

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

A Comparative Study of Project Management Practices in
Local and Foreign Construction Companies in
Ghana

BY
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A Thesis submitted to the Department of Construction Technology and Management, College of
Arts Built Environment in partial fulfilment of the requirement of the degree of

MASTERS OF SCIENCE

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DECLARATION

I hereby declare that this submission is my own work towards the MSc degree and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgment has been made in the text.

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ABSTRACT

The effective practice of project management leads to a successful project closure. The management processes involves initiation, planning, execution, monitoring and controlling of the project. However, most organizations undertake projects without necessarily adhering to these standard project management practices leading to the failure of most projects. The local construction companies face many challenges than the foreign construction companies in terms of project failure in Ghana. The purpose of this study is to investigate the level at which project management practices are adopted in the implementation of projects in Kumasi Municipality, Ashanti Region. It is also to investigate the success rate of projects undertaken by the local and foreign construction companies and find out the causes of project failure. The method used to carry out this research is solicitation of information from the Engineers and Managers who supervise construction projects. Data gathered was analyzed using descriptive approach including; mean and standard deviation by Statistical Package for the Social Sciences (SPSS) and was ranked according to its level of importance. The major findings of this research indicate that Project Management process group were adopted in implementation of construction projects however, the local construction companies lack project management department but have a personal in charge as a Project Manager who oversees all aspects in managing a project and this affects implementation of project management practices. On the other hand, foreign construction companies have project management department with various sections that help in implementing project management practices. It was highly recommended that local construction companies should have project management department and this would ensure good standard practices are followed to the letter for a high success rate of projects.

Key words: Comparative, Project Management Practice, Initiation, Planning, Execution, Monitoring and Controlling

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To Mrs. Salomey Ninsing, my wife who helped to put together this script, I say a big thank you. Finally, to all loved ones who prayed and supported me in diverse ways I say God bless you in many ways.

DEDICATION

I wish to dedicate this piece of work to my wife, Mrs. Salomey Ninsing, my lovely daughters Inkunim and Adom-Sika, and my grandmother Beatrice Abadua Amfo.

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CHAPTER ONE

GENERAL INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Every Ghanaian in the construction industry dream to improve service delivery of project with respect to project management practices. It was reported by Mitullah and Wachira (2003) that to have an efficient construction industry is having objective policy in the countries. There is a general feeling that the limited knowledge applied in project management practices is largely responsible for the bad performance of Ghanaian indigenous construction firms (Ahadzie, 2008). The effective project management is vital for higher performance levels in construction project management. Klynveld Peat Marwick Goerdeler (KPMG's) (2015) Global Construction Survey stated that construction projects continue to evolve, grow larger and more complex, and have organizations gained more confidence in their ability to hit schedule, budget and quality targets.

In very country's economy, construction is the pivot of development (Nubi, 2003). Vanoli (2010) stressed that the role of the industry overall economy through National Gross Domestic Product (NGDP), employment, labour, and fixed gross capital formation (GFCF) cannot be underestimated. Currently, Ghana construction industry contributes about 13.7% to the nation's Gross Domestic Product (GDP) as at 2016 (GSS, 2017). Consequently, effort are being made to improve the effectiveness of the project management practices in the construction industry in Ghana on is worthwhile and the industry will be better preformed. All projects must have a commencement and a termination period. It is important to understand the modern management practices of the design and the construction process. Projects have a set of objectives and

constraints with it required time set for termination. Muller and Turner, (2007) stressed that processes and technology will differ, implementing such project, similarities in project like pharmaceutical, and energy industry aerospace. Idoro et.al, 2009 stated that project management is the act of coordinating material and human resources throughout the project life by way of using modern project management practices to achieve scope, schedule, quality, cost, and stakeholders' fulfilment. By divergence, the overall management of the business in the industry assumes a wider outlook with better continuity of operations. Nonetheless, Arnboldi et al., (2004) mention that there are adequate similarities as well as changes between the two, so that management practices that are developed for general management can be adapt for project management.

It is important to have a working knowledge for a general management and fluency with special knowledge province related to the project are indispensable. Computer science, decision science may support and play important role in management of project. Arnaboldi et al., (2004) stated that modern project management practices and several special knowledge areas have absorbed countless techniques that recognised only with the supporting disciplines.

1.2 PROBLEM STATEMENT

Project require effective management from commencement to completion if they are to be completed within the safely requirements, on schedule, within budget and to meet business objectives as well. However, researchers criticised the system noting that project management practice had several shortcomings (Rowlinson and Newcombe, 1986; Ling et al., 2004), Present practices in the construction industry suggests that schedule and planning in the construction industry is inefficient and project are cost are overrun and overtime. (Castor and Dawood, 2005) Gyadu-Aseidu et al., (2013) stated that foreign construction firms are more efficient in terms of cost, time and quality as performance measures than the local construction firms in Ghana. Local

Construction Company Project Managers use only their experiences, historical and technical data and gut feeling to plan and manage the process (Gyadu-Aseidu et al., 2013). This problem have pave way for the foreign companies into the Ghanaian construction industry however, this research is to assess the project management practices in the foreign and local construction companies in Ghana and suggest modern practice and techniques of managing constrction project.

1.3 RESEARCH QUESTIONS

The research answered the following question:

- What are the procedures involved in the project management practices in the local and foreign construction companies in Ghana?
- What practices do the foreign and local construction companies use in managing their project?

1.4 AIM

The aim of the study was to do comparative study of project management in local and foreign construction companies.

1.5 RESEARCH OBJECTIVES

The specific objectives of the study were:

1. To identify the project management practices in the local and foreign construction companies in Ghana; and
2. To compare project management practices in the local and foreign companies in Ghana.

1.6 RESEARCH METHODOLOGY

Quantitative approach was used in this research to obtain the needed information. This research needs a general synopsis of the current project management practices in the local and foreign

construction companies in Ghana. Internet sources were much important for the literature review to examine the academic bases level of importance management practices in the industry. A descriptive (quantitative) approach was undertaken to get the primary data for the research. A survey was performed on twenty (20)-construction companies site, three (3) respondent from each company both local and foreign companies this sum up to sixty-(60) respondent. Individual Project managers, Cost engineers, Planning Engineers and stakeholders in the construction industry were interviewed based on their working experience in the industry.

1.7 SIGNIFICANCE

The construction industry in Ghana have seen serious challenges when it comes to managing a project to a closer. There an evidence shows that there are no proper project management practices in Ghana. This research is to highlighting the project management practice in the Ghanaian construction industry. This research also seeks to uncover the bad project management practices in the construction industry.

1.8 SCOPE

This research were to cover the project management practices in the area of Cost Management, Risk Management, Schedule and Scope Management, Monitoring and Evaluation, Stakeholder Management and Communication Management in the local and foreign construction companies in the Kumasi Metropolis, Ashanti Region.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The chapter two (2) talks about how project management practices are been implemented in the local and the foreign construction companies in Ghana. However, this chapter will also highlight the construction project management, knowledge areas and it importance to the construction industry in Ghana. The failure of the local construction companies leaving up to the international standard. Notwithstanding, the participating of the stakeholders in construction industry.

