

Assessment of the Effectiveness of Construction Managers on Maintaining Quality, Cost and Time on Project Delivery in Delta State, (Case Study of Isoko Community) ¹

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ABSTRACT

In recent times, there has been an increase all kinds of constructions both local and foreign types in Isoko Community in Delta State, Nigeria, and the tools used are both local and foreign made. Most of these construction activities going on in the Isoko communities are poorly managed and monitored. Thus, the poor performance and inadequate management of construction projects has led to lapses in reliability resulting in unexpected events that suffice as failures and delay in project delivery. Thus, the study focused on assessment of construction managers' performance on project delivery in Isoko, Delta State. To achieve this, three (3) research questions and three (3) hypotheses guided the study. The study employed descriptive survey design. Population of the study was 169 registered builders, civil engineers, architects, estate surveyors, valuers and quantity surveyors in Isoko of Delta State. From the population, a sample of 118 was taken using Taro Yamane's formular. The instrument used for the study was structured questionnaire constructed in a four Likert scale. This instrument was both content and face validated by experts in the fields of research and used for data collection. The reliability was done using the test-retest method from other local government other than the one used for the study. Thus, the reliability result was 0.73, considered reliable for the study. The data obtained from the questionnaire administered were analyzed using mean, standard deviation, and Pearson Product Moment Correlation (PPMC) and multiple regression analysis was used to test for the relationship between the variables. The results showed that the level of competence significantly affects construction managers' performance on project delivery in the study area; success factor does not influence the construction manager's performance on project delivery in the area of study. Given that success recorded in one project may not significantly influence the success or performance in another project delivery; and the effectiveness of construction managers on maintaining quality, cost and time within necessary boundaries significantly boost the construction manager's performance on

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project delivery in the area of study. From the findings, it was therefore recommended among others that since the level of competence of the construction managers significantly affects their performance on project delivery, there is need to for them to always upgrade themselves, academically and professionally by acquiring more certification. Also, that awareness should be heralded to ensure gender balance in the construction management.

Keywords: Effectiveness, Competency, Project Delivery, Quality, Cost, Time and Construction Manager's Performance

INTRODUCTION

There have been increasing construction activities in recent times due to technology explosion and various emerging construction designs. This increase has equally affected construction activities in communities in Delta State. Isoko, one of the communities in Delta State is made up of Isoko North and South Local Government Area of Delta State is one of the communities where construction activities gained high influx owing to the growing population and also well-established institutions like the polytechnics now Delta State University of Science and Technology and the Delta State University Campus and the existence of oil servicing firms in the localities no doubt attracts construction activities in the area.

Construction industry is undoubtedly complex in nature because it contains large number of project parties as clients, consultants, contractors, stakeholders, shareholders and regulators. The complexity and fragmented nature of the industry and its highly casual employment of labour makes it sensitive to poor contract performance. However, Babalola, Oluwatuyi, Akinloye and Aiyewalehinmi (2015) noted that poor construction performance has created economic situation which the industry cannot manage and at the same time the industry stakeholders or contractors do not know how to document these problems for future references. Despite this complexity, the construction industry plays a major role in the development and achievement of goals in the society. Construction industry is one of the largest single industries that contribute greatly to the development of nation. The pace of the economic growth of any nation can be measured by the development of the physical infrastructure such as buildings, roads and bridges (Takin&Akintoye, 2012). Successful building construction projects for instance, are those projects finished on time, within budget, in accordance with specifications and to stakeholders' satisfaction (Ogunsemi, 2006; Yaman, 2007; Cheng, 2011).

In Nigeria for instance, the construction industry is a very significant part of Nigeria economy. Though contributed just about N627, 286.61 million (4.06%) and N 695,565.83 million (4.32%) as its own share to the nation's GDP in the first and second quarters of 2014 respectively (Ogundele, 2010). It remains a key player in the national economy. However, the construction industry inevitably faces many challenges which today's construction manager needs to provide solutions to. Some are new to the industry, and some are centuries old. The nature of the industry further complicates these challenges. The industry is fragmented and often inefficient and is also slow to adopt, implement and integrate new information technologies and products, devoting few resources to research and development (R&D) compared to other (Adeyeye, 2009).

The success of a project is judged by meeting the criteria of cost, time, safety, resource allocation, and quality as determined by the owner. Thus, the purpose of construction project management is to achieve goals and objectives through the planned expenditure of resources that meet the project's quality, cost, time, scope, and safety requirements. The construction manager must control, deflect, or mitigate the effects of any occurrence or situation that could affect project success. Hence, the major tasks in construction management include planning, organizing, scheduling, implementing, managing, monitoring, controlling, and tracking construction projects. It is essential therefore, for construction activities to be accomplished successfully in an effective and efficient way. This requires that competent professionals be appointed that bring value to the project and manage it adequately. Without the competent professional individuals, the project will almost certainly be over budget, behind time and not of adequate quality (Patil & Pataskar, 2013, Gulghane & Khandve, 2015).

Construction management is another aspect within the construction industry that is misunderstood and often misinterpreted. Many firms only have a construction foreman whose roles and responsibilities differ quite significantly from that of a construction manager. The performance and significance of Construction managers are fundamental to a development or project delivery. Their management function and leadership is an important asset within the industry as they are responsible for keeping the project up to date, within budget and within acceptable quality standards. Many client assume that a construction manager and artisans such as block layers are one and the same and other professionals involved within a project at times assume that because they have certain responsibilities of a project manager that they are the project manager of the project.

A competency profile of the 21st manager includes competencies closely related to the cognitive functioning (e.g, the ability to analyze, synthesize, and solve problems) to the competencies related to the functioning in the community (interpersonal skills, communication skills, the ability to motivate others). In order for successful innovation management to occur, a manager must acquire or possess expertise in the domain at hand, creativity, ability to carry out transformational leadership behaviours, planning and sense-making, and social skills (Mumford,2002). Managers should constantly encourage employees to cooperate creatively in solving problems, help them in demonstrating activity, and motivate them to be creative, eliminate an authoritative attitude, provide psychological freedom of action, properly inform and take care of the constant improvement of their intellectual level. It can be assumed that company innovation is conditioned, among others, by managers: their mental focus on developing innovative activities, their ability to engage the appropriate resources in this activity, to identify and use external impulses, to accept many, also controversial points of view, to do experiments with calculated risk and to seek opportunities for radical breakthroughs (Krawczuk 2008).

