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GHANA**

**Comparative Study of Certified PMP and Uncertified PMP Project Managers on
Successful Project Delivery**

By

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MASTER OF SCIENCE

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DECLARATION

I hereby declare that this submission is my own work towards the MSc. Project Management 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 or any other university, except where due acknowledgement has been made in the text.

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DEDICATION

I dedicate this work to my Wife, Children, Parents, Siblings, all Lecturers, Students, Friends, and loved ones for being such an encouragement during my research for the project work.

ACKNOWLEDGEMENT

I am grateful to the Almighty God for assisting me to complete this work and for sustaining me and to all those who helped to make this study possible. A special debt of gratitude is owed to Dr. Ernest Kissi my project supervisor, who sacrificed a great deal of time to give me the needed attention, useful suggestions and encouragement without which this work would not have materialized.

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ABSTRACT

Project managers are an integral part of every project team in ensuring successful project delivery. This is because the role played by a project manager is critical in the life cycle of the project that whether the project will be successful or not depends very much on the project manager. This study sought to establish the effect of Certified PMP and unCertified PMP project managers on successful project delivery in the Accra Metropolitan Area. In adherence, the following objectives were adduced; identifying the level of awareness of the project management knowledge areas among project managers, factors that account for project success, and effects of Certified PMP and unCertified PMP project managers on project success. The study adopted the mix research method to establish the effect of Certified PMP and unCertified PMP project managers on successful project delivery. Purposive sampling technique was used to sample 96 respondents, comprising building consultants, construction firms and ministries within the Accra Metropolitan Area for the study. Questionnaire was used as instrument for gathering data from the respondents. Statistical Product for Service Solutions (SPSS) version 21 was used to process the data. Descriptive statistics such as mean, frequencies and percentages were used to analyse the data. The study found that majority of the project managers fully agree that project management is an effective tool for managing projects and largely apply the concepts of project management in their course of work. A strong agreement exist among project managers both Certified PMP and uncertified PMP that their roles as project managers positively impacted their projects. For uncertified PMP project managers “Leadership style of the project manager”, “Project manager’s handling of Disputes/Claims”, “Project manager’s attitude towards Arbitration” , “Leadership skills of the project manager” and “Project manager’s handling of External factors affecting the project” were ranked as the 5 topmost factors while for Certified PMP project managers project “Project manager ensuring Client

satisfaction”, “Project manager ensuring regular Stakeholders engagement”, “Project manager’s handling of Scope, budget, schedule and quality issues”, “Project manager’s handling of Risk and safety issues” and “Project manager building mutual trust” were the 5 topmost factors. Again most project managers have successfully managed projects before, with 10% of project managers not certain of the outcome of their projects because they claim that the contracts for the projects are often terminated in the course of executing the project by their clients. The study recommends that project managers should exhibit the habits of practicing other project management knowledge areas in order to fully be aware of their implementations, project managers should as much as possible consider measures that could enable them minimize or curb the enormous effects that impact their projects, project managers should intensify their project management practices in order to advance in project success factors and explore additional ones. And finally uncertified PMP project managers should take the initiative to join the professional body to become Certified PMP since they are already aware of project management knowledge areas in other to gain recognition.

Keywords: Project Manager, Project Delivery, Comparative Study, Project and Accra Metropolitan Assembly.

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LIST OF ACRONYMS

BV	Best Value
EEA	Ethiopian Economic Association
GDP	Gross Domestic Products
IT	Information Technology
QBS	Qualification-Based Selection
RII	Relative Importance Index
PM	Project Manager
PMP	Project Management Professional

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Project Managers are considered as the architects of every projects (Turner and Müller 2005; Müller and Turner 2007); they are observed as the pillars upon which the success or failure of a project relies because of their technical expertise (Thomas and Mengel 2008; Raymond and Bergeron 2008). This is because a project manager as stated by Geoghegan and Dulewicz (2008) and Papke-Shields, Beis and Quan (2010) plays a leading role in the entire project life cycle including the planning, executing, monitoring, controlling and closing phases. Furthermore, a project manager is assumed as a project goal-oriented, passionate and organized person who recognizes what is entailed in a project, as well as plays a strategic role in the learning, changing and success of an organization's project goal (Turner and Müller 2006; Dvir, Sadeh and Malach-Pines 2006).

Moreover, a project manager is responsible for the entire project resources, teams, scope (Geoghegan and Dulewicz 2008; Papke-Shields, Beis and Quan 2010). The expertise of project managers does solely relate to managing projects, but also must possess the habit of working under pressure and in dynamic environments; he must possess flexible and diverse working techniques; he must be trusted for his works and also provide effective communication among project stakeholders; he must be agent of change, thus, making the project as their own and ensuring shared responsibilities among project team members (Turner and Müller 2006; Dvir, Sadeh and Malach-Pines 2006; Raymond and Bergeron 2008; Papke-Shields, Beis and Quan 2010). Moreover, the duties and responsibilities of project managers are described as “framework for understanding project managers”. These include the plan of project, project organization, the project lead, and the control of project

(Robichaud and Anantatmula 2010; Lincoln and Syed 2011; Alleman, Antoine, Gransberg and Molenaar 2017; Binninger, Dlouhy, Schneider and Haghsheno 2017). Similar researchers have also stated that to include the project initiation stage, project planning stages, project execution stage, project monitoring and controlling stages, and the project closing stage (Burke 2013; Turner 2014; Kerzner and Kerzner 2017).

