha	Onitsha North	2
35	15/07/19	No 7 Ngene Street, Okpuno, Awka South	Awka South	4
36	16/09/19	Ifite-Amansea Road, near Unizik Rear Gate, Awka.	Awka	4

Source: Anambra State Materials Testing Laboratory (ASMTL) Awka, Nigeria (2020).

has linger for long in Anambra State, according to Abdulkareem and Adeoti (2010); Lawal, (2000); Zubairu (2016) because of the problem of the technical professional bodies and allied government agencies have not really focused on the quality management of construction projects in such a way as to have a statistical base on the state or status of their quality management implementation.

The absence of effective quality management system in our building projects delivery perhaps could be attributed to the incessant collapse of buildings in our nation as evidence in table 2.1.

III. METHODOLOGY

This study was carried out in Anambra State, Nigeria, using a survey method. The name Anambra was derived from the Anambra River (Omambala) which flows through the area and is a tributary of the River Niger. Anambra State is a south-eastern state and one of the 36 states of Nigeria. It's bounded by Delta State to the west; Imo State and Rivers State to the south, Enugu State to the east, and Kogi State to the north (see Fig. 1). There are twenty-one (21) local government areas in Anambra State and 4 majors' urban centres as Onitsha, Nnewi, Awka and Ekwulobia (see Fig 2). Anambra is the eighth-most populated state in the Federal Republic of Nigeria and the second-most densely populated state in Nigeria after Lagos State (Ezeokoli, Onyia and Bert-Okonkwor, 2019). It has an estimated average density of 1,500–2,000 persons per square kilometre and over 60% of its people lives in urban areas. It is one of the most urbanized states in Nigeria. The state is well known for possessing high number of construction works as well as high number of various sizes of construction firms. The target population for the study comprises of the totality of building construction companies in Anambra registered with Corporate Affairs Commission of Nigerian while the population of the respondents were obtained from the office of the Anambra state Bureau of Statistics, Awka. In this study, the formula provided by Taro Yamane (1967) was used to generate the sample size. A total of one hundred and eighty questionnaires (180) were administered to different construction companies, out which one hundred and twenty (120) were returned for analysis thus representing 66.67% of the population. The structured questionnaires were developed to collect data from project managers, project engineers, builders, quality managers, and other key personnel involved in the quality management plan of the different construction's firms of various categories (small, medium, large) in Anambra State. The responses to questions were analyzed using the percentile method and the result presented in the frequency tables. The questionnaires were used as the principal instrument for data collection on quality management practices adopted in various construction firms in project delivery in Anambra state from the targeted respondents. It's consisted of two sections; section A sought information on personal profile of the respondents and information on the characteristics of their firms. Section B assesses the adequacy of the factors of quality management practices in construction project delivery.

IV. RESULTS

This section present and discusses the analysis of the data collected from the questionnaires survey. The project managers have a representation of about 46% of the respondents, while builders in the construction firms have 30% representation while site / project engineer have 22% representation in the total respondents used for the survey. Project manager and builders constitute the highest number of participant used for the survey. Majority 72% of the respondents have obtained their master's degree in their field, 20% have bachelor's degree as their highest qualification attained while 8% have higher national diploma. This confirms that 100% of the respondents have the requisite education to participate in the study. Furthermore, 63% of the responding firms have an average annual turnover of above 100million naira. Similarly, 72% of the responding firms have employees above 20 workers in its payroll. This confirms that the responding firms that participated in the survey are mostly medium size construction firms within Anambra state.

The aim of the study is to assess the current quality management practices within construction firms in building project delivery. To achieve this aim, the percentage distributions of the different factors of quality management practices within the responding firms were presented in Table 2

Table 2: Mean and Ranking of Quality Management Practice of Building Construction Companies in Anambra State

Groups	Factors of Quality Management Practices	Mean	Ranking
Group 1: Top	Management reviews quality issues in management meetings	4.10	1
	Management establishes clear definition of organizations' Quality policy and objectives.	4.05	2