Construction managers potential and value in Isoko community has not yet been fully realized, certain members within the professional team will do some of the functions and share some of the responsibilities of what a construction manager should have, and will thus not be managed and executed as efficiently as if an appointed construction manager performed the task. Every single project is unique and no two projects are the same, thus the roles and responsibilities of a construction manager and their professionals including construction project participants will also

differ with each project. Project quality are evaluated by performance measurement which can be defined as the process of evaluating performance relative to a success in terms of time, cost and quality these are the basic criteria to project success. While project creates productive assets through the conversion of resources into productive assets, for the right quality, time and cost. (Natarajan, 2012).

In the realm of project management, the schedule, cost and quality achievement is also referred to as the iron triangle. Out of these three aspects, it is the achievement of schedule and cost Compliances that the project management is attending to most of the time. This results in a halfhearted attempt to achieve quality at project sites.

In order to achieve the schedule and cost objectives, project quality is sometimes also overlooked, (Jha and Iyer, 2006). According to Ogunde (2016) quoting Jha and Lyer (2006) describes quality as the world's oldest documented profession. Quality professionals use a number of definitions to define project quality. Quality in its simplest form can be defined as: 'meeting the customer's expectations,' or 'compliance with customer's specification.'

No matter what definition we follow for quality, it becomes very complex when we try to put it into actual practice. For a user, quality is nothing but satisfaction with the appearance, performances, and reliability of the project for a given price range. The need for creative conversion of resources into project asset through effective organization, plans, schedules, and controls of the field work to achieve project time, cost and quality, is the responsibility of the project manager. He is responsible for getting the project completed within the time, cost limitations and quality. The success of any project is attributed into the proper management role of the project manager in putting together available resource.

Brief Description of Delta State and Isoko Community

Delta State has a population of 4,112,445 (males: 2,069,309. Female: 2,043,136) (National Census,2006). Delta state has twenty five local government area includes; Ethiope East L.G.A with a population of 200,942, Isoko North, 143,559, Isoko South, 235,147, Ughelli North, 320,687 and Ughelli South, 212,638.

Isoko occupies a space of land in South East of Delta State of Nigeria; bounded by Kwale to the North, Urhobos to the West, Ndokwa Osimili/Aboh to the East; and Ijaws to the South while the Delta Igbos and Itsekiris are not left out. Isoko people are an ethno linguistic group that inhabits the Isoko region of Delta State, Nigeria. The Isoko land is one of the most densely populated areas in Nigeria, with about 500 people per square kilometer compared with the average of 198 for Delta State and 130 for Nigeria. The consequence has been a shortage of farmland which is accentuated by oil exploration activities in the region. Also, some 300,000 Isoko people are permanent indigenes of Ndokwa East of Delta State and Sagbama local government area of Bayelsa state.

Climate

Delta State is situated in the tropics and therefore experiences a fluctuating climate, ranging from the humid tropical in the south, to the subhumid in the northeast. The lessening of humidity towards the north is accompanied by an increasingly marked dry season. The average rainfall is about 266.5mm in the coastal areas and 190,5mm in the extreme north. Rainfall is heaviest in July. www.onlinenigeria.com/delta state (2003)

Temperature, Vegetation and soil

The temperature of Delta state is between 24°C– 32°C. Temperature increases from the south to the north. In Warri, located in the south for example, the average daily temperature is 30°C, while the temperature in Asaba in the north eastern area is 44°C. www.onlinenigeria.com/delta state (2003). The vegetation varies from the mangrove swamp along the coast, to the evergreen forest in the middle, and the savannah in the north east. There are three types of soil in Delta State. These consist of alluvial soil on the marine deposits along the coast; alluvial and hydromorphic soils on marine and lacustrine deposits found in the area closest to the Niger and Benin rivers; and the ferral soils on loose sandy sediments in the dry land areas of the north and northeast. The ferral soils are usually yellowish in color. www.onlinenigeria.com/delta state (2003).

Ecological Problems

The environmental setting of Delta State has very serious ecological problems such as erosion and flooding. Coastal and creek erosion affect the coastal areas, resulting in loss of farm and residential land, and in some cases whole village such as Ogulaha and Ugborodo (Ibe, 2012). Flood is a widespread phenomenon in the state. In the coastal area, the numerous rivers and creeks flood their banks creating social and economic problems. Flash floods and flood pondages are the major features of the drylands, especially in the urban centres of Warri, Sapele and Ughelli. In recent times, oil exploitation and gas flaring have further aggravated the ecological problems, causing very serious environmental pollution. The consequences include the destruction of aquatic life and vegetation and reduction in soil productivity. www.onlinenigeria.com/delta state (2003).

Economic Activities

Agriculture, Forestry and Fishing: Two main forms of agriculture are prominent in the state namely, food crop production and industrial crop production. The food crops produced include rice, yam, cassava, fruits and vegetables (mangoes, pawpaw, pineapples, banana, pepper and tomatoes). These crops are produced over the wide range of ecological zones within the state with the exception of the mangrove swamp and the coastal sand areas. The industrial crops include rubber, oil palm and palm kernel. Like food crops, the industrial crops are grown in all ecological zones with the exception of the mangrove swamp and the coastal sand areas. Rubber is the leading export crop in the state.