2.2 OVERVIEW PROJECT MANAGEMENT

According to Project Management Institute (PMI's) Guide to the Project Management Body of Knowledge (PMBOK 6th Edition, 2017), A project is a temporary endeavor undertaken to create a unique product, service, or result. From the above definition, it can be deduce that a project has some basic characteristics:

Temporary – temporary means that a project has definite beginning and definite end. The end is achieve when the project's objectives have been achieve or it becomes clear that the project objectives cannot be meet or the needs for the project no longer exist and the project is terminated. Temporary does not classified as short duration, as many projects can last for many years. Notwithstanding, the temporary nature of projects does not apply to the product, service or the consequential outcome of projects. Most projects that are undertaken or create a national monument will produce results that will last for centuries (PMI's Guide to Project Management Body of knowledge, 6th Edition. Disnmore et al., (2005) suggest that the temporary nature of projects just means that they are not repetitive or continuous activities.

A project is normally undertaken to create a specific (exceptional) deliverable, which can be a product (good), services or some results. In effect, projects can create:

- A produce or artifact that is quantifiable that can be either an end item or a component item;
- A capability to perform a service such as business function supporting production or distribution; and
- A result, such as outcomes or documents, for example a research project develops knowledge that can used to determine whether a trend is present or a new process will benefit society.

Uniqueness

Uniqueness is an important characteristic of project deliverables because it distinguishes every deliverable from another similar purpose. For example, there are office buildings developed from projects but each facility is unique or distinct. (PMI's Guide to Project Management, 6th Edition, 2017)

Progressive elaboration

Progressive elaboration of projects refers to developing in steps and continuing by increments. For example, a projects scope will be generally describe earlier in the project and make more explicit and detailed as the project team develops a better and more complete understanding of the objectives and deliverables. Progressive elaboration indicates that projects are undertakes by gradual steps and activities until the final deliverable is achieved. Cleland and Kezner (1985), in their work; A Project Management Dictionary of Terms includes the following characteristics for projects:

A project is a combination of human and nonhuman resources pulled together in a temporary organization to attain a specified resolution;

A project, then, can be defined as possessing the following characteristics:

1. A defined beginning and end (specified time to completion);
2. A precise, destined goal or set of goals;
3. A succession of complex or interrelated activities; and
4. A limited budget.

2.3 PROJECT MANAGEMENT PRACTICE IN GHANA

Ahadzie and Amoah-Mensah (2010) stated that project management practices in the Ghanaian construction industry recognized in the late 1980s this was first use in Mass Housing Building Production (MHBPs) by a quasi-government organization, Social Security and National Insurance Trust (SSNIT) throughout the country. In the year, 2003 project management practices received much recognition through the Ghana's Procurement Act 663(c.f. The manual to the Act) then a title of project manager was mentioned. Abbasi et al., (2000) emphasized that project management practices is still in its early stage in the developing African countries. With the developing phase of project management in Ghana, the private sector made an agreement with the Project management Institute (PMI) to set up Project Management Institute, Ghana Chapter with the objective of providing best practices in project management to the project managers that will come up in the industry. Undoubtedly, Edum-Fotwe & McCaffer, (2000) mention that Ghanaian construction industry offer an appropriate environment for studying the development of professional practices in the country.

2.4 PROJECT MANAGEMENT COMPETENCY IN GHANA

Ofori (2014) stated that project outcomes in Ghana have been adjudged to be poor because of how projects are managed, the project management practices, and the project management approaches used. Despite the noted contribution of the Ghanaian construction industry to economic growth and development, it is still troubled with numerous cost overruns and delays on projects (Frimpong et al., 2003; Agyakwa-Baah, 2007; Berko, 2007; Agyakwa-Baah, 2009; Chileshe and Berko, 2010; Fugar and Agyakwah-Baah, 2010)

2.5 DIFFERENT TYPES OF PROJECT MANAGEMENT TECHNIQUES

2.5.1 Critical path method (CPM)

Developed in the 1950s by the US Navy. Originally, the critical path method considered only logical dependencies between terminal elements. Since then, it has been expanded to allow for the inclusion of resources related to each activity, through processes called activity-based resource assignments and resource leveling. Critical Path Method for the construction industry (Santiago and Magallon, 2009).

2.5.2 Program evaluation and review technique (PERT)

Program (Project) Evaluation and Review Technique (PERT) is a project management tool used to schedule, organize, and coordinate tasks within a project. It is a method to analyze the tasks involved in completing a given project, especially the time needed to complete each task, and to identify the minimum time needed to complete the total project (Archibald and Villoria, 1967).

PERT planning involves the following steps:

- Identify the specific activities and milestones.
- Determine the proper sequence of the activities.
- Construct a network diagram.

- Estimate the time required for each activity.
- Determine the critical path.
- Update the PERT chart as the project progresses

2.5.3 *Lean construction*

Lean construction is a “way to design production systems to minimize waste of materials, time, and effort in order to generate the maximum possible amount of value” (Koskela et al., 2002,). Value in construction is like value in any business: it is a return on your investment. Adopting lean principles is an investment in the future of the project, which will reap benefits and give a solid return on investment.

- Improve communication planning with owner, work force, contractors, and suppliers with visualization and open display of schedule, design, and workflow.
- Eliminate waste of materials, poor communication, duplication of efforts, and design errors
- Improve work planning by early planning, with a focus on improved workflow, achievable tasks, distribution of workload, and a clearly defined work scope.
- Look-ahead scheduling with just-in-time deliveries, engagement of all parties, availability of resources, access to site, and coordination of other dependencies.
- Plan and coordinate off-site fabrication and modular construction activities to reduce site congestion, distribute workload, minimize field work force, and improve just-in-time delivery
- Create a clean, safe, and efficient working environment, and communicate safety.

2.5.4 *Line of balance (LOB)*

The LOB technique is very suitable for repetitive projects like residential buildings; however, it may be adapted for non-repetitive projects as well. The main advantages of LOB schedule are its

graphical presentation, easy understanding of the schedule and the goals of planning used in it. The research conducted by the authors aims to improve the LOB concepts on building construction and prove its usefulness. The LOB method helps project managers take corrective actions such as allocating more resources or prioritizing the work when there is still time to do it (Badukale and Sabihuddin, 2014).

2.5.5 Earned Value Management

Project Management Institute presents many tools and techniques that will help archive project success. Earned Value Analysis is one of the most regarded tools in the world. Appropriately, it seems title; “Earned Value Management” was met and reach with anxiety instead of the thought of usefulness Reichel, (2006). Inspect of these Bergerud, (2015) stated that the core principles of EVM exist independently of ANSI/EIA-748, and it use across industries. EVM solution for organizations that are not specifically government contractors can yield tremendous benefits in measuring productivity and improve cost forecasting. Earned value analysis compares the performance measurement baseline to the actual schedule and cost performance. EVM incorporates the scope baseline with the cost baseline and schedule baseline to form the performance measurement baseline. EVM develops and monitors three key dimensions for each work package and control account these are; planned value, Earned value and Actual cost (PMBOK 6th Edition, 2017).