People who practice or observe these functions are deemed as Certified PMP project managers since they have acquired the requisite knowledge and certified, professional skills and techniques in managing projects successfully (Gharehbaghi and McManus 2003; Robichaud and Anantatmula 2010; Alleman, Antoine, Gransberg and Molenaar 2017; Binninger, Dlouhy, Schneider and Haghsheno 2017). Moreover, these project managers are certified and registered under an intentionally recognized project management frameworks considered by IPMA (PMBok), APMG (Prince2) and PMI (PMBok). Unlike certified project managers who are described as professional and Certified PMP project managers, uncertified PMP project managers, by inference, do not hold any project management certification, thus, making them unprofessional in any project they manage. Even though these uncertified PMP project managers are capable of managing projects in terms of observing the “framework of understanding project managers”, yet, the professional touch to executing successful project works is seen as missing. It is also deemed that by inference, they might not probably possess some of the qualities of project managers as stated above by (Turner and Müller 2006; Dvir, Sadeh and Malach-Pines 2006; Raymond and Bergeron 2008; Papke-Shields, Beis and Quan 2010). They further asserted from their study that the basic benefits that a construction manager can provide include quality project design improvement, early cost certainty, innovations opportunities, reduction of risk, and optimization of project schedules. Hence, a suitable project manager is selected for a successful project completion through mechanisms such as best value (BV) procurement process.

1.2 STATEMENT OF THE PROBLEM

The construction industry with respect to the focus of the major functions and roles played by project managers has seen a gradual shift (Edum-Fotwe and Mccaffer 2000). The role of project managers is one of the major aspects which purpose is at developing efficacious project. The momentous role and responsibilities of project manager is to plan, schedule and allocate resources towards development of the project. Hence, competence of project manager in right assessment and forecast of resources for the project has a persuading impact on the success of a project. Styhre (2006) stated that the knowledge of project manager plays a precarious role in the success or failure of projects. They further felt that a Certified PMP project manager with his or her skill level on incorporation, scope, time, cost, quality, human resource, communication management and risks has an impact on the success of the project. The failure or success of a project depends on the competency of the project manager and the role he or she plays in the project.

The construction industry in Ghana is declining in project delivery success as a result of it not being considered as a major challenge or the inefficiency of project managers. The issue of Certified PMP project managers in the construction industry has been left without cognizance. Improper management of construction processes leads to delays, abandoning a project, shoddy works and not making them competitive to the foreign partners in the construction industry. There are some firms in the country that do not even have project managers managing projects but rely on local folks for their perspective of managing a project.

It is therefore important for a comparative study to be carried out to establish the effect of Certified PMP and uncertified PMP project managers on successful project delivery.

1.3 RESEARCH QUESTIONS

1. What impacts do uncertified PMP project managers exert on projects success?
2. What factors account for project success?
3. What is the impact of these factors on project managers?

1.4 GENERAL RESEARCH OBJECTIVES

1.4.1 Research Aim

The aim of this study was to do comparative analysis on the effect of Certified PMP and uncertified PMP project managers on achieving project success.

1.4.2 Objectives

In achieving the aim of the study the following objectives were espoused;

1. To identify the level of awareness of the project management knowledge areas among project managers;
2. To identify factors that account for project success; and
3. To identify the effects of Certified PMP and uncertified PMP project managers on project success.

1.5 JUSTIFICATION

In the construction industry, project managers need to adjust to the changing trend of mechanisms through training to update themselves with skills, knowledge and experience in order to maintain their professional competency (Edum-Fotwe and Mccaffer 2000). This could equip project managers to acquire and build on their managerial capabilities as well as enhancing their manpower aimed at enticing construction firms (Edum-Fotwe and Mccaffer 2000). Dubois and Gadde (2000) discussed that the construction industry is categorized by significant collective variations. This is because certain key industry players or actors such as governmental agencies, contractors and material producers who sets guidelines and

conditions through continuous collective efforts result into the development of standardized systems and components. The conduct of research into the construction industry to ascertain the effects of Certified PMP and uncertified PMP project managers on the industry has become necessary due to the project delivery menace, especially on the Ghanaian perspective. This could inform policy makers to factor into decision-making and take into considerations, laws and policies regarding the construction industry in Ghana at large. These laws and policies when instituted and implemented would curb the menace of uncertified PMP or unprofessional project managers in the construction industry by stipulating standards and perhaps setting some qualification limits for practitioners in terms of education, skills and experience. Better still, these policy frameworks could enable uncertified PMP project managers to acquire and update their background knowledge on managing projects. This could also ensure and enhance that delivery of projects are given a priority. Sustainability in the construction industry is very vital to the infrastructural projects, notably the building and road sectors. Brown and Duguid (1998) proposed a platform called community of practice. It is noted that this mechanism (community of practice) reduces uncertainty and serves as an informal coordination mechanism in loosely coupled systems. Therefore, this study seeks to examine the impact of Certified PMP and uncertified PMP project managers in the Ghana, particularly the construction industry.

1.6 SCOPE OF THE STUDY

The scope of the study was specifically categorized into two sections, namely; geographical and contextual scopes. Geographically, the study was conducted at Accra Metropolitan Assembly in the Greater Accra Region of Ghana. Contextually, the study sought to look at the effect of Certified PMP and uncertified PMP project managers on project success delivery in the construction industry of Ghana. The researcher employed both primary data and secondary data collection techniques. Data collection was conducted within three months period.

