

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,  
KUMASI, GHANA**

Exploring Project Management Practices in The Construction Industry of Ghana

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**MASTER OF SCIENCE**

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## DECLARATION

I hereby declare that, this project report is the result of my own work, except for the literature whose sources have been explicitly acknowledged and that, this submission has neither in whole nor in part been prescribed by another degree elsewhere.

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## **ABSTRACT**

Performance of projects cannot be compromised and hence the right project management practices should be adopted. There exists a relationship between project performance and project management practices. While some practices adopted do impact positively on projects, others do not. The aim of this research is to explore project management practices adopted in the construction industry. In order to achieve the research aim, the following objectives were set: to evaluate project management practices adopted in the construction industry; to identify the causes of non-conformance to project management practices in the construction industry; and to assess the effects of project management practices in the construction industry. Literature review was conducted. Quantitative research method was adopted for this study. Questionnaires were distributed to the relevant stakeholders who were consultants and contractors. Simple random and purposive sampling techniques were adopted. Data collected was fed into the Statistical Package for Social Sciences (SPSS) software. Data analytical tools mainly consisted of descriptive statistics and mean score ranking for ranking the various factors. Preparing clear term of references for tendering documents; Conformance to contract requirements; Practising health and safety management; Managing risks effectively; Outline project scope and requirements were the most significant project management practices adopted in the construction industry. Unclear organizational goals or requirements; Project managers lacking necessary training and knowledge; Insufficient time dedicated to planning; Unrealistic project scope; Inadequate project funding were the most severe causes of non-conformance to project management practices. Ensures project aligns with organization's strategic vision; Provides platform for Project Managers to succeed; Helps to steer a project back on course before it is too late; Saves more effort and time on projects; Useful for quality

control were the most important effects of project management practices in the construction industry on cost and time. It is recommended that adequate implementation for projects must exist.

**Keywords: Project management, practices, construction industry**

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## **DEDICATION**

I wholeheartedly dedicate this piece to God and to my loving family.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 BACKGROUND**

A project is a temporary endeavor undertaken to create a unique product, services, or results (Jajac et al., 2009). A typical project moves from being a concept or idea through to feasibility studies, construction and then completion (Jajac et al., 2009). The definition of a successful project management can be described as ascertaining the requirements of the project, identifying the deliverables that will produce an antidote and assigning ownership to the deliverables. Project management refers to activities that involve planning, forming, guiding and controlling. Furthermore, it also entails the motivation of resources on the project to deliver. Essentially, project management is managing a project from beginning to the end and is considered with regards to the different stages in the life cycle (PMI, 2008).

In order to achieve set project objectives, specific Project Management (PM) practices are carried out daily by project managers. It has been argued that the PM practices may vary from organization to organization (Olwale and Sung, 2010). Other project managers however argue that since professional practice within the construction industry is required to follow set down guidelines and ethics, PM practices may not necessarily vary from organization to organization; the purpose of adopting a particular practice may therefore be due to peculiar environmental and social demands of the project at hand. Highly satisfactory performance cannot be compromised on and so is the need for optimum practices (Olwale and Sung, 2010). According to Wang and Huang (2011), performance of projects cannot be compromised and hence the right project management practices should be adopted. There exists a relationship

between project performance and project management practices. While some practices adopted do impact positively on projects, others do not. It is essential therefore to encourage the best practices and the ineffective practices reviewed in order to boost the success of building projects. The performance of projects therefore need to be measured in light of project management practices to enhance the optimum practices (Olwale and Sung, 2010).

Organizations and firms differ in their project management practices. It has been debated in the past that since professional practice in the construction industry must be according to laid down procedures and ethics, project management methodologies and practices do not vary from company to company (Akarakiri, 2006). It is however noteworthy that the adoption of a particular project management methodology may be linked to the peculiar social and environmental demands of the project being constructed.

## **1.2 PROBLEM STATEMENT**

Projects worldwide are now more complicated than before (Atkinson, 1999). These projects require huge capital investments and cut across various disciplines, stricter quality standard, tighter schedules among others (Akarakiri, 2006).

The potential problems associated with a construction projects success increases if there are poor project management practices if stakeholders are unproductively managed. These include insufficient engagement of stakeholders, project managers having unclear objectives of stakeholder management, difficulty to identify the invisible stakeholder, and poor communication with stakeholders (Akarakiri, 2006). The problems associated with poor project management practices are regulatory changes that affect the project or a negative reaction from the community against the project. These challenges affect the financial plan schedules.

A number of construction projects in Ghana and generally in Sub Sahara Africa have poor project performance by having late completion and going over the budget allocation (Assaf, and Al-Hejji, 2006). Generally, the construction industry has poor schedule and cost performance (Jajac et al., 2009). It has a poor reputation with regards to cost and time overruns. While a degree of poor time schedule and cost performance is inevitable in projects, it is largely caused from non-adoption of good project management methodologies (Wang and Huang, 2006).

As project management is carried out daily, several ways of executing the project comes out and become accepted as recognized practices (Jajac et al., 2009). It is not uncommon for a project manager to meet particular environmental and social challenges as an organization and therefore it is imperative for them to adopt some particular project management methodologies. According to Akarakiri (2006), several procedures are executed during project management but not recognized as project management (PM) practices.

The purpose of this research is therefore to explore project management practices adopted in the construction industry.

### **1.3 RESEARCH QUESTIONS**

The following questions have been set to help achieve the research aim:

1. What are the project management practices adopted in the construction industry?
2. What are the causes of non-conformance to project management practices in the construction industry?
3. What are the effects of project management practices in the construction industry on cost and time?

## **1.4 AIM AND OBJECTIVES**

### **1.4.1 Aim**

The aim of this research is to explore project management practices adopted in the construction industry.

### **1.4.2 Objectives**

In order to achieve the research aim, the following objectives were set:

1. To evaluate project management practices adopted in the construction industry;
2. To identify the causes of non-conformance to project management practices in the construction industry; and
3. To assess the effects of project management practices in the construction industry on cost and time.

## **1.5 SCOPE OF STUDY**

Geographically, the scope of this study was limited to the Kumasi metropolis. The contextual scope is consultants and project managers of D1K1 contractors operating in the metropolis. Kumasi was chosen in terms of the geographical scope of this study because of their proximity to the research. They are also densely populated with construction projects and therefore retrieving information for the study was not difficult.

## **1.6 METHODOLOGY**

Quantitative research method was adopted for this study. Literature related to the study was reviewed. This culminated in the development of a research instrument, thus a questionnaire. Questionnaires were distributed to the relevant stakeholders who were consultants and contractors. Efforts were made to ask relevant questions which made it easy for analytical inference and conclusions to the study to be made. Data collected was fed into the Statistical

Package for Social Sciences (SPSS) software. Data analytical tools mainly consisted of descriptive statistics and mean score ranking for ranking the various factors.

### **1.7 SIGNIFICANCE**

Firstly, the findings of this research will serve as a contribution to knowledge in the academia and will spur others on to engage in more research on project management practices. The benefit of this study is very essential to the construction industry in Ghana and project management discipline as a whole. This research will also benefit the Government of Ghana, consultants, clients, as well as contractors. The findings of this study are very crucial for the government including the metropolitan assemblies since there a lot of projects undertaken by the government and project management practices have an impact on these projects.

### **1.8 LIMITATIONS**

This study just like any other research faced unavoidable limitations. Firstly, the short time period for undertaking the research was a limitation. Getting access to some of the data also took time. However, these limitations are intended to serve as recommendations for future studies.