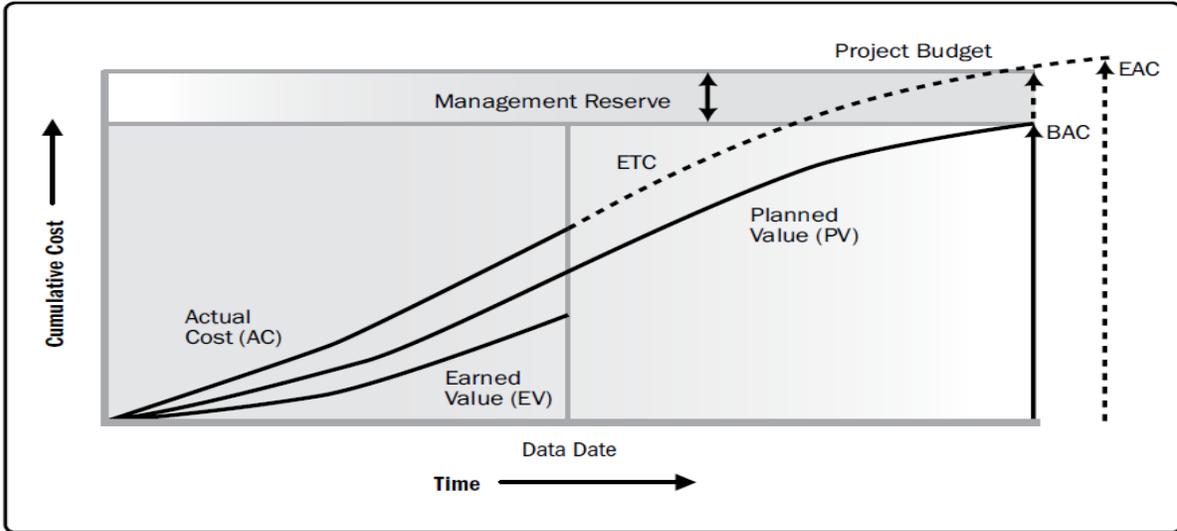


Figure 2.1 Earned Value, Planned Value, and Actual Costs (source: PMBOK 6th, 2017)

2.6 PROJECT MANAGEMNET PROCESS

Ibbs and Kwak (2002) stated that project management process is a significant source of reference for an organization applying project management practices and processes. This is because the model accounts for successful execution of projects by organizations (Ibbs and Kwak, 1997). Project management process involves five levels. These are illustrate in the model below.

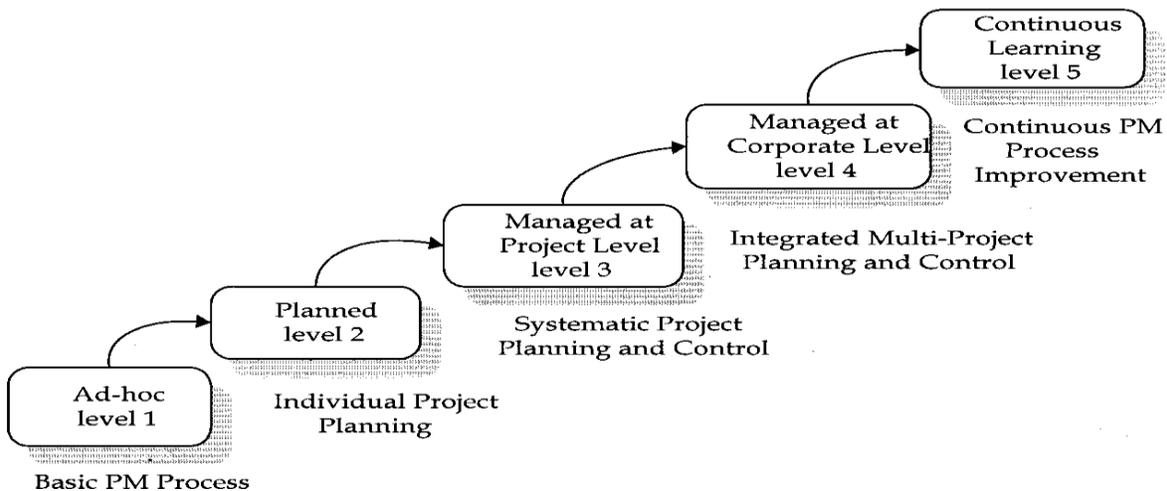


Figure 2. 2: Basic Project Management Process (Ibbs & Kwak, 2002)

The project management model advanced by Ibbs and Kwak (2002) deals with the following project management knowledge areas:

1. Project integration management;
2. Project scope management;
3. Project schedule management;
4. Project cost management;
5. Project quality management;
6. Project resource management;
7. Project communication management;
8. Project risk management;
9. Project procurement management; and
10. Project stakeholder management.

Every successful project includes these practices to deliver projects in line with the requirements and satisfaction of clients/customers.

2.7 KNOWLEDGE AREA IN CONSTRUCTION PROJECT MANAGEMENT

According to Carey, (1993) Construction Project Management Knowledge areas are, Communications Management, Human Resources Management, Quality Management, Risk Management and Contract Management. On the other hand, construction extension to the PMBOK guide third edition provides construction-specific for project management areas are; Project Safety Management, Project Environmental Management, Project Financial Management and Project Claim Management however, with the benefit of this research will focus on the Construction Extension Knowledge area.

The incorporation of Project Management into the industry was slow, but now stands as one of the major supporters in the construction industry (Smithers and Walker, 2000, Oyedele, 2011). It has been recognized by the construction industry that the goal of improving its performance and ability to deliver better quality services and innovative work ethics, this can only be achieved through proper understanding of its vibrant role of the 4Ms in the project management practice namely Money, Materials, Manpower and Machinery. The Professional Project Management Practice in construction is now a universal phenomenon (Wilkinson, 2001; Ahadzie and Amoah-Mensah, 2010).

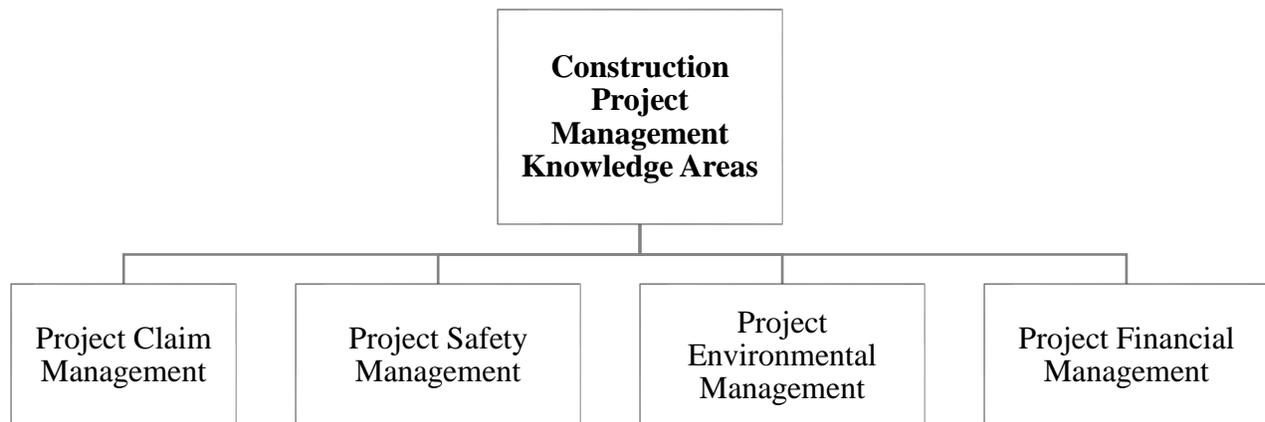


Fig. 2.3 Construction Extension Knowledge Area. (Source: Construction Extension 3rd Edition, PMI, 2016)