1.7. RESEARCH PURPOSE

Descriptive survey method was used for this research work. According to Cooper and Schindler (2003) a descriptive study describes the existing conditions and attitudes through observation and interpretation techniques. Moreover, the study finding from a descriptive study can be used as a general scenario pertaining to a peculiar environment.

1.8 ORGANIZATION OF THE STUDY

This research work was organised into **five main chapters**. **Chapter one** was centred on the general introduction of the study with focus on the background to the study, problem statement, and justification, research objectives, the research questions, scope of the study, as well as organization of the study. **Chapter two** entailed the review of relevant theoretical literature and discussions on concepts of roles of a project manager, factors that account for project success and effect of Certified PMP and uncertified PMP project managers on project success. **Chapter three** concentrated on methodology of the study in detail, thus, considering the profile of the study area, research design, and data collection methods, sampling size and determination, as well as how data presentation was described. **Chapter four** described the presentation of results and its discussions. **Chapter five** was based on the conclusion of study findings and its recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter concentrated on the theoretical review of relevant literature on the subject matter. In this chapter, emphasis was placed on projects and factors that accounts for their success, project managers, role of project managers, and impact of Certified PMP and uncertified PMP project managers on projects, especially the construction industry.

2.2 PROJECTS

Keegan and Den Hartog (2004) and Geoghegan and Dulewicz (2008) have described projects as a temporary work executed to produce a unique outcome such as a product, service or result. There are different kinds of projects, as well as their related project managers based on the purpose of the project. Some of these include Infrastructure Project Manager, IT Project Manager, Digital Project Manager, Construction Project Manager, Oracle Project Manager, Change Manager, Web Project Manager, Legal Project Manager, SAP Project Manager, Project Controller, and Business Project Manager. In practice, project managers are expected to observe the management of projects due to their professional background, making them Certified PMP with acquisition of experience, skills and techniques in successfully delivery of projects (Burke 2013; Turner 2014; Kerzner and Kerzner 2017). Therefore, this research study is concentrated on the construction. In line of this, EEA (2008) stated that the construction industry in general is an economic activity focused on creating, renovating, repairing or extending of fixed assets such as buildings, land improvements of an engineering nature, as well as bridges, roads, dams constructions. Besides, Wasilkiewicz, Albrechtsen and Antonsen (2017) expressed that construction projects are multifaceted socio-technical structures that can take many different managerial forms. Moreover, construction projects are distinctive associated to the type of project, ways of doing work, partners and techniques. In

construction, project can be either be civil or building engineering (Delgado-Hernandez and Aspinwall 2005). Conventionally, construction projects according to Delgado-Hernandez and Aspinwall (2005) involve steps called the construction process which includes: briefing, designing, tendering, construction and commissioning. Nevertheless, these processes may not applicable depending on the type of agreements revolving the contract of the project (Delgado-Hernandez and Aspinwall 2005). Projects are considered as the accomplishment of project objectives which includes sequences of project tasks and activities that consume project resources (Munns and Bjeirmi 1996 cited in Chan and Chan 2004).

Projects, particularly building projects in relation to their completion according to Chan and Chan (2004) is a combination multifaceted interactions and events, unplanned and planned, over a facility's life, with shifting processes and participants in a regularly changing setting. Lincoln and Syed (2011) asserted that a project at a conceptual stage encompasses project alternatives development, project risk analysis and its associated economic payouts, and a financial plan development. Projects have definition stages and they comprise needs and values determination, design criteria, and conceptual design (Lincoln and Syed 2011). Projects according to Songer and Molenaar (1997) cited in Chan and Chan (2004) can be assumed as successful if completed on schedule, budget, meets standards or specifications, meets client's prospects, minimizes aggravation, as well as attaining quality workmanship. Some projects require that the project managers and superintendents remain the format for updating (Lincoln and Syed 2011). In effect, Huang and Hinze (2006) asserted that a project include the involvement of key project stakeholders such as project designers, project contractors, and project owners.

2.2.1 Contributory Factors to Project Success

The success of a project has been considered by some researchers in two ways, thus, project success factors which include independent variables, effective to increase probability of project success; and project success criteria which is also based on the criteria someone can judge if project outcome is successful or not (Bakhsheshi and Nejad 2011; Badewi 2016; Haron, Devi, Hassim, Alias, Tahir and Harun 2017). Spalek (2005) stated that project managers want to run and achieve project success, but the situation is not always so. Research works on project management have revealed that there are factors that contribute to project success or failure. Hereto, Standish Group (2003) reported that significant number of projects that fail are as a result of insufficient project budget or project timeline; uncertified PMP project manager, lack of commitment, lack of technical project management (McDonough III 2000; Müller and Jugdev 2012); project cost, time, customer satisfaction and project management practice (Ng, Tang and Palaneeswaran 2009).

Nonetheless, it has been observed that the values, beliefs, traits, behaviours, and skills of the project manager all contribute to the success of a project (Bakhsheshi and Nejad 2011; Besner and Hobbs 2006; Haron, Devi, Hassim, Alias, Tahir and Harun 2017; Hassan, Bashir and Abbas 2017). More also, Spalek (2005) attributed factors that contribute to project success as follows: top management support for the project, instituting a competent and experienced project team, a clear defined project goals and objectives, and establishment of roles and functions of stakeholders. Moreover, the success of a project delivery can be dependent on its management performance, thus considering and evaluating the technical competency, behaviour, weakness, strengths and experiences of personnel, as well as leadership potentials (Taherdoost and Keshavarzsaleh 2016). Furthermore, Taherdoost and Keshavarzsaleh (2016) mentioned that a traditional or conventional way of measuring project success is based on project cost, project timeline, and project requirements. Additionally,

project success is determined by client consultations, project plans and schedules, technical or technological task, top management support, project personnel or team, project omission, monitoring, evaluation and feedback, and communication among stakeholders (Milosevic and Patanakul 2005; Besner and Hobbs 2006; Cheong Yong and Emma Mustaffa 2012; Müller and Jugdev 2012).