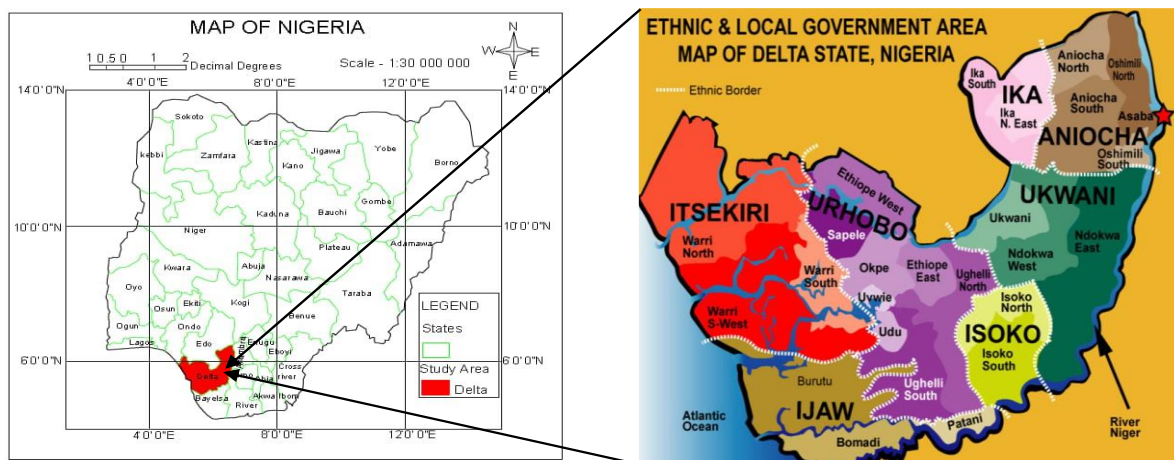


Fig 1.1 Map of Nigeria showing Delta State
Source: Digitized google maps (2019)

Problem Statement

As earlier stated in the introduction, all kinds of constructions are being carried out in Isoko Community and they range from local to foreign types of constructions and the tools used are both local and foreign made. Most of these construction activities going on in the Isoko communities are poorly managed and monitored. Thus the poor performance and inadequate management of construction projects has led to lapses in reliability resulting in unexpected events that suffice as failures and delay in project delivery. Failures and delays in project delivery are foundational to time and cost overrun that often led to profit loss, exposure to environmental, social, and economic risks, and increased overhead costs. As advocated by (Olalusi & Jesuloluwa, 2013) poor performance and inadequate management can lead to failure and risk and other consequences such as overhead costs economic waste and environmental and social consequences.

Additionally, within the Isoko Communities, it has been noticed that most project are either suspended or abandoned uncompleted because of improper management and application of innovative and suitable managerial skills, tact and requisites. Due to these problems experienced in the study area it then gave rise to some questions, if project delivery methodologies were not properly followed or weather the services of skillful and competent construction managers were deliberately neglected based on client myopic perspective of construction managers choice. This development is therefore a cause for concern that calls for solution as national construct and arrive at appropriate approach on problem hence the choice of the topic as a platform to assess and arrive at appropriate approach for a proffered adoptable solution.

There has been problem of the inability of project teams to combine mindfulness, as revealed by High Reliability Organizations (HROs), with construction manager to respond adequately to unexpected events during the execution phase of construction projects in Nigeria especially in the Isoko Community particular. Mindfulness suffices as effective contingency planning, systematic

approach to, and proactive response to weak signals, trivial issues, and outright failures. Between 50% and 70% of Nigerian, Isoko Community inclusive, construction projects encounter some form of delay due to lapses in reliability and inadequate response to unexpected events. This finding presupposes that most unsuccessful construction projects in Nigeria do not meet their time objectives (Idoro, 2012; Idoro, 2012).

Deloitte on Africa (2014) reported that, with an expenditure of about US\$36.4 billion in 2014, Nigeria is leading all other African countries in major infrastructure construction projects. However, despite these positive projections, few studies have explored how construction managers performance and effective management enabled team members to achieve resilience in the management of unexpected events in Nigerian construction projects.

Without mindful and effective construction manager, adequate contingency planning, and a systematic approach to failure, it is difficult to identify and adequately respond to unforeseen events before they occur which in return affects project delivery (Lee & Diekmann, 2011; Yang & Kao, 2012). Despite the preponderance and consequences of unexpected events in Nigerian construction projects, the argument that unexpected events and poor project delivery are due to lack of mindful and ineffective construction manager and inadequate construction management, I could not find any studies on how construction manager's performance responds to unexpected events during the execution phase of Construction Projects towards service delivery.

Therefore, construction manager's performance should be subjected to a proper assessment of their project delivery methods in relation to the owner's interest and scope of the project considering also pertinent issues. Inefficiency of project managers' performance in efficient delivery can result in: Abandonment of project, Loss of client's confidence in competency of construction manager, less quality product, Cost overrun of project, Reduction of possible competitiveness, Delay in project completion time, Increase in life cycle cost etc.

Significance

This research purposed to pre-empt the need for undertaking construction project performance in Isoko community based on relevant indicators, as a means of helping to bring about improvements in project executions and delivery. Focusing on Isoko community, a fast-developing community, this paper aims at assessing construction managers' performance on project delivery in the Isoko Community of Delta with a view to providing measures that would lead to satisfactory performance of construction managers' projects delivery in the study area whereas the objective is to assess the effectiveness of construction managers in maintaining quality, cost and time. The findings of this study will be of immense benefit to stakeholder in building industry, lecturers, students, management of construction firms, contractors, project managers, construction staff and future researchers. The findings of this study will be of immense benefit to professionals in construction industry, the findings of this study will expose them to the different forms of management strategies and the knowledge of these strategies will facilitate their efforts and prepare them for better managerial aspect in the construction industry. The findings of this study will be of benefit to management of construction firms in the study area as it expose them to the different forms of management Mechanism and the knowledge of these mechanisms will facilitate

their efforts and preparedness for efficiency in project delivery. The findings of this study will be of great benefit to future researchers by adding to the pool of information that already exists in this area. It will enable future researchers see other areas of manager's deficiency in management that may not be covered in this study which could form the basis of their research.

Aim and Objective of the Study

The aim of this study is to assess construction managers' performance on project delivery in the Isoko Community of Delta with a view to providing measures that would lead to satisfactory performance of construction managers' projects delivery in the study area whereas the objective is to assess the effectiveness of construction managers in maintaining quality, cost and time.

Research Questions

The research question is what is the effectiveness of construction managers in managing quality, cost and time in the study area?