2.7.1 Project Safety Management

Safety Management Plan is implemented using policy, procedures and processes of safety planning, safety assurance and safety control. Continuous improvement activities are undertaken throughout the project as appropriate. Project management systems employed to meet project requirements take due cognizance of health and safety (Construction Extension 3rd Edition, PMI, 2016)

2.7.2 Project Claim Management

Construction projects are becoming more and more complex due to new standards, advanced technologies, and owner-desired additions and changes. While the successful completion of projects has been thought to depend mainly on cooperation between the contractor, consultant, and owner, problems and disputes have always erupted due to conflicting opinions as to the various aspects of design and construction. Again, the increased complexity of construction processes, documents, and conditions of contracts has been contributing to higher possibilities of disputes, conflicting interpretations, and adversarial attitudes. The exhausting and expensive process of litigation has not been making things easier, as unsettled claims that have developed into disputes can take a very long time to be resolved. All the above factors have made ‘**claims**’ an inevitable burden in implementing today’s construction projects. (Construction Extension 3rd Edition, PMI, 2016)

2.7.3 Project Environmental Management

This Environmental Management details the principles, practices and procedures to be implemented however, to manage, remedy and mitigate potential adverse environmental effects during construction. These principles, practices and procedures meet resource consents and designation conditions, relevant legislation and the environmental objectives (Construction Extension 3rd Edition, PMI, 2016).

2.7.4 Project Financial Management

This knowledge area comprises all procedures required to safeguarding financial planning, control, administration and records. Understanding project financials means different in all stages of project and different meaning to different peoples. In general, it means without proper project financial management, project informed decision cannot be made (Wilson and Schwartz, 2011).

2.8 SUCCESSFUL PROJECT IMPLEMENTATION

In addition to defining the concept of organizational projects, it is important, before attempting any discussion of the steps leading to a successful project, to describe precisely what a "successful project" is. Project implementation success has been defined in many ways to include a large variety of criteria. However, in its simplest terms, project success can be thought of as incorporating four basic facets. A project is generally considered to be successfully implemented if it;

1. Comes in on-schedule (time criterion);
2. Comes in on-budget (monetary criterion);
3. Achieves all the goals originally set for it (effectiveness criterion); and
4. Is accepted and used by the clients for whom the project is intended (client satisfaction criterion). ‘By its basic definition, a project comprises a defined time frame to completion, a limited budget, and a specified set of performance characteristics. Further, the project is usually target for use by some client, either internal or external to the organization and its project team. It seems reasonable, therefore, that any assessment of project implementation success should include these four measures stated above (Pinto and Slevin, 1987).

2.9 STAKEHOLDERS

A stake is an interest or a share in an undertaking while a stakeholder is an individual with a stake (Weiss, 2006). Moloney (2006) debates that stakeholders are personalities or groups that benefit from an organization. Basically, stakeholders affect and are affected by an organization and its activities. Stakeholders can affect an organization’s functioning, goals, development and even survivals. In effect, stakeholders have power to be either a threat or a benefit to an organization (Gibson et al., (2000). In having proper and qualified personals in a company comes down to

stakeholders on how they are intended to manage their construction project. Most of the local Construction companies in Ghana do not employed qualified professional to undertake responsibility that will make the companies stand the test of time or to compete with foreign construction companies in Ghana for that matter Ashanti Region.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter three (3) discusses the methodology, which was used in this research to meet the aim and objectives. The first section of the chapter considered the research design for the study. It involves a discussion of organizational Chart, information about the research design, target Construction Companies, sample size and sampling technique, data collection, questionnaire design, method of processing and analysing the data and constraints. Interviewing the Project Managers, Project Planners, Estimators, and Directors of the various companies will be the main persons to approach for the collection of the data and standpoints of the professional.

This study is to compare project management practices in the local and foreign Construction Companies in addition, how to conform these practices to the success of project closer and to ascertain the difference practices between local and foreign companies.

3.2 RESEARCH DESIGN

The research design refers to the questionnaire survey, which was enter into google form that was choose to integrate the different components of the study in an articulate and logical way, and seeks to convey how local and foreign construction companies manage their construction projects to a successful close. However, most of local construction companies find it difficult to bring construction project to a successful close. This research will delve into project management practice in the local and foreign companies to inaugurate the objectives of the study and develop research plan to uncover the good and bad practices in project management. The research design set to interview Professionals in construction companies such as Project Mangers, Project Planners, Cost Estimators and Engineers and Chief Executive Officers.

3.2.1 Research approach

Wilson, (2010) stated that deductive approach is a matter of developing an hypotheses in relation to an existing theory, then designing a research strategy to test the hypothesis. Kenneth, (2000) re-emphasis that deductive approach is a theory use to examine a process that initiates an established theory and seeks to see if the theory applies to specific instances. Inductive approach is a concept built to observe a specific instance and pursuing to establish the generalisations about the phenomenon under investigation (Kenneth, 2000). Reichertz (2010) states that the abductive approach was the act of guessing and most researchers did want to be in such act. Paavola (2004) also admits that most criticisms against abductive as it been a logic discovery. Nonetheless, this study seeks to compare exciting process with two different approach by the local and foreign companies and seeks to know the better way to following such process. Hence, this study seeks to adapt deductive approach in the study.

3.2.2 Research Method

The researcher seeks to describe the ways in which the study will be conducted. According to Naoum, (1998) study approach is way of investigation study objectives. Research have three main types these are; quantitative, qualitative, and triangulation according to (Baiden, 2006). Naoum, (1998); c.f Baiden, (2006), stated that the purpose of the study will determine the strategy to be used. Therefore, this study seeks to adapt quantitative strategy, as the main data collection methods used in this study was questionnaires. This technique will give the researcher the opportunity to ask same question with the respondent.

3.2.3 Research Strategy

In achieving the objectives of the study, strategies were put together to suite the methodology to answer the questions in the study and to provide direction in the planning

and how to implement such plans to achieve the aim and the objectives of the study. Research strategy is to approach to form hypothetical basics in collecting of a data and analysis it to suite the study (Collis & Hussey, 2003).

3.3 POPULATION

The study population will comprise all project engineers in the various Construction Companies in the Kumasi Metropolises of the Ashanti Region of Ghana. The target comprises of local and the foreign construction companies with their various professionals in the company like; Project Managers, Project Cost Engineers and Project Planners in the various companies. Twenty-(20) local and foreign firms were used for the study.