2.3 PROJECT MANAGERS

In project management discourse, project managers are described as the technocrats who manage projects and achieve success and delivery (Milosevic and Patanakul 2005; Müller and Jugdev 2012; Taherdoost and Keshavarzsaleh 2016). In construction, Project managers, as described by Edum-Fotwe and Mccaffer (2000) are people who seek to achieve success by considering project timeframe, project cost, as well as putting emphasis on safety and quality requirements for their clients or project owners. Moreover, they play a central role in operative activities of engineering and architectural and construction sector, as well as contributing to the infrastructure development of a country (Edum-Fotwe and Mccaffer 2000). Project managers with favourable conditions can complete projects with project success concept which is geared at setting project standards and criteria (Chan and Chan 2004). In a conventional construction setting, Lincoln and Syed (2011) expressed that project managers have the zeal to consign work schedules beyond crew's capacity in view of completing the construction. With respect to the characteristics of project performance and production system, project managers according to Tommelein, Riley and Howell (1999) need to be circumspect in the management of their activities as well as identifying and curbing setbacks when they occur. Project managers in the course of executing their activities apply improved skills, technologies, and delivery processes, nonetheless, they are obstructed by a cohesive strategy that remain unchanged with little motivation (Lincoln and Syed 2011)

2.3.1 Roles of Project Managers

In project management practices, project managers are responsible for the delivery of projects and its activities, besides, superintends on the entire project with respect to the project plan (including project timelines), its execution and delivery (Müller and Turner 2007; Robichaud and Anantatmula 2010; Kapelko, Horta et al., 2015). Generally, project managers are expected to follow a conventional procedure of successfully delivering their projects. This procedure involves the planning of the project, organization of the project, leading the project, control and closing of projects (Papke-Shields, Beise et al., 2010; Fulford and Standing 2014; Binninger, Dlouhy, Schneider and Haghsheeno 2017; Kerzner and Kerzner 2017). During the project planning phases, it is expected that project managers will define the scope of the project, resulting into project strategy development; they will define the project schedules, as well as defining the project policies and protocols that will enable the project team to play their functions towards the delivery of the project (Burke 2013; Turner 2014).

During the project organization stages, project managers are expected to structure the frame of the project team, identify and define project teams' respective functions, and define the project hierarchy or channels towards successful delivery of projects (Larson and Gray 2015; Kerzner and Kerzner 2017). During the project leading stages, project managers are expected to outline and maintain strong communication channels among key stakeholders, set clear cut targets and maintain transparency among the team, detect and possibly provide antidote to rising issues before it gets out of control, resolve conflicts as it happens, and delegate certain tasks at any project stage as the need arises (Geoghegan and Dulewicz 2008; Raymond and Bergeron 2008). Finally at the control and closing stages, project managers measure the projects to identify and ensure that project goals are in line with its achievement, evaluate the project to analyze factors that can impinge the progress of the project, and make corrections to the projects yet, communicate to all stakeholders on the level of deliver (Project

Management Institute 2018). Tommelein, Riley and Howell (1999) expressed that construction managers, engineers, architects, as well as project owners play some vital role either in the cause or prevention of problems related to the projects they execute. Lewis, Welsh, Dehler and Green (2002) stressed that project managers can either take on participative or directive functions based on sponsor and supervisor roles distinctions. In view of this, McGrath (2001) stated that the supervision role of project managers include project specification goals and management of operational activities. Additionally, project managers perform monitoring duties which is geared at evaluating and tracking the progress of projects, still provide control based on decision making in the course of executing their supervisory role (Lewis, Welsh, Dehler et al., 2002). Still, to detect and tackle problems that hinder the project progress, project managers can base on feedback mechanisms to consistently manage and evaluate the paths of projects (Lewis, Welsh et al., 2002).

Edum-Fotwe and McCaffer (2000) expressed that a project manager upon considering project time space, safety and quality mechanisms and project cost is responsible for the general success delivery of construction projects to the project owners. Russell, Jaselski and Lawrence (1997) suggested that project managers must increase their customary functions with the inclusion of other non-engineering knowledge and skills in order to fit into modern methods of managing projects in the construction industry. Moreover, for project managers to maintain their relevance in the construction industry, Edum-Fotwe and McCaffer (2000) further expressed that they should depend on the several experiences that enables them to achieve results for both construction and non-construction functions. Project managers according to Kelley and Lee (2010) exert control when projects are less purposefully related and when resource requests are high in terms of project innovativeness. Yet still, when projects are highly innovative yet tactically related, project managers balance empowerment with a sponsor role (Kelley and Lee, 2010). Furthermore, project managers set project goals

to be accomplished by members of the project team that he normally selects (Lewis, Welsh, Dehler and Green 2002; Kelley and Lee 2010)