### **1.9 STRUCTURE OF THE RESEARCH**

This research was categorized into five interrelated chapters. The first chapter was the general introduction to the study which included the background to the study, problem statement, aim, objectives and the significance of the study. The second chapter tackled the general review of literature with regards to the subject area of study which was then followed by the third chapter which elucidated the methodology of the study. The research design, population and sample size were all discussed in the third chapter. The fourth chapter dealt with the analysis and

discussion of data and the last chapter which is chapter five summarised the findings and recommendations of the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

Chapter one introduced the research and tackled the background, problem statement, aim, objectives, significance and organization of study. This chapter is the review of related literature. Project management is first defined as well as the roles of project managers. The different project management practices were identified. Furthermore, causes of non-conformance to these practices were also assessed. Finally, the effects of the project management practices were elucidated.

#### **2.2 PROJECT MANAGEMENT**

According to Khazanchi (2005), project management refers to how projects are planned, initiated, executed, controlled. It also involves the closure of team work to help set and achieve stated aim and objectives of a project to achieve success. Projects are temporary in nature and the end products are always unique and distinct. Projects have a clear-cut completion time and ending and can be classified as being time bound. Projects need to be funded in order to be successful. Projects help to bring about change as well as add value. Conforto et al., (2010) opined that projects have a temporary nature and are unique from businesses since businesses are often repetitive, permanent or semi repetitive to being about goods and services. Project management involves skills that are technical as well as competent personnel.

Project management often encounters some hindrances and challenges along the life cycle of the project. The main challenges are hindrances to projects include budget, scope, quality and time. Secondary constraints or complex constraints are made up of allocating and optimizing

needed inputs and their application to achieve goals that have been already defined (Conforto et al., 2010).

Project managers are the professionals who run projects. There are various skills which are required at very large scale in order to become effective project manager. The first and foremost skill is to ensure the time management. Being a project manager, the significance of time is very huge for an individual (Khazanchi, 2005). The timely completed work can help in minimizing the wastage of resources and money. The efforts could also be reduced. It is to acknowledge that the time management has direct relationship with the cost structure of any project. If a manager is not able to complete the work or task within the stipulated period of time then it delays the commencement of work and it can definitely put its impact at the expenses and budgeting process (Conforto et al., 2010).

Project managers are representatives of the project clients. The project managers are therefore the determinants of the project and they execute it to meet the satisfaction of the client. Project managers ought to make sure they adapt to the different internal procedures involved in the contract and then liaise with the other project stakeholders. This is important in helping achieve standards set for quality, time and client's satisfaction (Gray and Larson, 2008). Harold (2003) explained that in project management, the project managers are saddled with the obligation of ensuring the triple constraint is met thus: scope, time and cost.

### **2.2.2 Roles and Skills of Project Managers**

Project managers are the professionals managing projects (Young-Hoon, 2005). Project managers are key and accountable in accomplishing the required goals of the project. Important project management responsibilities comprise developing attainable and achievable

project objectives, building the requirements of the project. Project managers are also saddled with the responsibility of managing the triple constant which consists of time, cost and scope (Harold, 2003).

There are various skills which are required at very large scale in order to become effective project manager. The first and foremost skill is to ensure the time management. Being a project manager, the significance of time is very huge for an individual (Khazanchi, 2005). The timely completed work can help in minimizing the wastage of resources and money. The efforts could also be reduced. It is to acknowledge that the time management has direct relationship with the cost structure of any project. If a manager is not able to complete the work or task within the stipulated period of time then it delays the commencement of work and it can definitely put its impact at the expenses and budgeting process (Conforto et al., 2010).

With the help of time management, the project manager can increase effectiveness in terms of allotting the right amount of time to each and every task. The task or complete project could be divided into sub tasks and can definitely be accomplished as per allotted time. The time management is actually a part of personality and characteristics as well. The time management also includes the discipline and punctuality to do all the tasks within the stipulated period of time. The project manager is required to focus upon the development of habits like punctuality so that the alignment between personal and professional behaviour could be established in an appropriate manner. The significance of time management skill is that the planning to do all the tasks could be done in proper way and the project manager can contact with other people associated with the project. The time management can also help in taking the decisions as per the need and demand of situation of task. Thus, it is one skill or personality trait which can affect the effectiveness of project manager (Abbasi and Al-Mharmah, 2000).

Resource management is another very significant skill that has direct relationship with the effectiveness of the manager. Resource management is the management of resources like collecting, processing, acquiring the raw material on time, as per the need, managing the inventory, avoiding the over stock and situation of under stock, ensuring the quality, managing the price etc (Khazanchi, 2005).

It actually involves the technical knowledge as well. The project manager has to focus upon the fact that the resources must be utilized in most appropriate manner so that cost could be diminished. Further the resources management includes the knowledge about various project management tactics and techniques that could play immense role in bringing the improvement in working of any project. These tactics and techniques can help in allocating the resources to various departments in effective way and most importantly the availability of resources could be ensured. The resource management could be treated as field knowledge or expertise related to particular project. It is a skill that could deliver benefits to both the organization and an individual. The major benefit of developing the skill like resource management is that the quality of raw material could be maintained. The project manager gives preference to allocate the financial resources as per the requirement. The wastage could be diminished as the project manager is dedicated to control the usage of resources within the project. Further the project manager can definitely become effective if he possesses the knowledge of new techniques that have been introduced to manage the resources for the particular project. Therefore, these are second most crucial and significant skill which is essential to become effective project manager. With the help of these techniques or skills the effectiveness of the project could be increased at very large scale.

A construction project in much the same way as requires administration and the successful supervisor displays great authority (Conforto et al., 2010). At an administrative level (venture chief and administrator) people are occupied with affecting different undertaking substances to perform determined undertaking errands. The director's capacity to impact the speed, quality, and cost of these things puts the undertaking's prosperity or disappointment solidly on their initiative abilities. Development directors must be able to "lead the group inside a moderately unstructured condition, coordinate individual requests, necessities, and constraints into choices that will influence general undertaking execution (Schein, 2010). On a development venture, the supervisor's range of abilities shifts broadly. Commonly the group pioneer and trough are utilized conversely. For the reasons for this postulation we have characterized initiative as the capacity to impact individuals. The connection amongst administration and initiative must be dissected. Note that administration and authority are both essential aspects of a development of a development venture. This task could comprehensively characterize the venture director and administrator's position as administrative. Inside that administrative position, authority is a fundamental and basic aptitude (Conforto et al., 2010).

There are a wide range of abilities that go into dealing with a venture that are particular from authority. There are three ranges of abilities that were basic to organization; specialized aptitude, human expertise, and theoretical ability. Specialized aptitude is critical in the lion's share of positions on the planet. A predetermined assignment is being performed, (for example, sawing logs) and the capability of the subject in finishing that undertaking bears his aptitude level. A logger's specialized ability would rely upon the speed and capability with which he could saw logs. It is an exceptionally organized, redundant process that requires

information of instruments and the subject (a tree) with minimal outside communication (Conforto et al., 2010).

According to Carson et al., (2013) team leadership is not just spoken communication but suggest that team leadership is something that happens inside people's heads and there are a number of things that have to happen in other for teams to think and work together.

When teams collaborate, it enhances their effectiveness and efficiency which consequently affects their output and project performance. Team collaboration is very vital when it comes to meeting project cost requirements. Management of outcome talks about how well a team leader is able to handle the outcome of his decisions. This role of a leader helps employees to recognize the importance of taking responsibilities of their actions and also maintain a cordial work environment. Facilitation of support talks of how the team leader supports and help his employees on the field (Conforto et al., 2010).

In like manner on a development venture there are different substances that are required for their specialized expertise. The establishment of brick work or a kettle requires information and aptitudes in a profoundly tedious assignment that is basically particular to the idea of the undertaking. Human aptitude would address the authority abilities of the administrator and addresses his capacity to impact bearing and exertion. The foreman or administrator of a team of logger's verbalizes that a whole wood must be chopped down before the finish of the week. He coordinates four teams of two loggers. He guides four teams of two loggers to begin at each finishes of the timberland and work internal until the point when they meet in the centre. The director's capacity to unmistakably observe the wide picture of what is endeavouring to be refined (chopping down a woods) and enhancing the way in which it is done exhibits the two his human and applied expertise. The creation and arrangement of the groups that are

assembled identify with his capacity to adequately lead and inspire the people engaged with the procedure. Inside these expansive administrative classes, it is the human and theoretical aptitude to which authority applies (Conforto et al., 2010).