Hypotheses

Ho: Effectiveness of construction managers on maintaining quality, cost and time within necessary boundaries does not significantly boost performance on project delivery.

REVIEW OF RELATED LITERATURE

Construction Industry

The construction sector is responsible for building new houses, apartments, factories, offices and schools. It also builds roads, bridges, ports, railroads, sewers and tunnels, among many other things. In addition, it maintains and repairs all of those structures and produces the basic materials such as concrete that are used to make them. The industry's significance is due not only to the fact that it provides the buildings and infrastructure on which virtually every other sector depends, but to the fact that it is such a sizeable sector in its own right (Du, 2012).

However, as Ofori (2000) notes, most of these topical issues which have implications for construction industry have so far only been discussed within the context of the industrialized countries and is yet to be considered seriously in the developing countries. Considering the investments levels of the construction industry and the development needs of most developing countries, the time is overdue for these matters to be given prominence. This is also because, despite the relatively high investment in infrastructure in developing countries, the World Development report (2000) highlights the less corresponding impact these have had on the people in these countries. Hence, the report indicated that the infrastructure's future challenges should be dealt with by tackling inefficiency and waste –both in investment and delivering services. The

report indicated that the poor performance of those managing the delivery and maintenance of these infrastructures provides strong reasons for doing things differently.

Construction industry plays an important role in socio economic development of any nation. The activities of the construction industry have a lot of significance to the achievement of national socio-economic development goals of providing infrastructure, sanctuary and employment. This also includes hospitals, schools, townships, offices, houses and other buildings; urban infrastructure (including water supply, sewerage, drainage); highways, roads, ports, railways, airports; power systems; irrigation and agriculture systems; telecommunications and so on (Kasimu, 2015; Uma and Eboh, 2013). The construction industry holds an immense potential for stimulating growth, boosting project exports and generating employment. The domestic construction segment happens to be one of the fastest growing segments, with an impressive average growth of 7-8 per cent per annum (Ofori, 2010).

The foundation of a higher growth rate rests on a sound and efficient infrastructural development which makes the construction segment a key sector. The rapid expansion of infrastructure by both government and the private sector has triggered off construction activities and fuelled demand in many key sectors like cement, steel, paints and chemicals, glass, timber and earth moving equipment and machinery (Jacobsson & Wilson, 2012). The construction sector is a crucial industry having strong backward and forward growth linkages. It deals with all economic activities directed to the creation, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature. Besides, the construction industry generates substantial employment and provides a growth impetus to other sectors through backward and forward linkages.

The construction industry has an important role to play within the overall economy of any given country. How that role manifests itself will vary greatly from one nation to another, in developing countries it is likely that the extraction of raw materials and the on-site construction activity is of most importance, as the country seeks to set up a significant infrastructure, in the form of roads, railways and buildings. In more developed countries, the onus will be on professional services and the sale of the end products. It is also possible that a large DIY and maintenance sector will emerge the longer the main infrastructure has been in place, as potential customers seek to maintain and update current dwellings or work places rather than looking to a new building altogether. This is particularly true in the current climate in the UK where high house prices, rising interest rates, and a high cost of actually moving in terms of stamp duty, legal fees, estate agent fees and removal services means the attraction of improving the current dwelling is much higher than ever before, especially when coupled with falling costs of extensions and conservatories.

Broadly speaking, the construction industry is part of the process creating and sustaining the built environment. In a narrow view, according to Otoo, (2010), the construction industry is placed solely in the secondary sector, as these accounts for the transformation from manufactured materials into a final product. However the reality is that the construction industry spans across the primary, secondary and tertiary sectors, as the process sees raw materials transformed into manufactured materials and then on into a final product, with professional services and sale of products at the end of the line.

Another factor that makes the construction sector of utmost importance to the economy is the role it plays in sustainable development by the proper implementation of a sound infrastructure the basis for sustainable development is laid in place. Coupled with ever advancing technologies into new build, and similar technologies applied to maintenance and alteration of existing builds, the construction industry plays a key role in ensuring a country can sustain a given level of development. Sustainability is increasingly becoming high priority to more and more countries. According to “Sustainable Development and the Future Construction” (CIB, 1998), the drive for sustainability identifies economic, social and cultural aspects as part of the sustainable construction framework, but special regard is given to ecological impacts to the environment, with more countries joining environmental pacts, and with fossil fuels and exhaustible materials for building becoming more scarce, the construction industries part in sustainable development is becoming more important.

Construction Managers Competence

A project is defined as any temporary endeavour undertaken to achieve a unique product, service, results or objectives (Project Management Institute, 2013; 2008). A project can also be defined as a set of well-defined inter-related activities designed to achieve a specific objective within a specified time frame and budget (APM, 2013; Gardiner and Stewart, 2010). In addition, Stenvenson (2008) defines a project as a unique, one-time operations designed to accomplish a specific set of objectives in a limited time frame. From the above definitions, it can be deduced that projects are characterized by the following features: they constitute a set of activities with well-defined objectives (PMI, 2013; Whitehead, 2015). In addition, they have a specified time frame, cost constraint, quality limits and involves risk at every step of their processes. Every project is unique (Gary, 2009; Carr, 2009; Stenvenson, 2008). In other words, it may never be repeated in the same way by the same group of people at the same place. They are intended to generate benefit with a progressive elaboration which consume resources in the form of money, people, and equipment (Carr, 2009) as earlier indicated by Whitehead (2005).

Additionally, it is pertinent to stress that projects go through life cycles. Every project goes through the initiating, planning, executing, monitoring and controlling, and closing stages (PMI 2008; Stevenson, 2008). Unique but overlapping set of processes are performed at each stage, and project processes are performed by the project team, categorized as the initiating, planning, executing, monitoring and controlling, and closing groups (PMI, 2013; 2008; Stevenson, 2008)

Projects according to Dinsmore, and Cooke-Davies (2006) can be classified into three groups depending upon their triggers: first, Compliance (Requirement) and Emergency (Must Do) Projects; A project that must be done to satisfy a certain requirement, for example to enable an entity to embark on any project in a region, district or an area as business. There is the need to carry out an Environmental Impact Assessment as a project which is a requirement. They pay penalty is required if not implemented. Second, Strategic Projects are those that directly support organization’s long-run mission.