	Management effectively communicates need of meeting client's and statutory requirements to staff.	4.03	3
	Management develops and implements quality plan on the basis of the company's capabilities and readiness.	4.03	3
	Management establishes an appropriate procedure for selecting of sub-contractors and awarding of tender to the most accurate bidder.	3.95	4
	Management relates with clients regularly for speedy decision making.	3.93	5
Group 2: Human Resource Management.	Promote teamwork among employees and labours	4.48	1
	Supervisory staff and authorities in the project site are assessed to ensure they possess work competency.	4.13	2
	Engage only Quality workmanship	3.90	3
	Ensure design team possesses skill through assessment.	3.90	3
	Adequate training programmes are arranged for employees to enhance their skills on regular bases.	3.60	4
	Adequate incentives are provided to motivate employees and labours for quality implementation.	3.55	5
	Income and wages of employees and labours are attractive.	3.48	
Group 3: Customer Focus	Management responds effectively to client's enquiries and complaints.	4.33	1
	Preventive and corrective actions are undertaken to delight customers.	4.00	2
	Client's requirements are used as basis for achieving quality in organization.	3.85	3
	Project price and budget are specified by the client. (Client's emphasis on price)	3.40	4
Group 4: Process Management	Clarity of work or process instruction given to employees, artisans and site operatives.	4.50	1
	Utilize a comprehensive and continuous supervisory and monitoring system.	4.13	2
	Clear procedure for accepting performed activities.	4.05	3
	Ensure bearing capacity of soil is ascertained before design	4.00	4
	Test, review and inspect incoming materials, fittings, components or work for specification compliance before processing.	3.93	5
	Adequately equip and fund quality department/unit responsible for quality implementation.	3.85	6
Group 5: Supplier	Provides clear specifications to suppliers.	4.30	1
	Organization relies on suppliers who are evaluated and selected based on their capability and commitment to meeting organizations' quality policy.	4.10	2
	Suppliers supply specified quality materials only for the project	4.08	3
	Organization provides Technical Assistance to suppliers	3.80	4
Group 6: Information Analysis & Evaluation	Adequate review of drawings and specification for conformity before commencement of approval process.	4.35	1
	Continuity check to ensure high-quality work	4.25	2
	Documentation of project related documents.	4.08	3
	Document corrective and preventive actions.	3.98	4
	Document procedures for reviewing disposition of non-conforming project.	3.60	5
Group 7: Contract Document (Contract & Drawings)	Conditions of written contract are clear and fair, and also responsibilities for distribution is clear.	4.25	1
	Bill of quantity is very detailed and accurate.	4.25	1
	Modern techniques are used in designing with conformity to design codes.	4.00	2
	A competent authority or party is always available to check the contract documents.	3.83	3
	Absence of a conflict between the architectural and structural drawings (completeness and consistency of design document)	3.75	4
Group 8: Materials and Equipment	Optimal use of materials to reduce waste	4.38	1
	Good utilization of equipment and regular maintenance.	4.30	2
	Effective material handling and storage practices available on sites.	4.08	3
	Ensure only Standard Organization of Nigeria (SON) certified materials are used for construction works.	3.88	4
	Use only materials whose samples have been tested and ratified in certified and approved laboratory.	3.70	5
Group 9: Financial Issues	Appropriate budget is usually obtained for project implementation before commencement.	4.18	1
	Organization sufficiently fund quality implementation	3.75	2
	Organization ensures non-delay of interim payments	3.60	3
Group 10: Site Layout	Site layout provides for adequate and efficient storage of equipment and materials waste disposal.	4.25	1
	Site layout planned and well organized for ease flow of labours and materials/equipment.	4.23	2
	Provision for site information signs, security and safety.	4.23	2
	Site layouts planned to accommodate site office.	3.98	

Group 11: Systems in Use	Use computer software and applications.	4.09	1
	Implement and use work programme to fast track project progress.	3.90	2
	Use a complete applied resources management system	3.70	3
	Use cost control system.	3.58	4
Group 12: Continuous Improvement	Finds the root cause and diagnose problems and defects.	4.18	1
	Encourage involvement of every employee in achieving the changed quality policy.	4.15	2
	Identify areas for quality improvement and implement it.	4.13	3
	Track cost of quality process (rework, remedy) for continuous improvement.	4.05	4
	Implement standard quality management system	3.70	5
	Change the company's policy in relation to quality Gradually when needed.	3.63	6

Source: Researcher's Field Survey, 2021

4.1 The results in Table 2:

Group 1 shows that the most significant factor of Top management leadership and commitment is management reviews quality issues in management meetings ranked 1st with 4.10 mean followed by management establishes clear definition of organization's Quality policy and objectives ranked 2nd with 4.05 mean while on the other hand management establishes an appropriate procedure for selecting of sub-contractors and awarding of tender to the most accurate bidder; and management relates with clients regularly for speeding decision making are ranked the least with 5th and 6th; and 3.95 and 3.93 mean respectively.