Administration can be comprehensively connected to the idea of a development venture director or administrator's position, yet authority is an aptitude imperative to fruitful administration. With the above talk a few critical variables rise:

- Leadership is characterized as affecting individuals.
- Leadership is an ability in a way.
- Leadership is of importance to a venture's prosperity or disappointment.

Understanding the above focal inhabitants, the need is set up to better comprehend the criteria by which administration is additionally characterized, displayed, and connected to the development administration process.

## **2.3 TYPES OF PROJECT MANAGEMENT ORGANIZATIONS**

### **2.3.1 Functional Organizational Structure**

According to PMI (2013), the management of functional organizational structure in the organization's hierarchy level starts as soon as the project commences. Different project components are taken according to their units of function and the units are charged according to component. Top hierarchy managers are in charge for liaising and coordinating the roles and activities. A lot of technical personnel are used. A disadvantage that occurs is that there is lack of adequate focus. Furthermore, challenges are experienced in the inter departments.

### **2.3.2 Project based organization structure**

Organizations that have structure of project based indicates the process where project teams are created that are distinct, independent and separate from the main unit of the company. They have their own management and technical staff. The organization gives out some of the resources to the project members while the project's manager is given the biggest implementation responsibility as the project progresses (Serra and Kunc, 2014). There are a lot of benefits with this type of project. In the first instance, project manager is in full control and the project members have to report to him or her first. Decisions involving the project are taken quickly. Project members are inspired to work with the highest motivation in attaining the organizational goals. The roles and responsibilities for the team members are clearly spelt out. However, the disadvantage is that, if the projects are many, it will lead to duplication since every project possesses its own team (Serra and Kunc, 2014).

### **2.3.3 Matrix Organization**

According to Yazici (2009), matrix organization is an organizational structure that is hybrid in nature. It loads project management structure levels on the functional hierarchical structure. Different forms of matrices exist because of the comparative powers of functional managers and project managers. These matrices are project matrix and functional matrix. The functional manager has more powers than the project manager in the functional matrix. But in the project matrix, project managers wield much more power than the functional managers. According to Yazici (2009), in the balance matrix, there is equal sharing of power. Several advantages exist. Resources in the functional structure are sharable among plenty projects and this lowers staff redundancy. Furthermore, there is a lot of attention given to the project.

## **2.4 PROJECT MANAGEMENT PRACTICES**

### **2.4.1 Create a project plan**

One significant project management practice is creation of a project plan that will document the phase of project planning (Jajac et al., 2009). Work Breakdown Structure (WBS) are identified. These comprise steps that are in hierarchies, as well as the tasks and activities required to finish up the project. Afterwards, an assessment of effort level needed to operate each step and activity is noted (PMI, 2008). These tasks and activities are sequenced and there is allocation of resources. Project schedule that is detailed is also developed. Project plan is a significant tool utilized by project managers in assessing project progress over the life and duration of the project (Abbasi and Al-Mharmah, 2000).

### **2.4.2 Create a resource plan**

Creation of a resource plan is the next thing considered after a project plan is formed (Abbasi and Al-Mharmah, 2000). This comprises the level of resources that will be needed in undertaking the various tasks and activities that have been listed in the project plan as well as their allocation (Harold, 2003). Even though, some generic resources may have been allocated already in the project plan, a detailed resource plan is still needed for the following:

- Type of required resource like equipment, labour and material resources
- Quantities of the resource types needed
- Responsibilities and roles as well required skills of the personnel
- Specifications of the equipment needed
- Quantities and items of materials needed

Schedules are prepared for each of the resource type in order to assist the project manager review allocation of resources at the various stages in the project life cycle.

#### **2.4.3 Create a financial plan**

Financial plans are created to help know the entire amount of cash needed in undertaking each project phase or simply the budget of the works (Abbasi and Al-Mharmah, 2000). Entire costs for the equipment, labour as well as materials is quantified (Serra and Kunc, 2014). A schedule for expenses is prepared and this allows project manager measure forecasted amounts as against actual monies used throughout the duration of the project. When financial plans are very detailed in the project life cycle, this meets the expectation of the client having his or her project delivered within set budget (Serra and Kunc, 2014).

#### **2.4.4 Create a quality plan**

It can be challenging trying to meet the expectations of quality of the customer (Serra and Kunc, 2014). A quality plan is created to help ensure that expected expectations regarding quality are well defined and are achievable (Yazici, 2009). Quality plans must:

- Clearly define ‘project quality’
- Identify clear and definite quality targets for each project deliverable. Every quality target must provide a set of standards and criteria that are achievable and that can meet the needs of the client or customer
- Provide plan and list of activities that would convince the client that targets set requiring quality will be met (plan of quality assurance)
- Evaluate techniques that will be used in controlling quality levels of the various deliverables as will be built (plan of quality control)

Apart from reviewing quality of project deliverables, there is the need to also have a review of the quality in management processes that have been applied. Quality plans summarize the various management processes done when the project was ongoing including cost, time, risk, quality, change, procurement, issue, communications and acceptance (PMI, 2008).

#### **2.4.5 Create a risk plan**

Another important project management practice is creating a risk plan that will document and record all anticipated project risks (Jajac et al., 2009). Project plan must identify all the needed actions that will prevent and mitigate risks that will occur. A well-developed risk plan is a crucial activity in the phase of planning since it helps to scrutinize all the project risks before the project starts being executed (Serra and Kunc, 2014).

#### **2.4.6 Create an acceptance plan**

To help achieve an excellent project, the project deliverables must meet or even go beyond set requirements to the admirations and satisfaction of all the project stakeholders (Jajac et al., 2009). Acceptance plans are needed to create clarity in completion criteria for every deliverable as well as provide a schedule for reviews of acceptance. The reviews give the customer or client the chance to evaluate each of the project deliverable and formally accept the one that meets requirements (Serra and Kunc, 2014).

#### **2.4.7 Create a communications plan**

Communications plan creation is a critical project management practice required (Jajac et al., 2009). It is essential to identify ways in which stakeholders will have effective communication as the project progresses (Jajac et al., 2009). This plan should be developed before the project is executed. Communications plan is to help identify the required information to be distributed

as well the statistical inferences that will take place and the people to be in charge (Schein, 2010).

#### **2.4.8 Create a procurement plan**

One critical project management practice in the phase of planning is to evaluate project elements that will be bought from external sources and suppliers (Yazici, 2009). Procurement plans gives a detailed specification of the goods and services that will be gotten and the justification for procuring these products from external source instead of within the organization as well as the schedule for the project delivery. The procurement plan also explains the process used in selecting the preferred supplier from the tender process and how products will be ordered and delivered thus the process of procurement (Schein, 2010).

#### **2.4.9 Contract the suppliers**

Even though, there may be external suppliers who will be selected at various stages of the project, it is expedient to select suppliers after documentation of project plans but before execution phase (Jajac et al., 2009). At this stage, the project manager will have a clearer picture of the responsibilities of the suppliers as well as how they will deliver the products (Schein, 2010). A tender process that is formal helps to select and short list suitable and capable suppliers. Tender process comprises developing work statement, and requests for submitting offers. When a supplier is selected in the selection process, a contract is developed to govern the process of product delivery.

#### **2.4.10 Perform a phase review**

After the planning phase is over, there is the performance of a phase review. This project management practice is to ensure that the project has been very well planned and will be achievable in the long run (Yazici, 2009).