Examples of strategic project include the introduction of a new product and to build a new plant in response to chronic product shortage and resultant high prices. Third, Operational Projects are carried out to support the operations in an organization. These projects are designed to improve efficiency of delivery systems, reduce product costs, and improve performance. Top Quality Management (TQM) projects are operational projects (Dinsmore and Cooke-Davies, 2006). In relation to above classification is the role of projects. Rose (2007) pronounces that projects have many roles to play. They solve a problem; satisfy the needs of society; improve the living standards of people; and improve the capacity of a community to manage on their own. They can serve as philanthropic gesture; politically, they are sometimes used to score political points. Projects are utilized to alleviate difficulties and make a dream come true (Rose, 2007).

Project Manager's Competence

It is not very difficult to understand that competent people have to be found to be the Project Manager in order to achieve the best outcome of the project. Projects and programs have been used more and more for achieving the strategic goals and objectives of a company, this through the last sixty years (Bredillet 2015). Crawford (2005) defines the competence of a Project Manager as “the knowledge and understanding, skills and abilities that a person brings to a job”, “the core personality characteristics underlying a person’s capability to do a job” and “the ability to perform the activities within an occupational area to the levels of performance expected in employment” (Crawford, 2005, in Bredillet 2015).

These definitions give an idea that a competent Project Manager is a person who have expertise in the field of project management, have personal characteristics that will make the person capable of actually performing the project management and is able to accomplish the given tasks in a certain level of performance. Summarized, to define if a person is a capable Project Manager depends on the skills, the personality and the ability to perform (Bredillet, 2015).

Project Management (PM)

PM is defined as “the application of knowledge, skills, tools, and techniques to project activities in order to meet project requirement” (PMI, 2013; 2008). PMI further stresses that, PM is accomplished through the appropriate application and integration of the project management process groups. Successful project management can be defined as having achieved the project objectives within specified time and cost frame at a given desirable performance/technology level while utilizing the assigned resources effectively and efficiently of which the result should be accepted by the customer or client (PMI, 2008). Previously, Stevenson (2008) opined the key success factors of project management to include top-down commitment; having a capable project manager; having time to plan; careful tracking and control and good communications. Also, in accordance with the Association of Project Management (APM, 2013) a successful project is one that meets or exceeds the expectations of the stakeholders.

A contemporary PM literature needs to touch on the relationship between project management and its sister concepts such as, programme management and portfolio management. Whereas a programme is a set of projects managed in a coordinated way to obtain benefits and control not

available from managing them individually, a Portfolio refers to a collection of projects or programmes or other work that is grouped together to facilitate effective management of that work to meet strategic business objectives (PMI, 2008). It is emphasized that the project or program of a portfolio may not necessarily be interdependent or directly related (PMI, 2008). PMI, 2008) further define portfolio management as the centralized management of one or more portfolios and includes identifying, prioritizing, authorizing, managing and controlling projects, program and other related work to achieve strategic business objectives. Portfolio management focuses on ensuring that projects and programs are reviewed to prioritize resource allocation and that the management of portfolio is consistent with and aligned to organizational strategies (PMI, 2008).

Emphatically, the role of a project manager is distinct from that of a functional manager (Stevenson, 2008). While a functional manager provides management oversight for an operational department and the resources that support the functional area, the project manager is involved with planning, staffing, monitoring and controlling, as well as directing the resources associated with a project (PMI, 2008). The project manager is responsible to the project stakeholders for delivering a project objective within scope, time, cost and quality. However, depending on the organizational structure, a project manager may report to a functional manager (PMI, 2008). According to Stevenson (2008) project managers are responsible for the work, quality, human resources, time, communications and costs associated with a given project of which project managers and PM teams required key PM skills in their execution.

Project Management (PM) Competencies

PMI (2002; 2008; 2013) identifies and categorizes the competencies needed by the managers and staff of PM, into three broad competent areas such as: Project Management Knowledge Competency which comprises what the project management team knows about PM; Project Management Performance Competency which entails what the project team can accomplish while applying the project management knowledge; and Personal Competency, which entails how the project management team behave while performing the project or activities. PMI (2008) uncovered that an effective project management requires the project manager and team to understand and use knowledge and skills from at least the following five areas of expertise: The Project Management Body of Knowledge (PMBOK) which entails the application area knowledge, standards, and regulations; Understanding the project environment; General management knowledge and skills and Interpersonal skills (PMI, 2013; 2008). The PMBOK is a trademark of the Project Management Institute (PMI) and this institute is an inclusive term that describes the sum of knowledge within the profession of project management (PMI. 2002). As with other professions such as Law, Medicine and Accounting, the body of knowledge rests with its practitioners and academics who apply and advance it.

The standard is unique to the project management field (PMI. 2008; 2002). The PMBOK Guide is the standard for managing most projects most of the time across many types of industries. This standard describes project management processes, tools and techniques for managing scope, schedule, quality and cost as well as any project environment aspects that influence the project outcome. This method that allows the standards to work for most projects most of the time is called “project tailoring.” According to PMI (2013; 2008, 2002) as previously stated, there are

nine project management body of knowledge areas as depicted in the table below. These nine bodies of knowledge areas are though interrelated but with different skills, tools, and techniques to project activities in order to meet project requirements

In relation to the nine PM knowledge areas, Eve, (2007), recommended product lifecycle, knowledge and competencies and organizational support and behaviour as the three areas of focus for developing successful project management systems.

Eva (2007) lamented that the tendency of the world's benchmark companies towards acceptance for project management as a "way of working" rather than a simple approach or tool set is not a mistake. As a key enabler of successful project, PM aids companies implementing business improvement methodologies such as Just-in-Time, Six Sigma or lean operations to improve their efficiency and competitiveness. Further noted that the need for a robust project management core competency as a necessary condition for a company to maximize the positive impacts of these methodologies (Eve, 2007).