3.3.1 Sample Size

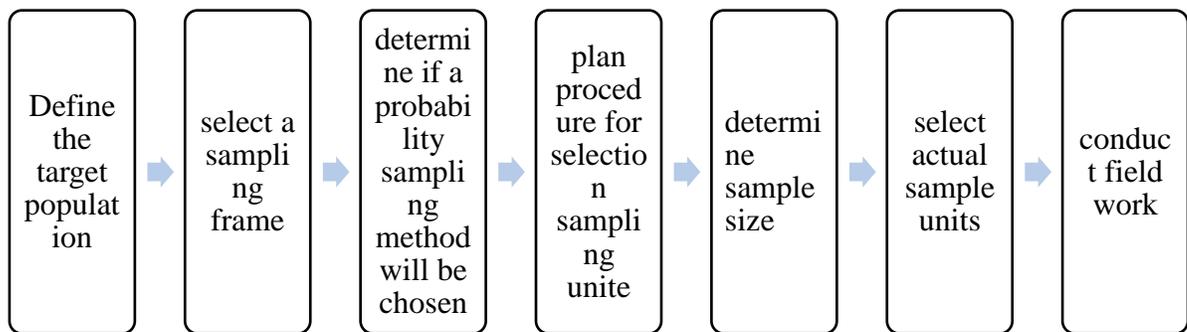
Polit & Hungler, (1999) stated that sample is a unit that form populations. Three (3) construction professionals were selected from twenty (20) construction companies to make up sixty (60) respondent for the study. The selected samples have the ability to implement project management practice and this generalised the result to epitomise the population size of the study (Burns et al., 2001, Polite et al., 2006). The targeted group were the local and the foreign firms however, in each company three (3) questionnaires were administered to the selected professionals, Project Managers and Project Planners.

In order to collect input from the users and the administrators, questionnaires and surveys had to be conduct. The purpose of this survey is to measure, on a scale of 1-5, what they believed the level of importance is of each specific category of project management, along with what they believe is the current level of importance. This survey allowed me to gather qualitative data along with a quantitative measure of the importance of each topic asked in the questionnaire.

3.3.2 Sampling techniques

Sampling is way of selecting number of people for a study that will represent a large number of people. Purposive sampling techniques were use in selecting the sample base on the knowledge in the construction.

Fig. 3.1 Stage in the selection of sample (sources: Creswell, J. W (2012)).



3.4 DATA COLLECTION

Two different types of data were used. These are primary and secondary data. Primary data in this study comprised data collected via questionnaire and used for analysis while secondary data is sourced from the articles, magazines and various publications in project management that were contacted.

3.5 DATA ANALYSIS

Data collected were analysed by SPSS in two part, qualitative and quantitative. This software were used to analysist the data, using this software enabled the date collated to be put into frequencies, mean and standard deviation with tables and Charts. T-test was engaged on the sample to identify most important practices which were employed by the firms.

CHAPTER FOUR

ANALYSIS AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

This chapter gives a detailed description of the main study outcomes and linking its conclusions to the construction industry in Ghana. There are three (3) sections in this chapter, these represent the individual analysis and its conclusions in relation to the specific objectives. These are:

3. To identify the project management practices in the local construction companies in Ghana;
4. To identify the project management practices in the foreign construction companies in Ghana; and
5. To compare and contrast the project management practices in the local and foreign companies in Ghana.

4.2 GENERAL RESPONSIVENESS TO THE SURVEY AND ANALYSIS OF RESPONDENT

A total number of Sixty-(60) questionnaires were administered to Ten (10) construction companies in which five (5) were local and the other five (5) were given to the foreign companies. The questionnaires were administered to Project Manager, Project Planner and Cost Engineer the companies. However, 100% of the questionnaires were received from the respondent. The position of the respondent is shown in the table 4.1 below. Their experiences in the construction industry are suitable to find out relevant project management practices in the construction industry. They have experiences across the industry like hospital project, road project, housing project and public utilities project. Quantity Surveyor had the highest among the entire respondent. Figure 4.1 shows that Quantity Surveyor formed the majority of managers on site compared to other professions in the industry like civil engineer, surveyor, architect and other. The findings in the PMP certified

professionals are 13 that make 21.7% and 47 represent 78.3%. This shows that most of the professional in the construction industry do not have PPMP, in this regard Kissi and Ansah, (2013) stated that it a challenge to the construction industry in Africa and the current state of project management practices in Ghana because of the emerging technology and practices in the construction industry.

Table 4.1 Demography of the respondent

	Frequency	Percentages
Educational level of respondent		
Higher national diploma	8	13.3
First degree	34	56.7
Master's	16	26.7
Other	2	3.3
PhD	0	0
Respondent professional background		
Civil Engineer	17	28.3
Quantity Surveyor	21	35.0
Surveyor	4	6.7
Architect	6	10
Other	12	20
Respondent years in the construction industry		
1 – 5years	11	18.3
6 – 10 years	32	53.3
11 – 15 years	12	20

16 years above	5	8.3
Are you PMP Certified Project Manager		
Yes	13	21.7
No	47	78.3

The majority of the respondent years of experience is in the bracket of 6 – 10 years, which represent 53.3% this shows that, there are potentials in the industry to acquire PPMP to mitigate the emerging trend in the industry. The table shows that 12 professional were in the category of 11 – 15 years, which makes 20%. However, 11 were in the category of 1 – 5 years that makes 18.3%.

In the area of professional background of the respondent 21 (35%) of them are quantity surveyors, 17(28.3%) are of civil engineers. Significant number of the respondent were Architect 6(10%) which are in a position as Project Managers.

4.3 PROJECT INTEGRATION MANAGEMENT

This section present the overview of project integration management. Project integration is a process of making important decisions and coordinating of resources to meet the objectives of project (Ofori, 2014). In table 4.2 project integration respondent were asked to rank the importance of the process in this area scaling from 1 to 5 where 1= not important, 2= less important, 3= moderately important, 4= important and 5 most important. In the table below, it shows that Develop project management plan rank most important and perform intergraded change control is the last on the table.

Table 4.2: Shows Project Integration Management process (local & foreign)

	Mean	Ranking	Std. Deviation
Develop Project Management Plan	4.65	1	.481
Monitor and control project work	4.37	2	.610
Direct and Manage Project work	4.32	3	.624
Develop Project Charter	4.22	4	.739
Manage project knowledge	4.13	5	.724
Close project or Phase	4.12	6	.761
Perform integrated change control	4.05	7	.565

In the table 4.3 and 4.4 shows, Develop project management plan is the most important in the area of PIM from both local and foreign companies with the mean of 4.6 and 4.7 respectively. It is quite un-understandable that project charter is not the most important in this area, with a rank of 3rd in the foreign and 5th in the local construction companies meanwhile, it is 4th in the table 4.2. PMBOK 6th ed. 2017 stated that project charter gives the project manager an authority to begin the project and obtain right resources for its activities. However, lack of develop project charter in the local construction company leads to less project management practices.