#### **2.4.11 Project Execution**

This project management practice is the longest regarding duration. It is the phase where the deliverables are constructed physically and handed over to the client for his or her approval (Yazici, 2009). In helping ensure that customers' needs are met, project managers continually monitor and control resources, activities, expenditure needed to make sure the project goes on as planned (PMI, 2008).

This phase comprises the implementation of plans that have been created at the planning stage. When the plans are being executed, series of management processes are done to help in monitoring and controlling the project execution. These include risks, quality, resources and product delivery (PMI, 2008).

#### **2.4.12 Build the deliverables**

This phase encompasses the actual construction of the project (Serra and Kunc, 2014). All activities that will be undertaken in constructing the variables will be varying and will depend on project type to be built. Activities may either be constructed in sequential order or they may be constructed in separate deliverables till requirements of stakeholders are met. Irrespective of the construction method in delivering the deliverables, there ought to be consistent monitoring as well as control processes to ensure acceptable standards are met.

#### **2.4.13 Monitor and control**

As the physical infrastructure is being built, the project manager also takes up the project management practices of monitoring and controlling. This is very important in ensuring the success of the project (PMI, 2008; Jajac *et al.*, 2013).

#### **2.4.14 Time Management**

Management of time refers to the process used to record as well as control the time spent in constructing a project (Jajac et al., 2009). Since time is a scarce commodity in projects, every team member must endeavour to record the time spent on a specific activity by using a time sheet (Jajac et al., 2009). This will ensure that the project manager can control amounts of time used in delivering project activities. Timesheet register must be completed so as to give a summary of time spent in order to update the project schedule consistently (Serra and Kunc, 2014).

#### **2.4.15 Cost management**

Cost management is the process by which costs/expenses incurred are formally identified, approved and paid (PMI, 2008). Different expenses forms are prepared for manpower, equipment and materials. Expense forms are approved by the project manager and recorded within a register for auditing purposes (Jajac et al., 2009).

#### **2.4.16 Quality management**

Quality refers to the level or extent by which final deliverables are acceptable to clients and customers (PMI, 2008). Quality management as a process ensures quality is controlled and assured. This is done by utilizing quality assurance and control techniques. Quality reviews are frequently undertaken, and the results are recorded using a review form of quality (Conforto et al., 2010).

#### **2.4.17 Change management**

The project management process called change management refers to the process whereby changes are formally requested and made to deliverables, scope, resources and time scales and approval sought before implementation (Conforto et al., 2010). A significant aspect of the role

of project managers is change management within the construction or project (Jajac et al., 2009). This can be achieved by clearly understanding the business drivers and systems that require change. It also comprises the identification of costs as well as benefits that the change will bring about. It involves the formulation of a plan that is structured and useful for change implementation. In requesting project change formally, there has to be completion of change form (Conforto et al., 2010).

## **2.5 CAUSES OF NON-CONFORMANCE TO PROJECT MANAGEMENT PRACTICES**

According to Oluwale and Sung (2010), non-conformance is defined as deviation in terms of quality during the construction execution. Whenever there is a deviation in project management methodology, a non-conformance report should ideally be issued (Oluwale and Sung, 2010). This non-conformance leads to rectification, repair or rework of an activity that ultimately result in time and/or cost overrun. Also, non-conformance can have a direct or indirect impact on the successor activities and subsequently on the project performance (Jajac et al., 2009).

### **2.5.1 Lack of risk management**

Risk Management is a set of components/elements that provide the foundations for designing, implementing, monitoring, reviewing, and continually improving risk management within the construction industry (Akarakiri, 2006). When there is lack of policy and procedures that establish a framework and system for reviewing and monitoring risks, this leads to non-conformance to PM practices. Risk compliance obligations, when breached, pose risks to the project and makes it unable to achieve its strategic objectives (Jajac et al., 2009). Some of

these risks will have the potential to have a major impact on the construction project and therefore may require more specialised attention (El-Mashaleh *et al.*, 2006).

### **2.5.2 Inadequate documentation**

When there is an inadequacy in documentation, it leads to challenges in implementing PM practices (Akarakiri, 2006). Past studies have clearly shown that, the major cause of construction failure is improper coordination of team members and ineffective flow of information to project participants (Akarakiri, 2006).

### **2.5.3 Poor team communication**

A study conducted by the Project Management Institute (PMI) revealed that ineffective communication had a negative impact on project practices and successful project execution. This is not surprising since anyone ever involved in a project of any size knows this basic fact (Jajac *et al.*, 2009). What is surprising is the number of projects still lacking effective communications management and the resulting magnitude of economic impact this deficiency has on project management methodologies. Although strides have been made to improve formality, ‘communications’ are often still regarded by management as something that just ‘happens’ as part of regular project management tasks, using basic, generic tools, such as email and/or spreadsheets. However, without a well thought out communication strategy and tools designed to store and regulate project information and communications, many companies are throwing millions of dollars out the window with every project they attempt to execute (Jajac *et al.*, 2009).

#### **2.5.4 Unrealistic schedule**

What makes a project successful and implementing project practices is “a realistic schedule”.

When there is unrealistic schedule, it leads to non-conformance of project management methodologies (Akarakiri, 2006). An unrealistic schedule does not include a detailed knowledge of the work to be done. It also has tasks sequences in wrong order. It does not account for external constraints beyond the control of the team (Jajac et al., 2009). Unrealistic schedules cannot be accomplished on time given the availability of sufficiently skilled and enough resources. Finally, an unrealistic schedule does not take into consideration all the objectives of the project (Olwale and Sung, 2010).

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

Chapter two detailed out the literature review on project management practices. This chapter is the research methodology. Sections tackled include research strategy, research design, sampling techniques as well as the data analysis.

The previous chapter was the review of pertinent literature on abandonment of school. This chapter encapsulates the methodology adopted. The research strategy, design, method, techniques are all explained. Furthermore, collection of data, analysis and interpretation are explained.

#### **3.2 RESEARCH DESIGN**

Research is a coherent and systematic investigation done on a phenomenon or problem (Yilmaz, 2013). Research design refers to the overall procedures and methods adopted to inquire, collect and analyse variables and their relationship with a problem or study in a systematic and logical way (Kothari, 2004). Research design outlines the framework that guides the researcher in investigating, collecting and analysing data to answer a research question and it delineates the approach, purpose, strategy and method used in the study (Creswell and Clark, 2017). Research purpose is the motivation or reason for carrying out a study. It is usually an elucidative statement that defines the goals of the study (Gerring, 2006). Conventionally, research purpose can be exploratory, explanatory or descriptive (Yin, 2017). A research is said to be exploratory when it is carried out to investigate a problem or phenomenon to generate hypotheses from data collected on the subject. The research is aimed

at establishing the relationship between variables of the study (Kothari, 2004). A research is said to be explanatory if it is done on a problem or phenomenon that has not been fully understood, that is, it is done to increase understanding on the cause-effect relationship and other parameters pertinent to a subject (Bless, Higson-Smith and Kagee, 2006). A descriptive research is done to describe features or variables of a phenomenon and their relationship among themselves (De Vaus and De Vaus, 2013). Research approach entails the layout and plan for the research and it spans from the broad presumptions of the research questions to the precise methods used to collect, analyse and interpret data (Elliott, 2005). Research approach is generally categorised into two, namely the deductive approach and the inductive approach (Bryman, 2016). A deductive research approach is concerned with testing or validating hypotheses while an inductive research approach is aimed at generating a hypothesis from data (Gill and Johnson, 2010). Research strategy is the precise procedure of action adopted to give direction to the researcher's efforts and thoughts toward producing quality results from a research (Corbin, Strauss and Strauss, 2014). Research strategy may be a case study, a survey, an experiment etc. A case study research strategy is an empirical inquiry that examines the underlying principles of a problem within its real-life context (Yin, 2017). Research methods are concerned with the approach used in the collection of data for the research. The common research methods used are the qualitative method and the quantitative method (Brace, 2018). Quantitative methods focus on the objective evaluation of phenomenon using mathematical, numerical or statistical analyses of data obtained through questionnaires, polls and the like (Brace, 2018). Qualitative methods focus on uncovering trends by delving into opinions and thoughts to understand a phenomenon through observations, interview, group discussions etc. (Lindlof and Taylor, 2017).