2.3.2 Impacts of Certified PMP Project Managers

The success or failure of projects and their delivery is dependent on the project manager (Besner and Hobbs 2006; Müller and Jugdev 2012; Taherdoost and Keshavarzsaleh 2016). Project managers are deemed as Certified PMP when they have acquired the necessary background, gained and improved on their skills and experiences (Gharehbaghi and McManus 2003; Robichaud and Anantatmula 2010; Alleman, Antoine, Gransberg and Molenaar 2017; Binninger, Dlouhy, Schneider and Haghsheeno 2017), as well as being certified and registered by an internationally recognized project management body or frameworks that acknowledge the following IPMA (PMBok), APMG (Prince2) and PMI (PMBok). Project managers due to their technical background and experiences are able to impact positively on projects success delivery. Scholarly works have postulated that project managers by means of contributing to success delivery are cable of reducing project time response, predicting project outcomes, improving decision-making, improving communication among project stakeholders, controlling project finances and costs and budgets, managing project team and structures, improving initial product quality, as well as reducing project costs and maximizing efficiency. Moreover, project managers are capable of influencing the project goals by means of adjusting resources including project timeframes to achieve success and delivery (Globerson and Zwikael 2002). In effect, the overall goal of a project manager is to successfully achieve project goals, thus, successful project completion and delivery (Burke 2013; Turner 2014; Larson and Gray 2015; Kerzner and Kerzner 2017; Project Management Institute 2018)

2.3.3 Impacts of Uncertified PMP Project Managers

O'Halloran (2013) pointed out that too many projects that fail could be as a contributory factor of shortage of skilled or Certified PMP project managers. Project failure is as a result of the fact that project management is a huge project implementation tool that seeks to achieve the execution of the entire project from project initiation stage to closing stage, and that lack of its knowledge and techniques could cause project delay and failure. This presupposes that uncertified PMP project managers take over the management of projects. Uncertified PMP project managers though could have gained some experiences in managing projects, yet, the professional background and skills development could be lacking (O'Halloran 2013). Uncertified PMP project managers by inference are those without the requisite project management background, remain unrecognized and unregistered by a professional project management body unlike Certified PMP project managers. The impact of project failure is costly, in that, the entire project needs reconsideration, in terms of resources, budgets, and timeframes (Turner and Müller 2005; Müller and Turner 2007; Thomas and Mengel 2008; O'Halloran 2013). These category of project managers are mostly observed on the Ghanaian context, especially construction industry where there could be artisanal masons depicting themselves as building contractors because of the experience they have gained in the industry.

2.4 CONSTRUCTION INDUSTRY

Wasilkiewicz, Albrechtsen and Antonsen (2017) ascertained that the construction industry is project-based and operates in an ever-changing environment. The construction industry according to Ortiz, Castells and Sonnemann (2009) is a universally developing sector, and an extremely dynamic sector in both developing and developed countries. In hereto, the various activities performed under construction have a substantial influence on economy, environment and social sectors of countries (Ruparathna and Hewage 2015). The construction

industry of some countries remains a huge sector that contributes to the growth of the countries (Ortiz, Castells and Sonnemann 2009; Lincoln and Syed 2011; Ruparathna and Hewage 2015), but with the introduction of optimization techniques and performance improvement, the sector lacks behind the service and manufacturing industries (Lincoln and Syed 2011); it showcases seemly atmosphere for appraising the improvement of skilled proficiency in project management (Edum-Fotwe and Mccaffer 2000). Nevertheless, the industry, according studies, has experienced with high levels of unexploited materials and humans resources (Lincoln and Syed 2011). The construction industry is noted for its significant contribution to the economic growth of countries. Some of the contributions that the sector has provided include employment creation, especially the unskilled labour, generation or mobilization of government revenue through taxes thus, contributing to the country's GDP, the multiplier effect due to the sector's linkages with other sectors of the economy, in terms of trading and supply of various goods and services (EEA 2008; Ofori 2012; Isa, Jimoh and Achuenu 2013).

The industry also provides some welfare and social benefits in terms of housing infrastructure which serves as shelter for all purposes, thereby enhancing the living standards of people (Ofori 2012). It is further noted that construction industry has its development, thus, a considered and achieved process to develop the capability and efficiency of the construction sector in view of contributing to the demand of a nation's economic civil and building engineering outputs, in order to provide support for sustainable national social development purposes and promote socio-economic growth (Ofori 2012). This is achievable through the provision of technology development, materials development, corporate development, documentation development, operating environment development, institutional building, and human resource development (Ofori 2012). Eventually, construction industry development is expected to promote domestic construction firms through competitiveness and viability;

enhance stakeholders and participants roles through technological, process, institutional development, as well as human resource development; create value for money and investment in the sector, considering environmental functions as well (Ofori 2012).

2.4.1 Western World View of the Construction Industry

The European Commission (2006) cited by Ortiz, Castells and Sonnemann (2009) indicated that the construction industry created 11.8 million jobs that enable the sector to be the largest industrial employer in Europe economically and socially. The construction sector further contributed for 7% and 28% of the entire European employment and industrial sectors respectively. Furthermore, Ortiz, Castells and Sonnemann (2009) expressed that in 2003, an investment of € 910 billion was made into the construction sector which forms 51.2% and 10% of the EU's Gross Fixed Capital Formation and GDP respectively. Rowlinson, Ho and Po-Hung (1993) observed that the City of Hong Kong has immensely increased in population, and as such, the construction industry has been positively affected in terms of building projects. According to them, the construction industry experienced subcontracting as a means of speedily completing building or construction projects.