The Importance of Construction Manager in Managing a Project

Hassan (2005) mentions that a range of job titles has been used to describe the person performing the duties of construction managers within the industry. A construction manager is a business entity that facilitates the use of the construction management project delivery system on a construction project. According to Zwikael (2011), a manager who managed the construction project, is the person held they may initiate, plan, execute, monitor and close a whole project or just part of a project. The term construction manager is also used to identify individual practitioners that are part of a construction management organization. In the context of this research, construction managers can be defined as a person (owner or salaried employees) of the construction company overseeing the construction management of a project.

Sufficient competencies enable the construction manager monitor and control the progress of the project smoothly. One of the important tasks of a successful construction manager is to be able to handle unexpected situations effectively (Isa, 2007). This is why a construction manager must possess required competency in term of skills, knowledge and behavior (Crawford, 2000). The construction process consists of five project management process which are initiating, planning, executing, monitoring and closing and it deal with various participants (Osman, 2006). The main role of construction manager is to coordinate the activities within the project management process with the various team members to ensure that they perform the right tasks at the proper time (Clements & Gido, 2012). A construction manager must ensure that those who work on the project have the appropriate knowledge and resources, to accomplish their assigned responsibilities (Sutton, 2011). A construction manager has a very important objective such as setting achievable and effective goals, monitoring and controlling the construction project, and ensuring the project success within budget and time constraints. The generic activities of the construction manager consist of administrating; advising; assisting; budgeting; checking; consulting; coordinating; documenting; estimating; evaluating; expediting; managing; planning; recording; reporting and scheduling (Shaker, 2007). Isa (2007) stated that the construction manager roles started as early as in the initial stage, where the construction manager required evaluating and determining

appropriate construction methods and the most cost-effective plan and schedule. The rest of the construction manager basic activities are summarized in table 1.

Project management process and generic construction manager's role

Initiating: Evaluate and determine appropriate construction methods and the most cost effective plan and Schedule

Planning: Segregates all required construction site activities into logical steps and budgeting the time required to meet the deadlines. Selecting trade contractors to complete specific pieces of the project. Labor requirement is determined by construction manager including supervising the hiring and dismissal of them

Executing: Directs and monitors the progress of construction activities. Appraisals, weekly & monthly cost control, assist valuation, claims & payments

Monitoring: Manage performance of all trade contractors and ensuring that all work is completed on schedule. Administer the materials, tools, plants and equipment delivery and usage; productivity of the Review engineering and architectural drawings and specifications to monitor progress and ensure compliance with plans and schedules

Track and control construction cost against the project budget to avoid cost overruns.

Prepare daily reports of progress and requirements for labour, material, machinery and equipment at the construction site

Closing: Preparing for handing over of the project

Final account. Handling defect liability period (DLP)

Crawford (2000) highlighted that, in order to perform satisfactorily, construction manager are expected to have specific knowledge and understanding of their roles. Construction manager has to combine the required technical knowledge and behaviors that may stimulate effective teamwork and communication to achieve successful outcomes (Dainty et al., 2005). According to Cartwright & Yinger, (2007) and Ahsan (2011) a competency can be defined as a cluster of related knowledge, skills, and behaviors that affect a major part of one's job correlates that individual needs to perform roles on the job. It can be measured against well- accepted standards and can be improved via training and development. When applied to project management, competence is the ability to perform activities within a project environment to expect and recognized standards. Yepes (2012) stated that nowadays, more challenges faced by the construction manager as the magnitude of complexity of a construction project increase, thus, it hence the requirement of additional competencies. Ahsan (2011) stated that, to be competent the construction manager is required to satisfy the three dimensions of competency which are knowledge competence, performance competence and personal competence. It is in line with Crawford (2005) integrated model of competence which consists of knowledge and skills, performance and personality dimensions. Crawford (2005) integrated model of competence.

On the other hand, Omran, (2012) have outlined the concept of construction manager competency which consists of personal characteristics (self-reflection; leadership / team management), attitudes (personal values; organization / project / events), knowledge competence (organizational context, scope, quality, risk, value, time, cost, materials and human resource management) and skills competence (project / event process, communication, leadership). Meanwhile, Fotwe and McCaffer,(2010) grouped the primary and secondary competency required by the construction manager in delivering a project management activity into several clusters under knowledge and skills category. It includes technical, managerial, financial, legal, communication and general.

The four COMs

Critical success factors are those inputs to the project management system that directly increase the likelihood of achieving project success. Nguyen, Ogunlana & Lan (2014) identify and group success factors under four categories which are referred to as the ‘four COMs’, viz., comfort, competence, commitment and communication.

Comfort: The comfort component emphasizes that successful projects include the involvement of stakeholders. This includes both primary stakeholders who have a legal relationship to the project (e.g., subcontractors) and secondary stakeholders who do not form a direct part of the project, but influence decisions (e.g., community forums). The needs of stakeholders have to be managed and influenced in a manner that ensures project success (Swan and Kalfan, 2007). It is essential that a competent project manager be appointed. Malach-Pines, Dvir & Sadech (2009) believe that such an individual should possess both technical skills, which include being a subject matter expert and having an in-depth knowledge of structures, and “soft” skills, which include team management, emotional intelligence, transformational leadership and conflict management. According to Newton (2005), the availability of resources is a further critical factor. A resource management plan needs to be developed in conjunction with all relevant stakeholders. Competition for resources is a common phenomenon in projects. Unexpected developments during the course of the project must be carefully managed in terms of resource planning. It must be ensured that there is adequate funding throughout the project. A financial plan, which takes into account the project activity schedule, needs to be developed. Finally, there must be comprehensive contract documentation. It must be ensured that all relevant stakeholders enter into contractual agreements regarding activities and performance during the course of the project. Cost, time and quality parameters need to be specified so that performance can be assessed (Johnson, Scholes & Wittington, 2006).