Group 2 shows that the most significant Human Resource Management factor is promotion of teamwork among employees and labours which is ranked 1st with 4.48 mean followed by Supervisory staff and authorities in the project site are assessed to ensure they possess work competency which is ranked 2nd with 4.13 mean while adequate incentives provided to motivate employees and labours for quality implementation; and income and wages for employees and labours are attractive were ranked the least significant factors with 6th and 7th position; and 3.55 and 3.48 mean each.

Group 3 shows that the most significant customer focus factor is management responds to client's enquiries and complaints ranked 1st with 4.5 mean while the least factor is project price and budget are specified by the client ranked 4th with 3.4 mean.

Group 4 shows that the significant process management factors are clarity of work or process instruction given to employees and site operatives; and utilize a comprehensive and continuous supervisory and monitoring system ranked 1st and 2nd with 4.50 and 4.13 mean respectively.

On the other hand Test, review and inspect incoming materials, fittings, components for specification compliance before processing; and Adequately equipped and fund Quality department/unit responsible for quality implementation are least ranked factors in 5th and 6th positions with 3.98 and 3.85 mean respectively.

Group 5 shows that the most significant effective supplier management factor is provision of clear specifications to suppliers which is ranked 1st with 4.30 mean while the least effective factor Provision of Technical Assistance to suppliers by organizations which is ranked 4th with 3.80 mean.

Group 6 shows that the most significant information analysis and evaluation factors are adequate review of drawings and specification for conformity before commencement of approval process; and continuity check to ensure high quality work ranked 1st and 2nd with 4.35 and 4.25 mean respectively while the least factor is Document procedures for reviewing disposition of non-conforming project ranked 5th with 3.60 mean.

Group 7 shows that the most significant contract documents are conditions of written contract and responsibilities for distribution are clear and fair; and very detailed and accurate bill of quantity which are jointly ranked 1st with 4.25 mean while the least effective factor is absence of a conflict between the architectural and structural drawings ranked 5th with 3.75 mean.

Group 8 shows that the most significant materials and equipment factor is optimal use of materials to reduce waste ranked 1st with 4.38 mean while use of only standard organizations of Nigeria certified materials for construction works is ranked least on the 4th position with 3.70 mean.

Group 9 shows that the most significant financial issues factor is appropriate budget usually obtained for project implementation before commencement is ranked 1st with 4.8 mean while organization ensures non-delay of interim payments is ranked least on the 3rd position with 3.6 mean.

Group 10 shows that the most significant site layout factor is site layout provides for material and equipment storage and waste disposal ranked 1st with 4.25 mean while site layout's provision for site office space is ranked least on the 4th position with 3.98 mean.

Group 11 shows that the most significant systems in use factor is use of computer software and applications ranked 1st with 4.05 mean while use of cost control system is ranked least on the 4th position with 3.58 mean.

Group 12 shows that the most significant continuous improvement factors are Finds the root cause and diagnose problems and defects; Track cost of quality process (rework, remedy) for continuous improvement and identify areas for quality improvement and implement it ranked 1st, 2nd and 3rd with 4.18, 4.15 and 4.13 mean each.

While the least significant factors are implementation of standard quality management system and Encourage involvement of every employee in achieving the changed quality policy ranked 5th and 6th with 3.70 and 3.63 mean each.

V. Conclusion And Recommendation

Quality management practice is not a one-off activity, but entails all the management functions geared towards achieving customer satisfaction, most especially the top management function of determining the company's quality policy, objectives and responsibilities involve every member. The activities include Quality Planning, Quality Control, Quality assurance and Quality Improvement.
The study discovered that Quality decisions are made by management. Therefore, management of organizations are responsible for the quality practice in the organization.

The study recommends that building construction firms should establish and implement a well and clearly defined quality management strategy, develop quality policy, objectives, organisation strategic direction and train their employees regularly to keep abreast with the trend in the global market. The government should also mandate building construction companies to include quality manual, record and procedures in project documentation for contract tendering. Lastly clients should verify the past performance of firms they intend to engage for their project delivery and award contract base on technical and financial bid not based on lowest bid only.

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