In the United States of America, Lincoln and Syed (2011) stated that the construction industry in 2006 contributed 8% to the economy's gross domestic product (GDP) amounting for \$1,260.128 billion, yet in 2007, the sector employed about 7.614 million people in the field of design, manufacturing of equipment and materials, renovation construction, new construction, and supply of construction materials and it was projected that the construction industry would create 58.4% jobs between 2002-2012 decade per the reports complied by the US Labour Department of the Bureau of Labour Statistics (BLS). In Canada, Ruparathna and Hewage (2015) emphasized that the construction industry contributed for 6% of the gross domestic product (GDP). Moreover, the Canadian construction sector as indicated by Industry Canada (2011) cited by Ruparathna and Hewage (2015), consumes 33% and 50% of

total energy usage and extracted natural resources respectively. Additionally, the sector produces 35% of greenhouse gas emissions, 10% of airborne particles, and 25% of landfill waste. In 2010, 7.1% of the total Canadian workforce which represented 1.2 million employees was contributed by the construction sector. Projection in the Canadian construction industry as forecasted by Betts, Robinson, Burton, Cooper, Godden and Herbert (2011) assumed that there will be an increment from \$7.2 trillion in 2011 to \$12 trillion by 2020 with 67% expenditure in the construction sector. Again, by the year 2020, the sector will spend \$97.7 trillion and its GDP contribution will be 13.2% (Betts, Robinson, Burton, Cooper, Godden and Herbert 2011). Moreover, statistics gathered by Ruparathna and Hewage (2015) indicated that Canada's GDP contribution from the construction industry increased by 42.7%, whereas 20.2% GDP was contributed by the industrial sector between the year 2000 and 2010.

In the United Kingdom (UK), Delgado-Hernandez and Aspinwall (2005) emphasized that the construction sectors remains a major economic promoter which accounts for 5.4% of the GDP of the UK. Moreover, the UK construction industries have employed about 100,000 workers according statistics compiled by the Considerate Constructors Scheme (2004) cited in Anderson, Ruhs, Rogaly and Spencer (2006). More recently, the employment rate contributed by the construction sector of the UK as risen to 55, 831 in the year 2015, with jobs concentrated around the North West, South East of London, and London to be precise, in addition to 2,557 new firms operating in the sector as of the 2016. In the Asian world, it was observed that there has been increase in foreign construction firms' involvement in the construction industry due to the technological advancement; markets deregulation of materials, globalization, and constraints in developing managerial issues strong financial support of advance countries, as well as superiority in technical knowledge by advance countries (Raftery, Pasadilla, Chiang, Hui and Tang 1998). The Chinese construction industry

according to Chen (1998) generates an annual output of US\$93 billion. Moreover, the sector employed 5% of the Chinese work force which amounts to 24 million workers; it accounts for more than 6% of the GDP and since 1978, an annual rate of 10% has been contributed to the Chinese GDP, making the sector a rapid economic promoter (Chen 1998). According to Raftery, Pasadilla, Chiang, Hui and Tang (1998), contributions to the national GDPs by the construction sectors of the following countries in 1997 include: Indonesia (7.5%), Korea (6.4%), Malaysia (8.0%), Singapore (6.5%), and the Philippines (5.3%). Additionally, the growth of the sector at the same year was indicated as follows: Indonesia (22.7%), Malaysia (8.8%), Singapore (16.0%), and the Philippines (16.3%) (Raftery, Pasadilla, Chiang, Hui and Tang 1998). A construction master plan covering the period of 2006-2015 was established by Malaysian construction industry stakeholders to improve, enhance and propel the construction sector into a knowledgeable global construction solution provider, provide innovation in the industry and project the industry into a world-class status (Construction Industry Development Board 2007). The construction accounts for 7% of GDP contribution to the Portuguese economy; it also contribute about 10% of GDP of the Spanish economy (Kapelko, Horta, Camanho and Lansink 2015). In the United Arab Emirates (UAE), Faridi and El-Sayegh (2006) expressed that the country's construction industry plays a key role the economic growth of the country and accounts for 14% to the entire GDP of UAE.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This Chapter covers the description of the study area, research design, research purpose, and data collection procedure employed for this study as well as presentation of data.

3.2 STUDY SETTING

3.2.1. Description of Accra Metropolitan Assembly (AMA).

Historically the Accra Metropolitan Assembly (AMA) began as a Town Council and was first established by the Town Council Ordinance of 1894, after the introduction of Native Authorities by the colonial government in 1878. The native authorities were local government units made up of non-elected paramount chiefs, sub-chiefs and elders. The traditional rulers served as central figures in local government and were only given powers to pass bye-laws, though this local administration produced close relationship between the chiefs and the British authorities, it failed to meet the needs and aspiration of the people.

Accra is the Metropolitan, Regional and National Capital and this role places Accra in a very unique position in Ghana. Geographically, the Accra Metropolis covers an area of 173 sq km. The Southern boundary of AMA is the Gulf of Guinea stretching from Gbegbeyese to La. It shares boundary with the Ledzokuku-Krowor Assembly on the East. On the Northern and Western frontiers there are Ga East, Ga West, and the Ga South District. The assembly has several departments including the urban roads department which supervises the constructions of roads in the city. The study population consists of personnel of this department.