The purpose of this study is to assess the effect of digitalisation on bank performance. The study delineates and describes aspects of digitalisation in banks and the concept of bank performance, and then investigates the relationship between digitalisation and bank performance. The study focuses on the SGG and the instruments for collecting data are questionnaires, hence the study is a descriptive case study that adopts the quantitative method of data collection.

### **3.3 TARGET POPULATION AND SAMPLE SIZE**

The total set of individuals on whom a research is conducted to generate representative conclusions is referred to as the target population of a study (Rea and Parker, 2014). The target population has certain characteristics of interest for which they are the choicest group for the study although they may vary in other characteristics (Kemparaj and Chavan, 2013). The target population is the group from which the sample size is taken. Sample size refers to the number of respondents that is used for a study. It is imperative that the sample size used for a research should be representative of the target population in order to arrive at a fair result and conclusion on the research (Denscombe, 2014). For the purpose of this study, consultancy firms and contractor firms in Kumasi were the target population.

From the list obtained from the Ministry of Works and housing, the population of D1K1 contractors and consultancies in good standing in Kumasi is 120.

Using Yamane formula, the sample size obtained was 92

Using Yamane Formula,

$$n = \frac{N}{1 + N(e)^2}$$

Where N=Population

n= sample size

e= level of precision (0.05)

$$n = \frac{120}{1 + 120(0.05)^2}$$

N=92.31 (approximately 92 number)

### **3.4 SAMPLING TECHNIQUES**

Sampling techniques are the strategies used in recruiting or selecting respondents in order to collect data for a research (Fowler, 2013). Purposive sampling coupled with snowball techniques were adopted. The snowball technique was used because the first respondent was asked to assist in selecting the next respondent in order to have a respondent from every department of the bank.

### **3.5 SOURCES OF DATA FOR THE STUDY**

Data refers to the facts and figures collected for analysis (Gelman *et al.*, 2013). In research, sources of data are primarily from a primary source or a secondary source. A primary source of data refers to data that have been collected by the researcher for a study. Primary data are collected using polls, surveys, interviews, questionnaires, observations, group discussions etc. The interview guides, questionnaires, tape recorder and the like are called instruments of data collection (Kajornboon, 2005). The primary data used for this study comprised of questionnaires. Secondary data refers to all the other data used by the researcher for the study that were collected by someone other than the researcher. The secondary data used for this

study included research reports, journals. The secondary data served as the basis for the conceptual framework of the study.

### **3.6 INSTRUMENTS AND PROCEDURES FOR DATA COLLECTION**

Questionnaires were administered to the respondents at contractor firms and consultancy firms. The questionnaires comprised four sections, namely A, B and C. Section A contained questions that sought information on the profile of the respondents, section B contained questions the sought to assess project management practices in the construction industry, and section C contained questions that sought to identify the causes of non-conformance to project management practices. Section D was on the effects of project management practices in the construction industry. Likert scale numbered 1 to 5 were used in assessing the objectives of section B, C and D. The Likert scale ranged from 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree and 5 = Strongly Agree

Introductory letters were sent, and this gave permission to interact with the respondents. Due to the busy schedule of respondents, appointment was made with them prior to administering the questionnaire. This ensured maximum cooperation from the respondents because the questionnaire was administered when each respondent was less busy.

### **3.7 VALIDITY AND RELIABILITY OF DATA COLLECTION INSTRUMENT**

Validity is the amount to which a test estimates what it looks to quantify. Validity is the precision and importance, which rely upon the investigations' impacts. The questionnaire and interview guide were given to experts to go through before subsequent distribution. The

research supervisor also approved the research instruments before distribution. These helped improve the validity of the study.

Reliability is used to check for internal consistency. The Cronbach's Alpha coefficient was used to test for reliability using SPSS software. The coefficient value of 0.70 was exceeded thereby implying the research instruments were valid.

The concepts of validity and reliability are prerequisite parameters that are used to ascribe quality to research findings (Catherine *et al.*, 2013). These parameters are used as a measure to decide whether the findings of a research would be accepted by the science community or otherwise. (Fanelli, 2009). Validity is concerned with how the research satisfies all the requirements of scientific research methods (Shenton, 2004). Validity describes the coherency of the methods used in the research. Reliability is the quality of being consistent and dependable (Long and Johnson, 2000). Reliability in research is the indication of the likelihood that a research would yield the same results repeatedly when the same research methods are used under similar conditions (Sekaran and Bougie, 2016). Reliability in research is aimed at reducing biases and errors in the research to the minimum (Button *et al.*, 2013).

In consonance to the principles of validity and reliability, the researcher outlined the procedure used in selecting the sample (i.e. random sampling for customers and purposive sampling for staff), selecting the instrument of data collection (i.e. questionnaires), designing the questionnaire and in administering the questionnaire.

The questionnaires were pre-tested. This was done to clear all ambiguity in the questionnaires and to ascertain the general nature of the data collections sites. Respondents were made to give their responses under conditions of anonymity to ensure honesty in the responses given. Questionnaires were only given to respondents who were willing to participate in the research.

### **3.9 ETHICAL CONSIDERATIONS**

Ethics in research is concerned with the interactions between the researcher and the respondents of the research (Sarantakos, 2012). In social research, there has been a universal consensus on the necessity to protect the interests of the participants by adhering to certain principles that are universally accepted as research ethics. These principles include respect for persons, beneficence, justice, respect for communities among others (Sims, 2010; Emanuel, Wendler and Grady, 2008). This study is a field-centred research, so in consonance with universally accepted principles of research, certain ethical concerns were addressed. Letters of introductions that delineated the aim and objectives of the research were sent to construction and consultancy firms where primary data were collected. Consent of respondents were sought before the questionnaires were administered to them. In pursuance of respecting the privacy of respondents, names of respondents were not asked in the questionnaire. A third party was not allowed access to data collected for the research unless it was needful.

### **3.10 FIELD EXPERIENCE**

Field experience is concerned with incidents that occurred at the site of data collection that had the capacity of affecting the research (Given, 2008). In the process of data collection, certain hindrances were encountered. Having access to respondents in some of the firms was difficult because some of them said they had a tight schedule and were busy at the moment the researcher met them.

### **3.11 DATA PREPARATION AND STATISTICAL TOOLS INTENDED FOR THE ANALYSIS**

The data collected from the respondents were collated, sorted and analysed with the Statistical Package for Social Science (SPSS) version 20. Descriptive statistics comprising frequency distribution, percentages, mean score ranking among others were used to analyse the data to ensure easy understanding of the analysis. Tables were used to present quantitative data by arranging facts and figures in rows and columns. These facts and figures were examined systematically. Frequency counts that shown the distribution of respondents' responses were translated into percentages. Interpretations of the analysed data were done based on statistical generalisation. The principal statistical tool that was utilized is non-parametric statistical testing. The demographic data was analysed using descriptive statistics (specifically percentages and frequencies) while the dependent variables were analysed using mean score ranking. The mean score ranking consisted of mean (average) scores as well as standard deviation values. These helped in ranking the variables according to their order of significance.