Table 4.3: Shows Project Integration Management process (foreign)

	Mean	Ranking	Std. Deviation
Develop Project Management Plan	4.60	1	.498
Monitor and control project work	4.40	2	.621
Develop Project Charter	4.37	3	.765
Direct and Manage Project work	4.27	4	.583
Manage project knowledge	4.27	5	.691

Perform integrated change control	4.10	6	.712
Close project or Phase	3.97	7	.765

Table 4.4: Shows Project Integration Management (PIM) process (Local)

	Mean	Ranking	Std. Deviation
Develop Project Management Plan	4.70	1	.466
Direct and Manage Project work	4.37	2	.669
Monitor and control project work	4.33	3	.606
Close project or Phase	4.27	4	.740
Develop Project Charter	4.07	5	.691
Manage project knowledge	4.00	6	.743
Perform integrated change control	4.00	7	.371

4.4 PROJECT SCOPE MANAGEMENT

Project scope help define the scope of a project that required to undertake to complete a project successfully (PMBOK 6TH, 2017). It was considered by many respondent that define scope has the most important in the project scope process with a mean of 4.4. While the mean of 4.07 for validate scope, shows that most of the respondent companies do not emphasise the importance of validate scope.

Table 4.5: Shows Project scope management process (local & foreign)

	Mean	Ranking	Std. Deviation
Define scope	4.40	1	.643
Control scope	4.32	2	.813
Collect requirement	4.18	3	.676
Plan Scope management	4.17	4	.615
Create WBS	4.10	5	.681
Validate scope	4.07	6	.918

Table 4.6 illustrates the results for the importance levels in the local companies. Define scope have the mean of 4.4 with percentage of 18.13%. Most of the respondent indicate that validate scope is not important in their company but it contrary to that of foreign companies.

Table 4.6: Showing the level of importance in Project scope management process (local)

	Mean	Ranking	Std. Deviation
Define scope	4.40	1	.724
Plan Scope management	4.10	2	.712
Control scope	4.10	3	.960
Collect requirement	3.97	4	.669
Create WBS	3.93	5	.691
Validate scope	3.77	6	1.040

Table 4.7 gives out the result for the foreign companies, respondent represent 4.53(17.29%) control scope as the most important process in the knowledge area of project scope management.

Table 4.7: Showing the level of importance in Project scope management process (foreign)

	Mean	Ranking	Std. Deviation
Control scope	4.53	1	.571
Define scope	4.40	2	.563
Collect requirement	4.40	3	.621
Validate scope	4.37	4	.669
Create WBS	4.27	5	.640
Plan Scope management	4.23	6	.504

4.5 PROJECT SCHEDULE MANAGEMENT

On the issue of schedule management knowledge area, Plan Schedule Management, most of the respondent agree to it that it's an most important process with a mean of 4.53(17.28). The result also shows that sequence activities respondent see it as important with a mean of 4.17(15.90%). The plain truth is that the local firms do not estimate their activity duration however, this practice leads to delay in project delivery.

Table 4.8: Showing the level of importance in Project schedule management process (foreign & local)

	Mean	Ranking	Std. Deviation
Plan Schedule Management	4.53	1	.536
Define activities	4.45	2	.594
Develop schedule	4.42	3	.530
Control Schedule	4.38	4	.640
Estimate activity duration	4.27	5	.733
Sequence activities	4.17	6	.785

Table 4.9: Showing the level of importance in Project schedule management process (foreign)

	Mean	Ranking	Std. Deviation
Define activities	4.60	1	.498
Plan Schedule Management	4.60	2	.498
Develop schedule	4.57	3	.504
Sequence activities	4.57	4	.626
Control Schedule	4.50	5	.509
Estimate activity duration	4.50	6	.509

Table 4.9 show the level of importance of the process by the local and foreign companies. Plan schedule management been rank 1st with a mean of 4.53(17.28%) and sequence activities been ranked as 6th. Table 4.9 shows otherwise define activities rank as the most important process with a mean of 4.6(16.83%) however, Estimate activity duration rank the last important.

In table 4.10, plan schedule management, ranks most important with the mean of 4.47(17.8%) nonetheless, comparing table 4.9 plan schedule management ranks 2nd with the mean of 4.6(16.83%). The entire three table namely; 4.8, 4.9 and 4.10 shown that plan schedule management is the most important in this area.

Table 4.10: Showing the level of importance in Project schedule management process (foreign)

	Mean	Ranking	Std. Deviation
Plan Schedule Management	4.47	1	.571
Define activities	4.30	2	.651
Develop schedule	4.27	3	.521
Control Schedule	4.27	4	.740
Estimate activity duration	4.03	5	.850
Sequence activities	3.77	6	.728

4.6 PROJECT COST MANAGEMENT

Cost management deals with funding, managing and controlling of a project it completion (PMBOK 6th, 2017). It mean cost management is an integral part of very project, if a company don't have a good cost management system in place then project undertaking may not see light of the day. Looking at the table 4.11 illustration the mean 4.72 (25.54%) for the plan cost management been the highest shown that all respondent take practical interest about cost as a whole. Estimate cost come as a 2nd most important this show that the industry serious about their cost estimate.

Table 4.11: Showing the level of importance in Project Cost Management process (foreign & local)

	Mean	Ranking	Std. Deviation
Plan Cost Management	4.72	1	.490
Estimate cost	4.70	2	.497
Control cost	4.63	3	.520
Determine budget	4.43	3	.767

With the angle of local construction companies in table 4.12 estimate cost is ranked first by the respondent with mean of 4.67(25.80%) and the plan cost management which was rank 1st by all the 60 respondent came 2nd in table 4.12.

Table 4.12: Showing the level of importance in Project Cost Management process (local)

	Mean	Ranking	Std. Deviation
Estimate costs	4.67	1	.547
Plan cost management	4.60	2	.563
Control cost	4.50	3	.572
Determine budget	4.33	4	.547

Table 4.12 shows that respondent in the local firm rank plan cost management as first with the mean of 4.83(25.61%) conversely, determine budget rank as the last important in all the three tables; table 4.11, 4.12 and 4.13.

Table 4.13: Showing the level of importance in Project Cost Management process (foreign)

	Mean	Ranking	Std. Deviation
Plan cost management	4.83	1	.379
Control cost	4.77	2	.430
Estimate cost	4.73	3	.45
Determine budget	4.53	4	.937

4.7 PROJECT QUALITY MANAGEMENT

Quality management is way of improving performance in the construction industry (Arditi and Gunaydin, 1997), and went on and stated that it gives ways in all aspect of a company to make quality as a strategic objective for the company. For a company to perform it mean quality has to be on it importance list. The result in table 4.14 shows that manage quality ranks 1st by the respondent, (4.48) (33.46%).

Table 4.14: Showing the level of importance in Project Quality Management process (foreign & local)

	Mean	%	Ranking	Std. Deviation
Manage quality	4.48	33.46%	1	.770
Plan quality Management	4.48	33.46%	2	.770
Control quality	4.43	33.08%	3	.698

Table 4.14 and 4.16 illustrate the importance level of the process in the foreign and local companies.