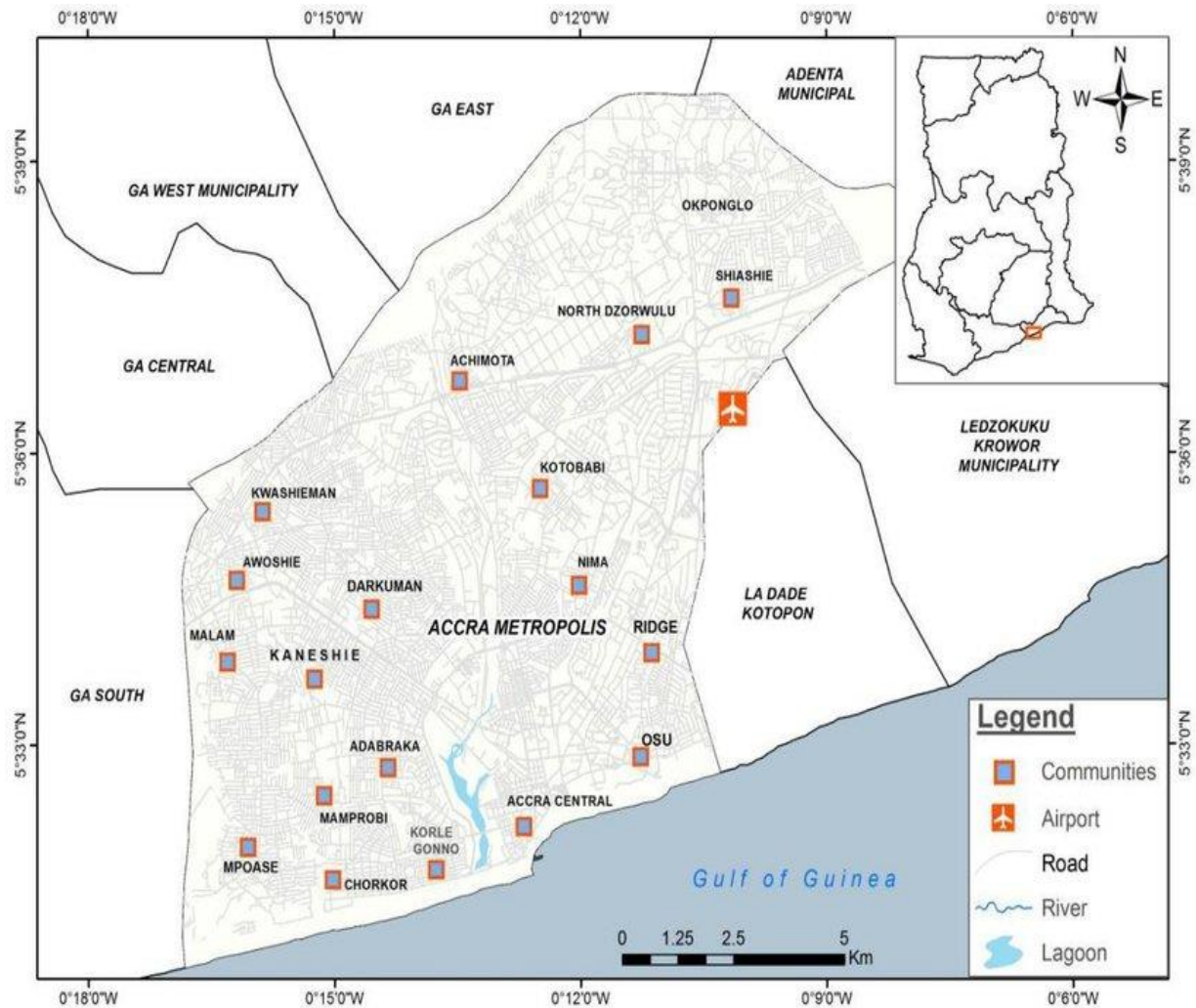


PLATE 1: Map of Accra Metropolis

3.2.2. Reasons for Choice of Study Setting

The choice of Accra Metropolitan Assembly as a study setting for this research work was considered due to the fact that, there were huge and numerous construction projects being undertaken in the metropolis considering its scope or territory or boundaries. Moreover, the metropolis was considered to be an appropriate location to get the needed or required data responses for this study. Finally, the study area was considered due to the closeness or proximity of the researcher and the familiarization of the environment.

3.3. RESEARCH METHOD

The quantitative research survey was used for this study. Mathers, Fox and Hunn (2007) expressed quantitative survey as numerical data and its measurements. It was further observed that quantitative research produces results that can be used to generalize a population, hence serves as external validity of sample population (Marczyk, DeMatteo and Festinger 2005; Mathers, Fox and Hunn 2007; Teddlie and Yu 2007; Bryman 2012), and is related to all experimental and descriptive researches (Mathers, Fox and Hunn 2007). In view of this, the results from the research findings were illustrated with visual presentation which took the forms such as charts, tables, and figures after the data was statistically analyzed when selected variables or indicators were computed into the statistical analyses software (SPSS).

3.4 DATA COLLECTION

Data collection respondents for this study were selected from the construction industry to include mainly the project managers in the construction institutions, construction firms, and construction consultants in the metropolis with the use of semi-structured questionnaires (Appendix A.). The use of the questionnaire was to triangulate the information gathered from the secondary data (Neuman 2005; Cleary, Horsfall and Hayter 2014)

3.5. SOURCES OF DATA COLLECTION

Primary and secondary data procedures were used for this research work. However, desktop study approach was employed to review relevant documents and materials regarding the subject matter (i.e. construction industry) during the secondary data collection.