## **CHAPTER FOUR**

### **DATA ANALYSIS AND DISCUSSION**

#### **4.1 INTRODUCTION**

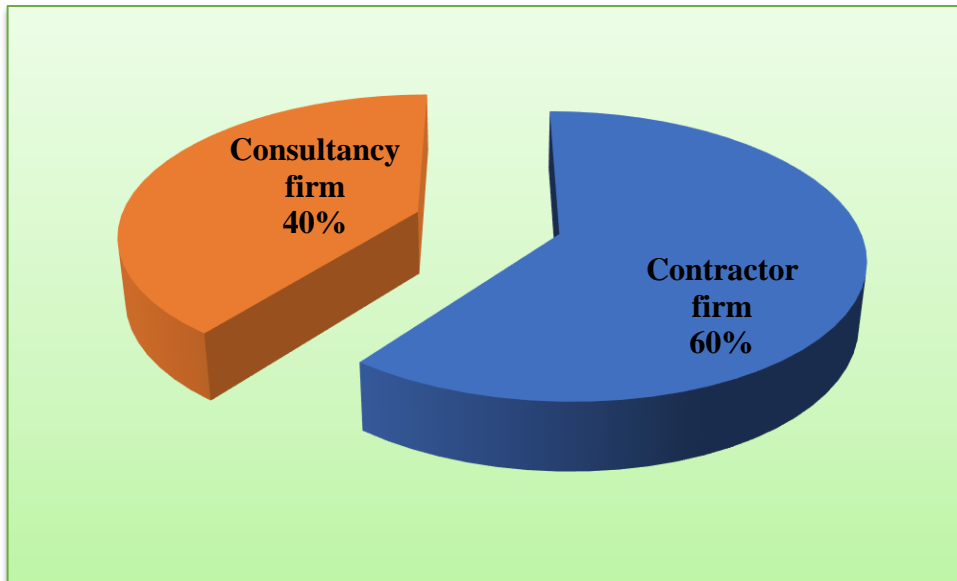
This chapter documents the analysis of data obtained from the field as well as their discussion using the software called Statistical Package for Social Sciences (SPSS). Analytical tool adopted for the analysis comprised descriptive statistics using simple frequencies and mean score ranking. The descriptive statistics was aided with Excel software and were presented in charts, tables and figures. Ninety-two questionnaires were distributed but fifty (50) were retrieved representing a response rate of fifty-four percent. This response rate is adequate. The works of Ahadzie (2007); and Owusu and Badu (2009) achieved response rates of 45.0 % and 53.7 % respectively, therefore the response rate for this study is justifiably sufficient.

#### **4.2 DEMOGRAPHY OF RESPONDENTS**

The demographic profile is necessary because it prove that the questionnaires were filed by the target respondents and thus give credence to the findings of the study. It also leads to improved confidence in the responses.

##### **4.2.1 Category of respondents' firm**

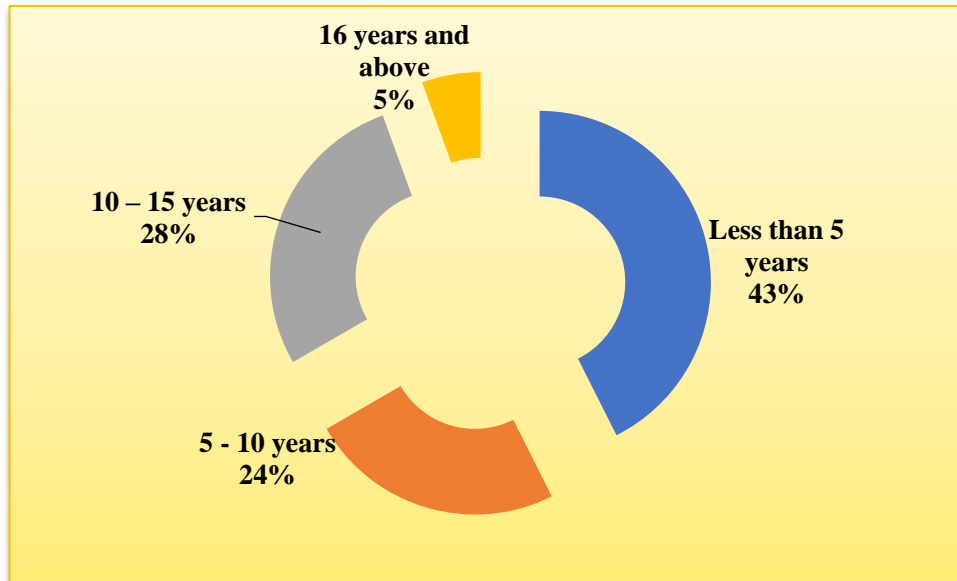
In this section, the respondents for the study were asked to indicate which category of firm they belonged to. From Figure 4.1 below, 60 percent of the respondents were working with the contractor's firm while the remaining 40 percent of the respondents were working with the consultant's firm. The study has a fusion of respondents working with both contractors and consultants which is good.



**Figure 4.1 Category of respondents' firm**

#### **4.2.2 Experience of respondents**

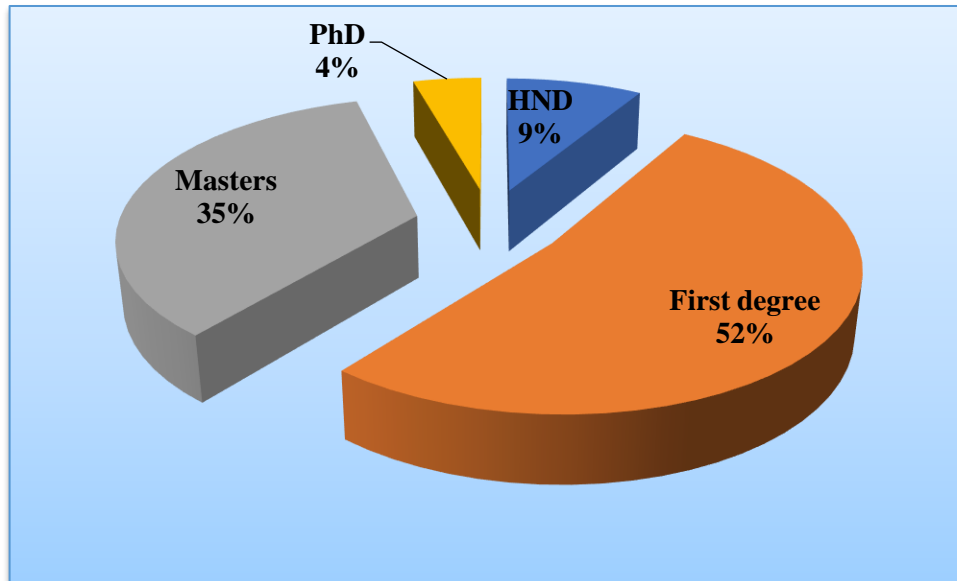
This section sought to know from the respondents the number of years they had worked in the construction industry. From Figure 4.2 below, 43 percent of the respondents have less than 5 years of experience. 24 percent of the respondents have 5-10 years of experience. 28 percent of the respondents have 10-15 years of experience. The remaining 5 percent of the respondents have experience of 16 years and above. It can be seen that all the respondents for the study have adequate experience. Majority of respondents also have less than 5 years of experience.



**Figure 4.2 Experience of respondents**

#### **4.2.3 Educational level of respondents**

The respondents for the study were asked to indicate their highest level of education. From Figure 4.3 below, 9 percent of the respondents have HND. 52 percent of the respondents have first degree. 35 percent of the respondents have master's qualification while the remaining 4 percent of the respondents have PhD. All respondents for the study are well knowledgeable and hence their responses can be trusted.