Competence: The competence component identifies the following four aspects as being central to successful project management in the construction industry. First, utilisation of up-to-date technology. Nguyen, Ogunlana and Lan (2004) believe that adopting new technology and utilizing it to its full potential has become critical in achieving a competitive advantage in the construction industry. The construction industry has witnessed significant technological developments in recent years. Selecting the appropriate new technology and optimal utilisation is key to project success. Secondly, there must be proper emphasis on past experience. Tacit knowledge plays a key role in this regard. In addition, project members should be encouraged to document tacit knowledge gained from the project in order to prevent mistakes in subsequent projects. Thirdly,

there must be competent teams in place, implying that staff members must have the necessary skills (Melkonian and Picq, 2010). This requires a comprehensive skills analysis that should reveal gaps in skills. Finally, the aspect of awarding bids to the right project manager/contractor needs consideration. The construction industry in South Africa has witnessed an increase in the number of contractors, resulting in more intensive competition in this sector. The Black Economic Empowerment (BEE) status of a contractor plays a key role in the selection of contractors, especially in the case of public sector projects. Other considerations when selecting contractors include company track record, quality management, health and safety, and technical proficiency (Philips, Martin, Dainty & Price, 2008: 312).

Commitment: Commitment emphasizes the support of top management, commitment to the project, clear objectives and scope, and political support. The support of top management goes beyond the provision of funds and making resources available (Johnson, Scholes & Wittington, 2006). Kerzner (2006) believes that commitment to the project is very closely linked to a sense of collectivism, rather than individualism. An environment needs to be created, in which team members experience job satisfaction and are, therefore, motivated to be part of the team. Optimal performance by team members is important. Having clear objectives and scope are key in providing direction to team members. Objectives must be clear and scope should be as simple as possible in order to avoid “grey areas”. It is inevitable that changes will occur during the course of the project. Flexibility and adaptability are, therefore, central to achieving success. Finally, political support is important for project success, given that a large proportion of projects are public projects. To this end, support from non-governmental organisations and the ruling party is important (Jacobson and Choi, 2008).

Communication: Communication plays an important role in leading, integrating people, and taking decisions to make a project a success. There must be shared project vision, where the project manager identifies the interests of all relevant stakeholders and ensures that there is buy-in to the project (Yang, Shen and Ho, 2009). According to Zwikael (2009), once the project objectives are set and the scope clarified, there must be constant update as the project progresses. Progress on activities assigned to individuals or groups needs to be monitored with a view to achieving overall goals. These updates must be communicated to the relevant parties. Newton (2005) believes that a detailed communication plan is necessary for the effective dissemination of information. To this end, frequent project meetings are necessary. Apart from consulting with the community, local direct involvement is a key element for project success. Given the relatively high unemployment rates in South Africa, consideration must be given to local residents. This could include sourcing materials from local suppliers and employing local residents. It is advisable to use an influential community member as a liaison between the project manager and the community (Teo, 2010). Finally, proper handover procedures need to be developed. This is an important consideration, given that the construction industry is being increasingly viewed as a service industry (Karna, Junnon and Sorvala, 2009)

Critical success factors (CSFs)

Critical success factor according to Zarina, Zawawi, Khalid and Aris (2014), from a Project Management perspective, critical success factors (CSFs) are characteristics, conditions, or

variables that can have a significant impact on the success of the project when properly sustained, maintained, or managed (Milosevic and Patanakul, 2005). Different studies have identified different CSFs and a lack of consensus of opinion among researchers on the criteria for judging project success and the factors that influence that success (Fortune and White, 2006). In addition, several studies addressing CSFs have observed the impact of context on which factors are considered most critical as well as whether certain CSFs are indeed related to success. In most construction companies, management activities in construction project can be a better understanding by exploring the critical success factors (CSFs) for improving the performance of their building projects. The CSFs approach has been established and popularized over the last 20 years (Chan, et al. 2004). Nevertheless, the majority of the studies focus on the traditional “iron triangle” which are cost, quality and schedule (criteria for measuring project success) of conventional construction process rather than sustainable buildings (Walker & Shen, 2002). Most of the studies only emphasized the critical project attributes unique to green building projects, such as early involvement of the project team members (Lapinski, 2006) and integrated project delivery methods, which are usually not identified as important success factors for improving project performance in terms of cost, time and quality by most previous researchers.

Research Gap

From the literature reviewed, it is observed that much work have been done on project management and project delivery but no comprehensive research has been carried out on construction managers performance on project delivery in Delta state.

Against the above backdrop, the study tends to assess construction managers performance on project delivery in Isoko Delta State.

METHODOLOGY

The study adopted the descriptive survey design. This design was considered appropriate for this study since the study sought to explore the opinions of the respondents on the assessment of construction manager’s performance on project delivery in the Isoko community of Delta State.

The population of this study is 169 which are made up of registered professional in their various professional bodies in Delta State, thus 29 builders, 24 architects, 67 civil engineers, 27 estate surveyors and valuers, and 22 quantity surveyors (NIOB, Delta State Chapter and Delta State Ministry of Works, 2020) and thus it was restricted to the stakeholder in building industry.

For high degree of accuracy and adequacy in representation of the sample, the researcher employed two sampling techniques namely: stratified random sampling for administration of the questionnaire in the survey aspect of the study while purposive sampling technique was used for the selection of building professionals in building construction respectively.

The sample size for this study was determined using Taro Yamane’s formular as cited in Ogunoh (2008). The sample size of 118 was adopted for this study.

The data for this study was gathered from two sources. Namely primary and secondary source.

The primary sources of data for this study was based on first hand data collected from the sample of the population under study which includes:

1. Questionnaire.
2. Interviews with some respondents

1 Questionnaire

Questionnaires are data gathering devices designed to elicit answers or reactions to rearranged questions presented in a specific order. The questionnaires designed for this study was both structured and semi-structured questionnaires (multiple choices) and included closed ended questions.

2 Oral Interview

Oral interview is basically flexible and encourages the respondents to express their views and feeling more freely than by way of answering (fillings) the questionnaire. It is also used to make up where questionnaire failed due to its formal nature. The interviews that was conducted is unstructured which enabled the researcher obtained clarifications on some variables which needed further in-depth investigations. In this study therefore, oral interview will be adopted.