Table 4.15: Showing the level of importance in Project Quality Management process (foreign)

	Mean	Ranking	Std. Deviation
Plan quality Management	4.63	1	.556
Control quality	4.60	2	.498
Manage quality	4.60	3	.563

Table 4.16: Showing the level of importance in Project Quality Management process (local)

	<i>Mean</i>	<i>Ranking</i>	<i>Std. Deviation</i>
<i>Manage quality</i>	4.37	1	.928
<i>Plan quality Management</i>	4.33	2	.922
<i>Control quality</i>	4.27	3	.828

4.8 PROJECT RESOURCE MANAGEMENT

Resource is an integral part of every construction. It is important to make a company more attractive to people to retain and develop them for a success of a business (Loosemore, alt., 2003).

Table 4.17 descriptive analysis has shown that most of the respondent have agreed that plan recourse management is the most important and it has a mean of 4.3.

Table 4.17: Showing the level of importance in Project Resource Management process (foreign & local)

	Mean	Ranking	Std. Deviation
Plan resource management	4.33	1	.705
Control resources	4.33	2	.752
estimate activity resources	4.15	3	.732
Acquire resources	4.13	4	.700
Develop team	4.02	5	1.081
Manage team	4.00	6	.974

Table 4.18: Shows Project Resource Management process

Foreign	Mean	Ranking	Std. Deviation
Plan resource management	4.47	1	.571
Control resources	4.37	2	.809
estimate activity resources	4.30	3	.535
Manage team	4.30	4	.750
Acquire resources	4.27	5	.521
Develop team	4.10	6	1.062
<i>Local</i>	<i>Mean</i>	<i>1</i>	<i>Std. Deviation</i>
Control resources	4.30	2	.702
Plan resource management	4.20	3	.805
Acquire resources	4.00	4	.830
estimate activity resources	4.00	5	.871
Develop team	3.93	6	1.112
Manage team	3.70	7	1.088

4.9 PROJECT COMMUNICATION MANAGEMENT

Communication in the construction industry is in a wide spectrum of skill and this includes a body of knowledge that is not well known to a project perspective (Ofori, 2014).

The respondent agree that manage communication is the most important process with a mean of 4.28. In addition, the table 4.19 show the results for local and foreign companies.

Table 4.19: Shows Project Resource Management process

	Mean	Ranking	Std. Deviation
Manage Communications	4.28	1	.715
Plan Communications Management	4.27	2	.936
Monitor Communications	4.20	3	.708
<i>Foreign company</i>	<i>Mean</i>		<i>Std. Deviation</i>
Manage Communications	4.27	1	.740
Plan Communications Management	4.23	2	.971
Monitor Communications	4.23	3	.568
<i>Local company</i>	<i>Mean</i>		<i>Std. Deviation</i>
Manage Communications	4.30	1	.702
Plan Communications Management	4.30	2	.915
Monitor Communications	4.17	3	.834

4.10 PROJECT RISK MANAGEMENT

From the inception of a construction project risk are been exposed. This study seeks to compare the level of importance in this area. The respondent agree that monitor of risk is the most important with the mean value of 4.28 in addition, perform qualitative risk analysis is the less important with the mean of 4.03. The table 4.20 shows that it is important to monitor risk, Schieg, (2006) added that risk management is not the aim of eliminating risk.

Table 4.20: Showing the level of importance in Project Risk Management process

	Mean	Ranking	Std. Deviation
Monitor Risks	4.28	1	.783
Plan Risk Responses	4.18	2	.770
Plan Risk Management	4.18	3	.892
Implement Risk Responses	4.17	4	.717
Identify Risks	4.12	5	.846
Perform Quantitative Risk Analysis	4.07	6	.778
Perform Qualitative Risk Analysis	4.03	7	.823
<i>Foreign Companies</i>	<i>Mean</i>		<i>Std. Deviation</i>
Plan Risk Responses	4.33	1	.661
Monitor Risks	4.23	2	.774
Implement Risk Responses	4.20	3	.714
Plan Risk Management	4.17	4	.986
Identify Risks	4.07	5	.907
Perform Quantitative Risk Analysis	4.00	6	.871
Perform Qualitative Risk Analysis	3.97	7	.890
<i>Local Companies</i>	<i>Mean</i>		<i>Std. Deviation</i>
Monitor Risks	4.33	1	.802
Plan Risk Management	4.20	2	.805
Identify Risks	4.17	3	.791
Implement Risk Responses	4.13	4	.730
Perform Quantitative Risk Analysis	4.13	5	.681
Perform Qualitative Risk Analysis	4.10		.759
Plan Risk Responses	4.03	6	.850

4.11 PROJECT PROCUREMENT MANAGEMENT

Procurement basically, is the process require acquiring goods and services from outside institution.

Respondent 60 from both firm, 36 indicate that plan procurement management is the most important in the table 4.21.

Table 4.21: Showing the level of importance in Project Procurement Management process

	Mean	Ranking	Std. Deviation
Plan Procurement Management	4.45	1	.769
Control Procurements	4.33	2	.705
Conduct Procurements	4.15	3	.840

Table 4.22 illustrate the result for the local and foreign construction companies. However, plan procurement management is the most important in the process with a mean of 4.40 and 4.50 from the local and foreign companies respectively.

Table 4.22: Showing the level of importance in Project Procurement Management process

Local companies	Mean	Ranking	Std. Deviation
Plan Procurement Management	4.40	1	.855
Control Procurements	4.23	2	.858
Conduct Procurements	4.17	3	.834
Foreign companies	Mean		Std. Deviation
Plan Procurement Management	4.50	1	.682
Control Procurements	4.43	2	.504
Conduct Procurement	4.13	3	.860

4.12 PROJECT STAKEHOLDER MANAGEMENT

From inception to completion of a construction project, vast number of people who are interested in the project will be affected both positive and negative (Olander, 2007). Nevertheless, table 4.22 shows the result from the respondent across the local and the foreign companies the importance levels of the process.

Table 4.23 : Showing the level of importance in Project stakeholder Management process

	Mean	Ranking	Std. Deviation
Foreign companies	Mean		Std. Deviation
Identify Stakeholders	4.13	1	.819
Monitor Stakeholder Engagement	4.03	2	.765
Plan Stakeholder Engagement	4.00	3	.830
Manage Stakeholder Engagement	3.93	4	.944
Local companies	Mean		Std. Deviation
Identify Stakeholders	4.40	1	.814
Plan Stakeholder Engagement	4.07	2	.785
Monitor Stakeholder Engagement	3.90	3	.759
Manage Stakeholder Engagement	3.90	4	.662

4.13 CONSTRUCTION EXTENSION KNOWLEDGE AREA

Table 4.23 illustrate the level of importance among the area of Project health, safety, security, and environmental management. The purpose of the table below is to ascertain the level of importance in the construction extension knowledge area hence, project health and safety has the mean score of 4.37, which means it is the most important among the other knowledge area. Construction companies do not take claims management as important as it is however, Yang and Xu (2011) stated that claims management is an important part of contract management in every construction companies.