**Figure 4.3 Educational level of respondents**

#### **4.3 PROJECT MANAGEMENT PRACTICES ADOPTED IN THE CONSTRUCTION INDUSTRY**

Respondents for the study were asked in this section to rank the project management practices adopted in the construction industry on a Likert scale of 1 to 5 where 1- Not at all, 2- Rarely, 3- Sometimes, 4- Frequently, 5- Every time. From Table 4.1 below, *preparing clear term of references for tendering documents* was ranked 1<sup>st</sup> with a mean of 4.23 and standard deviation of 0.938. *Conformance to contract requirements* was ranked 2<sup>nd</sup> with a mean of 4.21 and standard deviation of 0.834. *Practising health and safety management* was ranked 3<sup>rd</sup> with a mean of 4.19 and standard deviation of 0.860. *Managing risks effectively* was ranked 4<sup>th</sup> with a mean of 4.13 and standard deviation of 0.922. *Outline project scope and requirements* was ranked 5<sup>th</sup> with a mean of 4.12 and standard deviation of 0.881.

#### **Discussion**

Communications plan creation is a critical project management practice required. It is essential to identify ways in which stakeholders will have effective communication as the project progresses (Jajac et al., 2009). This plan should be developed before the project is executed. Communications plan is to help identify the required information to be distributed as well the statistical inferences that will take place and the people to be in charge (Schein, 2010).

One significant project management practice is creation of a project plan that will document the phase of project planning. Work Breakdown Structure (WBS) are identified. These comprise steps that are in hierarchies, as well as the tasks and activities required to finish up the project (PMI, 2008). Afterwards, an assessment of effort level needed to operate each step and activity is noted. These tasks and activities are sequenced and there is allocation of resources. Project schedule that is detailed is also developed. Project plan is a significant tool utilized by project managers in assessing project progress over the life and duration of the project (Abbasi and Al-Mharmah, 2000).

Another important project management practice is creating a risk plan that will document and record all anticipated project risks. Project plan must identify all the needed actions that will prevent and mitigate risks that will occur. A well-developed risk plan is a crucial activity in the phase of planning since it helps to scrutinize all the project risks before the project starts being executed (Serra and Kunc, 2014).

The findings agree with past literature.

**Table 4.1 Project management practices adopted in the construction industry**

<b>PRACTICES</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Rank</b>
Preparing clear term of references for tendering documents	4.23	0.938	1 <sup>st</sup>
Conformance to contract requirements	4.21	0.834	2 <sup>nd</sup>
Practising health and safety management	4.19	0.860	3 <sup>rd</sup>
Managing risks effectively	4.13	0.922	4 <sup>th</sup>
Outline project scope and requirements	4.12	0.881	5 <sup>th</sup>
Monitoring project schedule	4.10	0.776	6 <sup>th</sup>
Selecting project consultants competitively	4.08	0.630	7 <sup>th</sup>
Managing communication among all relevant parties effectively	4.06	0.911	8 <sup>th</sup>
Managing costs so it does not exceed the allocated budget for the project	4.01	0.614	9 <sup>th</sup>
Preparing procurement plan	3.97	0.683	10 <sup>th</sup>
Quick response to variations	3.96	0.669	11 <sup>th</sup>
Adequacy of staffing level	3.91	0.921	12 <sup>th</sup>
Setting standards for the delivery of project outputs	3.89	0.923	13 <sup>th</sup>
Contractor confirming all instructions, verbal or written before executing	3.72	0.803	14 <sup>th</sup>
Extent of team-building activities	3.68	1.059	15 <sup>th</sup>
Receiving feedback from team members on project management methods	3.45	0.934	16 <sup>th</sup>
Preparing communication plan for all related parties	3.32	1.023	17 <sup>th</sup>
Documenting and archive all documentations for the project after finishing	3.30	1.110	18 <sup>th</sup>
Preparing detailed work definition document	3.21	0.985	19 <sup>th</sup>

#### **4.4 CAUSES OF NON-CONFORMANCE TO PROJECT MANAGEMENT PRACTICES**

Respondents for the study were asked in this section to rank the project management practices adopted in the construction industry on a Likert scale of 1 to 5 where 1- Not at all, 2- Rarely, 3- Sometimes, 4- Frequently, 5- Every time. From Table 4.1 below, *Unclear organizational goals or requirements* was ranked 1<sup>st</sup> with a mean of 4.18 and standard deviation of 0.893. *Project managers lacking necessary training and knowledge* was ranked 2<sup>nd</sup> with a mean of 4.11 and standard deviation of 0.992. *Insufficient time dedicated to planning* was ranked 3<sup>rd</sup> with a mean of 4.09 and standard deviation of 0.658. *Unrealistic project scope* was ranked 4<sup>th</sup> with a mean of 4.06 and standard deviation of 0.702. *Inadequate project funding* was ranked 5<sup>th</sup> with a mean of 4.00 and standard deviation of 1.023. The findings agree with past literature.

#### **Discussion**

When there is an inadequacy in documentation, it leads to challenges in implementing PM practices (Akarakiri, 2006). Failure to provide this could lead to rework when contractors act otherwise due to communication problems (Jajac et al., 2009). Past studies conducted by reveals that a major cause of construction challenges lies in the poor coordination and improper integration of team members restricting the flow of information on project methodologies (Akarakiri, 2006).

What makes a project successful and implementing project methodologies is “a realistic schedule”. When there is unrealistic schedule, it leads to non-conformance of project management practices (Akarakiri, 2006). An unrealistic schedule does not include a detailed knowledge of the work to be done. It also has tasks sequences in wrong order. It does not

account for external constraints beyond the control of the team. Unrealistic schedules cannot be accomplished on time given the availability of sufficiently skilled and enough resources. Finally, an unrealistic schedule does not take into consideration all the objectives of the project (Olawale and Sung, 2010).

**Table 4.2 Causes of non-conformance to project management practices**

CAUSES	Mean	Std. Dev	Rank
Unclear organizational goals or requirements	4.18	0.893	1 <sup>st</sup>
Project managers lacking necessary training and knowledge	4.11	0.992	2 <sup>nd</sup>
Insufficient time dedicated to planning	4.09	0.658	3 <sup>rd</sup>
Unrealistic project scope	4.06	0.702	4 <sup>th</sup>
Inadequate project funding	4.00	1.023	5 <sup>th</sup>
Inability to bridge gap between strategy formulation and implementation	3.93	0.803	6 <sup>th</sup>
Lack of management sponsorship and support	3.89	0.712	7 <sup>th</sup>
Inadequate adherence to proven processes	3.87	1.002	8 <sup>th</sup>
Time constraint	3.78	0.831	9 <sup>th</sup>
Failure to identify responsibilities of key members	3.76	0.913	10 <sup>th</sup>
Improper project feasibility study	3.69	0.996	11 <sup>th</sup>
Inadequate project management	3.62	0.865	12 <sup>th</sup>

#### **4.5 EFFECTS OF PROJECT MANAGEMENT PRACTICES IN THE CONSTRUCTION INDUSTRY ON COST AND TIME**

Respondents for the study were asked in this section to rank the project management practices adopted in the construction industry on a Likert scale of 1 to 5 where 1- Not at all, 2- Rarely, 3- Sometimes, 4- Frequently, 5- Every time. From Table 4.1 below, *ensures project aligns with organization's strategic vision* was ranked 1<sup>st</sup> with a mean of 4.32 and standard deviation of 0.679. *Provides platform for Project Managers to succeed* was ranked 2<sup>nd</sup> with a mean of 4.25 and standard deviation of 0.813. *Helps to steer a project back on course before it is too*

*late* was ranked 3<sup>rd</sup> with a mean of 4.21 and standard deviation of 0.745. *Saves more effort and time on projects* was ranked 4<sup>th</sup> with a mean of 4.19 and standard deviation of 0.667.

*Useful for quality control* was ranked 5<sup>th</sup> with a mean of 4.10 and standard deviation of 0.803.

The findings agree with past literature.