Secondary Data

The collected secondary data, therefore, included the most relevant and current, within the discipline from text books, academic articles, journals and magazines. A number of online sources were also used to get information for literature review.

Reliability of the Instrument

The test-retest method was used to determine the reliability of the instrument. The researcher administered copies of the instrument to 40 professionals from Ethiope East Local Government Area of Delta State that were not part of the sample of the study. To avoid the influence of familiarity of research instrument, the instrument was re-administered after an interval of two weeks on the same subjects and was retrieved. Data from the two tests were analyzed using Cronbach's alpha. The result yielded 0.93, which shows that instrument is reliable and therefore used for the study.

RESULT

Mean and standard deviation were used for the research question and the hypothesis were tested using regression.

Table 1 The extent of effectiveness of construction managers on maintaining quality, cost and time within necessary boundaries that ultimately boost their performance

S / N	Responses	SA	A	DA	SD	\bar{X}	Std	Remark
1	Quality, Cost and Time are great interferences on the performance of construction managers as it affects their project delivery the study area	69	19	21	9	3.25	1.01	Agree
2	Land disputes and Community crisis can affect the effectiveness of construction management in terms of quality cost and time in project delivery	65	38	9	2	3.44	0.71	Agree
3	Government Policies also affect the effectiveness of construction management in terms of quality cost and time in project delivery	48	38	19	13	3.03	1.01	Agree
4	Lack of Management Procedures affect the effectiveness of construction management in terms of quality cost and time in project delivery	51	28	21	18	2.95	1.11	Agree
5	Touts, area boys, unionism and the likes affect the effectiveness of construction management in terms of quality cost and time in project delivery	74	38	4	2	3.56	0.65	Agree
Grand Mean						3.25	0.9	Agree

Table 1 above, shows responses on the extent of effectiveness of construction managers on maintaining quality, cost and time within necessary boundaries that ultimately boost their performance. Touts, area boys' unionism and the likes affect the effectiveness of construction management in terms of quality cost and time in project delivery. These responses recorded the highest (74) followed by land disputes and community crisis recorded about 65 responses. Lack of management procedures recorded 51 strongly agreed While Government policies recorded 48 strongly agreed responses. Government policy recorded low because it is not in all cases that government policies affect project delivery.

To further buttress the above, Han, Yusuf, Ismail and Choon, 2012 postulated that great expenditures of time, money and resources, both human and materials are wasted each year because of inefficient or non-existent quality management procedures, while touts and area boy issues and land dispute is prevalent. Crawford, in Bredillet (2015) advocates that a capable project management depends on skills, the personality and the ability to perform with integrated competence.

Construction Management performance

Table 2 Construction Managers performance on project delivery in the study area

S/N	The Requisite for construction manager performance on project delivery in the study area	\bar{X}	Std	Remark
1	Conflict Resolution	3.47	0.91	Agreed
2	Good communication skills	3.39	0.81	Agreed
3	Problem solving skills	3.38	0.94	Agreed
4	Project success within budget and time constraints	3.69	0.70	Agreed
5	Integration of resources and technology	3.46	0.74	Agreed
Grand Mean		3.48	0.82	Agreed

From the analysis in Table 2 the highest mean respondents is 3.69 ± 0.70 that Project success within budget and time constraint which confirms the finding of Sutton, 2011) that a construction manager must have a very important objective such as setting achievable and effective goals monitoring and controlling the construction project and ensuring the success of the project within budget and time constraints. Responses on Good conflict resolution mean 3.47 ± 0.91 . This confirms the findings of Wand and Hannafin (2012) that conflict resolution is a key leadership trait to be developed in a project manager as conflicts frequently occur in construction projects. On problems solving skills, mean respondents of 3.38 ± 0.94 was the highest which is in line with the opinion of Skoyles (2011) and Critendon (2012) that project manager who are also teacher must have the ability to make informed judgments and make decisions that lead to solution of problems when they use data an experience to draw conclusion that make decisions that lead to solutions of problems when they arise. Mean of 3.39 ± 0.81 respondents were of the view that good communication skills is a requisite for construction managers performance on project delivery. Whereas mean respondent of 3.46 ± 0.74 view integration of resources and technology in their project delivery this is in accordance with the findings of Stevenson (2008) that project managers a responsible for the work quality human resources time, communication and cost associated with given project which project manager requires key project management skills in their execution.

Testing of Hypothesis

Table 3: Summary of Multiple Regression Analysis of Effectiveness of construction managers on maintaining quality, cost and time within necessary boundaries and construction Managers performance on project delivery

	Sum of Squares	df	Mean Square	R	R ²	F	Sign(p)	Decision
Regression	0.015	1	0.015	0.494	0.244	0.969	0.002	Reject
Residual	0.047	3	0.016					
Total*	0.063	4						

*Alpha level of significance = 0.05

Results presented in Table 3 above show the Multiple Regression Analysis of the Effectiveness of construction managers on maintaining quality, cost and time within necessary boundaries and construction manager performance on project delivery. Results revealed F-calculated value of 0.969 with a P-value of 0.002, degree of freedom (df) of F (1:4), Regression (R) value of 0.494, and R-Square (R²) of 0.244, testing at 0.05 alpha (α) level of significance. Since, the P-value of 0.002 is less than the alpha (α) level of 0.05, the hypothesis is rejected at $P < 0.05$.

Conclusion is therefore reached that the effectiveness of construction managers on maintaining quality, cost and time within necessary boundaries significantly boost the construction manager’s performance on project delivery in the area of study.

CONCLUSION

Based on the findings, the study concludes that the effectiveness of construction managers on maintaining quality, cost and time within necessary boundaries significantly boost the construction manager’s performance on project delivery in Isoko Community of Delta State.

Recommendations

Based on the findings and conclusions of this study, the following recommendations were made:

1. Workshops should be organized for site construction engineers/managers to equip them on how to construct and draw up other innovative constructional strategies.
2. Government should give incentives and provide good environment for construction managers to thrive in the construction works such as providing security law enforcement agencies that would protect site construction engineers against community youth interfering in their job of construction.

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