Table 4.24: Shows the construction extension knowledge area

knowledge areas	Mean	Not important		Less important		Moderately important		Important		Most important	
		<i>Freq.</i>	%	<i>Freq.</i>	%	<i>Freq.</i>	%	<i>Freq.</i>	%	<i>Freq.</i>	%
Project health, safety, security, and environmental management	4.37			4	6.70	4	6.70	17	28.30	34	56.70
Project financial management in addition to cost	4.32			4	6.7	6	10	17	28.30	33	55.00
Management of claims in construction	4.14	4	6.70			6	10	23	38.30	26	43.30

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

The aim of this study to compare the project management practices in the local and foreign construction companies it help to bring to bear the importance level among the 49 project management process.

5.2 SUMMARY OF THE MAIN FINDINGS

The study examined project management practices of the Local and the Foreign Construction Kumasi Municipality, Ashanti Region. In line with this primary objective, the study investigated three specific objectives. These were to assess the project management practices in the local construction companies in Ghana; to assess the project management practices in the foreign construction companies in Ghana; to compare and contrast the project management practices in the local and foreign companies. The results obtained in the study supported the research objectives examined. Below are summary of the major findings in line with the research objectives

The objective of the study which pursued to determine whether local construction companies adopts project management practices in the implementation of projects were not fully achieved as compere to the foreign Construction companies. The study found that, project management practices such as initiation; the local construction companies adopted planning, execution, monitoring/control, and closing. Similarly, it was reveal that the Company adhered to the various activities in each of the five phases. The local construction companies' solute to use low and minimal resources in teams of project management and Management do not take much interest in the project management practices.

5.2.1 Review of first objective

The first object talks about how project management practices are been implemented in the local and the foreign construction companies in Ghana. In addition, it seeks to know the important levels of the process that are used so that improvement can be made to suit the current project Management institute practices.

5.2.2 Review of the second objective

The second objective was compare the project management practise in the local and foreign construction companies. This was investigated based on level of importance on how the process is been implemented.

5.3 CONCLUSION

Based on the outcome of the study, it can be conclude that the objectives of the study were achieve. In particular, Project Management practices were found to be adopted in the implementation of projects by both local and foreign companies. Adherence to these Project Management practices was found to produce significantly high levels of project success than non-adherence to the practices. It was also observed that failure of local Construction companies' projects was attributable to factors such as lack of management support, lack of sufficient project resources, lack of control mechanisms and poor planning.

5.4 RECOMMENDATION

Based on the findings of the study, the following recommendations are made;

- a) There should be a conscious effort by the local companies to set up a Project Management office with well trained professional Project Managers and team members who can effectively implement the company's projects successfully

b) To ensure effective and successful implementation of projects by the local construction. Project Management practices must be adopted and adhere to the later. Specifically, the various activities under each of the five processes must be carried out effectively to ensure high success rate of projects.

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Appendix

QUESTIONNAIRE

A COMPARATIVE STUDY OF PROJECT MANAGEMENT PRACTICES IN LOCAL AND FOREIGN CONSTRUCTION COMPANIES IN GHANA

The aim of this survey is to gain an insight into the Comparative Study of Project Management Practices in Local and Foreign Construction Companies in Ghana. In order to facilitate the survey process, below are questions which will be used for interaction. Please feel free to share any other knowledge on the success of safety which has not been included below:

*** Required**

1.

What is your highest educational background *

Mark only one oval.

HND

Bsc

Msc

Phd

Others

2.

What is your professional background in the construction industry *

Mark only one oval.

Civil Engineer

Quantity Surveyor

Surveyor

Architect

Others

3.

How many years have you been working in the construction industry *

Mark only one oval.

1- 5 years

6 - 10 years

11 - 15 years

16 year and above

4. **Are you PMP certified Project Manager ***

Mark only one oval.

Yes

No

5. **Is your Company a Local or Foreign ***

Mark only one oval.

Local Company

Foreign Company

Project Management Knowledge Area and it Process

From your experience as professional project manager how will, rank the following processes under ten (10) knowledge areas in project management practice according to the level of importance.

Please tick appropriate boxes

1= not important, 2= less important,3=moderately important, 4 important, 5= most important

6. **Project Integration Management ***

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Develop Project Charter	<input type="radio"/>				
Develop Project Management Plan	<input type="radio"/>				
Direct and Manage Project work	<input type="radio"/>				
Manage project knowledge	<input type="radio"/>				
Monitor and control project work	<input type="radio"/>				
Perform integrated change control	<input type="radio"/>				
Close project or Phase	<input type="radio"/>				

7.

Project scope Management *

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Plan Scope management	<input type="radio"/>				
Collect requirement	<input type="radio"/>				
Define scope	<input type="radio"/>				
Create WBS	<input type="radio"/>				
Validate scope	<input type="radio"/>				
Control scope	<input type="radio"/>				

8.

Project Schedule Management *

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Plan Schedule Management	<input type="radio"/>				
Define activities	<input type="radio"/>				
Sequence activities	<input type="radio"/>				
Estimate activity duration	<input type="radio"/>				
Develop schedule	<input type="radio"/>				
Control Schedule	<input type="radio"/>				

9.

Project Cost Management *

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Plan Cost management	<input type="radio"/>				
Estimate Costs	<input type="radio"/>				
Determine budget	<input type="radio"/>				
Control cost	<input type="radio"/>				

10.

Project Quality Management *

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Plan quality Management	<input type="radio"/>				
Manage quality	<input type="radio"/>				
Control quality	<input type="radio"/>				

11.

Project Resource management *

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Plan resource management	<input type="radio"/>				
estimate activity resources	<input type="radio"/>				
Acquire resources	<input type="radio"/>				
Develop team	<input type="radio"/>				
Manage team	<input type="radio"/>				
Control resources	<input type="radio"/>				

12.

Project Communications Management *

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Plan Communications Management	<input type="radio"/>				
Manage Communications	<input type="radio"/>				
Monitor Communications	<input type="radio"/>				

13.

Project Risk Management *

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Plan Risk Management	<input type="radio"/>				
Identify Risks	<input type="radio"/>				
Perform Qualitative Risk Analysis	<input type="radio"/>				
Perform Quantitative Risk Analysis	<input type="radio"/>				
Plan Risk Responses	<input type="radio"/>				
Implement Risk Responses	<input type="radio"/>				
Monitor Risks	<input type="radio"/>				

14.

Project Procurement Management *

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Plan Procurement Management	<input type="radio"/>				
Conduct Procurements	<input type="radio"/>				
Control Procurements	<input type="radio"/>				

15.

Project Stakeholder Management *

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Identify Stakeholders	<input type="radio"/>				
Plan Stakeholder Engagement	<input type="radio"/>				
Manage Stakeholder Engagement	<input type="radio"/>				
Monitor Stakeholder Engagement	<input type="radio"/>				

Construction Extension

Please tick appropriate boxes

1= not important, 2= less important, 3=moderately important, 4 important, 5= most important

16.

Which Knowledge areas does your company practice?

Mark only one oval per row.

	Not important	Less important	Moderately important	Important	Most important
Project health, safety, security, and environmental management	<input type="radio"/>				
Project financial management, in addition to cost	<input type="radio"/>				
Management of claims in construction	<input type="radio"/>				