**Table 4.3 Effects of project management practices in the construction industry**

<b>EFFECTS</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>Rank</b>
Ensures project aligns with organization's strategic vision	4.32	0.679	1 <sup>st</sup>
Provides platform for Project Managers to succeed	4.25	0.813	2 <sup>nd</sup>
Helps to steer a project back on course before it is too late	4.21	0.745	3 <sup>rd</sup>
Saves more effort and time on projects	4.19	0.667	4 <sup>th</sup>
Useful for quality control	4.10	0.803	5 <sup>th</sup>
Leads to more accurate timelines and budgets	4.02	0.834	6 <sup>th</sup>
Helps identify business analysis approaches in firms	3.89	0.912	7 <sup>th</sup>
Ensures current standards in use are continued throughout any new initiatives	3.76	0.894	8 <sup>th</sup>
Legal challenges are avoided or mitigated by producing accurate documentation	3.59	1.120	9 <sup>th</sup>

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS AND RECOMMENDATIONS**

#### **5.1 INTRODUCTION**

Chapter five presents the summary of findings of the study based on the data collected from the field. It further concludes the study and makes recommendations on project management practices. A synthesis of the previous chapters is enumerated. The first chapter of the study talked about the general introduction of the study. The research questions emanating from the study was also identified and well presented in chapter one. The aim and objectives of the study was also stated in chapter one. The methodology which was adopted for the study was also stipulated. The scope of the study was also stated. The chapter which follows directly after chapter one is chapter two (Literature Review). Here, the literature surrounding the studies were identified from extant literature and reviewed. Successively, chapter three (Research Methodology) of the study talks about the methods which will be adopted to attain the objectives of the study. Hence, the research paradigm, research strategy, the approach adopted for the study, the research design, the population of the study, sample size and sampling techniques, as well as data analysis were all discussed in this chapter. The chapter four of the study discussed the data obtain from the field and analysis of the obtained data. The discussions surrounding the study were also presented in this chapter.

#### **5.2 ACHIEVEMENT OF RESEARCH OBJECTIVES**

The aim of this research is to assess project management practices in the construction industry of Ghana. This section documents how the three objectives for the study were achieved.

### **5.2.1: Project management practices adopted in the construction industry**

Analysis was by mean score ranking. This was the order of importance:

- Preparing clear term of references for tendering documents
- Conformance to contract requirements
- Practising health and safety management
- Managing risks effectively
- Outline project scope and requirements

### **5.2.2: Causes of non-conformance to project management practices**

Analysis was by mean score ranking. This was the order of importance:

- Unclear organizational goals or requirements
- Project managers lacking necessary training and knowledge
- Insufficient time dedicated to planning
- Unrealistic project scope
- Inadequate project funding

### **5.2.3: Effects of project management practices in the construction industry on cost and time**

Analysis was by mean score ranking. This was the order of importance:

- Ensures project aligns with organization's strategic vision;
- Provides platform for Project Managers to succeed;
- Helps to steer a project back on course before it is too late;

- Saves more effort and time on projects;
- Useful for quality control

### **5.3 CONCLUSION**

Performance of projects cannot be compromised and hence the right project management practices should be adopted. There exists a relationship between project performance and project management practices. While some practices adopted do impact positively on projects, others do not. It is essential therefore to encourage the best practices and the ineffective practices reviewed in order to boost the success of building projects. The performance of projects therefore needs to be measured in light of project management practices to enhance the optimum practices.

### **5.3 RECOMMENDATIONS**

- Supervision of works should be well undertaken;
- Realistic schedules for projects should be created;
- Improved team communication is essential
- Project managers should be adequately trained or experienced

### **5.5 DIRECTIONS FOR FURTHER RESEARCH**

This study adopted the quantitative approach. Further studies should use interviews to gain more insight into project management practices.

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## **APPENDIX**

**Kwame Nkrumah University of Science and Technology  
Kumasi**

### **QUESTIONNAIRE:**

#### **TOPIC: EXPLORING PROJECT MANAGEMENT PRACTICES IN THE CONSTRUCTION INDUSTRY OF GHANA**

Dear Sir/Madam,

This questionnaire is part of a study being conducted as part of requirements for MSc Project Management. The aim of this study is to explore project management practices in the construction industry.

All information collected will be confidential and used only for academic purposes. Please we would be grateful if you could answer this questionnaire to aid this study. Thank you for your time and valid contribution in advance.

Yours faithfully,

Mr. Senanu Gaikpa,

Kwame Nkrumah University of Science and Technology  
Department of Construction Technology and Management

Prof. Divine Ahadzie

Project Supervisor

Kwame Nkrumah University of Science and Technology

Private Mail Bag

Kumasi

## **PART I: RESPONDENT PROFILE**

*Please tick (✓) the appropriate box*

1. Which of the following categories do you work?

☐ Contractor firm

☐ Consultancy firm

2. How many years of experience do you have in the construction industry?

☐ Less than 5 years

☐ 5 - 10 years

☐ 10 – 15 years

☐ 16 years and above

3. What is your highest educational qualification?

☐ HND

☐ First degree

☐ Masters

☐ PhD

## PART II: PROJECT MANAGEMENT PRACTICES ADOPTED IN THE CONSTRUCTION INDUSTRY

Rank on a Likert scale following project management practices adopted in the construction industry. *Please answer by ticking (√) the corresponding boxes.*

1- Not at all, 2- Rarely, 3- Sometimes, 4- Frequently, 5- Every time

PRACTICES					
	1	2	3	4	5
Managing communication among all relevant parties effectively					
Managing risks effectively					
Managing costs so it does not exceed the allocated budget for the project					
Setting standards for the delivery of project outputs					
Selecting project consultants competitively					
Contractor confirming all instructions, verbal or written before executing					
Documenting and archive all documentations for the project after finishing					
Preparing procurement plan					
Preparing clear term of references for tendering documents					
Preparing communication plan for all related parties					
Preparing detailed work definition document					
Receiving feedback from team members on project management methods					
Outline project scope and requirements					
Monitoring project schedule					
Adequacy of staffing level					
Extent of team-building activities					
Conformance to contract requirements					

Quick response to variations					
Practising health and safety management					
<b>Any other please state and rank</b>					

### **PART III: CAUSES OF NON-CONFORMANCE TO PROJECT MANAGEMENT PRACTICES**

Based on your experience, please rank the severity of the following causes of non-conformance to project management practices. *Please answer by ticking (√) the corresponding boxes.*

1- Not Severe at all, 2-Not Severe, 3-Moderately severe, 4- Severe, 5- Very Severe

<b>CAUSES</b>					
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Lack of management sponsorship and support					
Unclear organizational goals or requirements					
Unrealistic project scope					
Insufficient time dedicated to planning					
Inability to bridge gap between strategy formulation and implementation					
Project managers lacking necessary training and knowledge					
Inadequate project funding					
Failure to identify responsibilities of key members					
Inadequate adherence to proven processes					
Improper project feasibility study					
Time constraint					
Inadequate project management					
<i>Any Others (please specify and rank)</i>					

## PART IV: EFFECTS OF PROJECT MANAGEMENT PRACTICES IN THE CONSTRUCTION INDUSTRY

The following are effects of project management practices in the construction industry.

Please rank the significance on a Likert scale of 1-5. *Please answer by ticking (√) the corresponding boxes.*

**1-** Not significant, **2-**Less significant, **3-**Moderately significant, **4-**Significant, **5-**Very significant

EFFECTS					
	1	2	3	4	5
Provides platform for Project Managers to succeed					
Ensures project aligns with organization's strategic vision					
Useful for quality control					
Saves more effort and time on projects					
Helps to steer a project back on course before it is too late					
Helps identify business analysis approaches in firms					
Legal challenges are avoided or mitigated by producing accurate documentation					
Ensures current standards in use are continued throughout any new initiatives					
Leads to more accurate timelines and budgets					
<i>Any Others (please specify and rank)</i>					