3.5.1 Primary Data Collection

Primary data collection, unlike secondary data according to Fallon (2016) is an original data directly gathered by the researcher on the ground for the first time which is peculiar to a problem that is being understudied. Moreover, Neelankavil (2015) expressed that it is a self-administered data with the use of tools such as questionnaires, field observations, and interview. In view of this, the collection of primary data by the researcher took a form of a survey. This is because Driscoll (2011) and Neelankavil (2015) considered a survey as an appropriate method of research into social issues especially getting the views of a sample to generalize for a large population. This kind of research may be conducted with questionnaire administration (open or close-ended) or structured interview with a checklist of questions (Neuman 2013; Fallon 2016). The collection of primary data enabled the researcher to ascertain hidden findings related to the survey which was verifiable and also helped to eliminate further biases associated with the survey (Neelankavil 2015; Fallon 2016). Furthermore, collection of primary data enhanced the researcher's understanding of the problem with respect to the study setting (Kumar and Phrommathed 2005; Driscoll 2011; Neuman 2013). Therefore, collection of primary data with the use of questionnaire targeted Certified PMP and uncertified PMP project managers, construction firms, and construction consultants.

3.5.2 Secondary Data Collection

Secondary data mainly entails works conducted by other researchers on a subject matter (Hox and Boeije 2005; Daas and Arends-Tóth 2009). These are documents such as books, journals, workshop or conference documents that have been archived for the purpose of referencing and documentation (Hox and Boeije 2005; McMillan and Schumacher 2010). The collection of secondary data intensified and improved the validity and reliability of primary data collection (Johnson and Turner 2003; Johnston 2017). The use of the secondary data enabled

the researcher to review and had a fore knowledge of the problem being understudied to include the study setting; it enhanced the scope of the study by defining relevant information related to the survey (Cope 2014). During the collection of secondary data, the researcher carried out a comprehensive and widespread review of relevant and related documents on the subject matter. The documents gathered for the collection of secondary data as per the focus of this study (i.e. construction industry in Ghana) were composed of law, policy and legal frameworks. These documents included: the 1992 Constitution of Ghana, the National Land Policy (2015), the Local Government Act (1993) Act 462, the National Urban Policy (2011), the National Policy on Public Partnership (2011). Further documents consulted for secondary data collection included: Housing and Urban Development in Ghana (2004), the Draft Land Use and Spatial Planning Bill (2011), Draft National Slum Upgrading and Prevention Strategy (2013). The researcher also carried out information or data variability and validity with the use of the internet.

3.6. METHODS OF DATA COLLECTION

The processes of methods of collection of data, particularly collection of primary data were reconnaissance visit, questionnaire administration and direct observation.

3.6.1 Reconnaissance Visit

The reconnaissance visit was made to the study area and it enabled the researcher to have first-hand information about the survey. This is because a formal introduction was performed by the researcher to include the purpose of the survey to the target respondents (i.e. project managers) at the various institutions. The process was to also ensure that the researcher build a mutual relationship and trust with the respondents, and sought for their support during the main survey. It was recommended that the researcher, during this process could test the survey questionnaires (Cope 2014; Johnston 2017). The questionnaire pre-testing enabled the

researcher to restructure the questionnaires by ensuring that irrelevant questions have been removed. Again, it ensured that elements of biases have been omitted. Furthermore, the restructure of the questionnaires through the pre-testing process ensured that time duration during the main survey are considered with regard to questionnaire administration. During this process, the researcher carried out a visit to the target respondents (i.e. project managers) in some of the stakeholders related to construction to include the ministerial bodies such as the Ministry of Water Resources Works and Housing (MWRWH); Ministry of Local Government and Rural Development (MLGRD), and Ministry of Environment, Science and Technology Innovation (MESTI). Additionally, other stakeholders such as the institutions in the construction industry to include the National Housing Authority (NHA), National Development Planning Commission (NDPC), State Housing Company Ltd (SHC), Building and Road Research Institute (BRRI), Department of Rural Housing. Other stakeholders visited were the Ghana Green Building Council (GHGBC), Ghana Real Estate Developers Association (GREDA), and Tema Development Corporation (TDC) as well as the Micro Concrete Roofing Tiles (MCRT). The researcher furthermore considered these stakeholders by virtue of their existence as institutions in the Ghanaian construction industry, and also their readiness to partake in the survey.

3.6.2 Questionnaire Administration

Social scientists have expressed that the use of questionnaires is suitable for gathering quantitative data because it can be used as generalization of the sampled respondents (Song, Son and Oh 2015) Schnall, Wolkin and Nakata (2018) expressed that questionnaires are set of questions that a respondent provides answers to. This infers that the respondent was given the chance to read and provide his/her comments to the questions. Nonetheless, the researcher provided assistance for those (respondents) who could not read to help administer the questionnaires by means of reading and interpreting the questions to the understanding of the

respondents in order to get accurate feedback or answers to the questions. In view of this, Hoxley (2016) expressed that the interviewer (researcher) does so in the language that the respondents understand. The method of questionnaire administration took the type of a face-to-face approach (Krosnick 2018) because it enabled the researcher to explain and expressed himself of what he wants to achieve from the respondents through clarification seeking by means of asking follow up questions, flexibility and precise responses from the respondents (Hoxley 2016; Patten 2016). Furthermore, during the questionnaire administration process, a set of questionnaire which entails information related to their demographic features and the role as project managers in the Ghanaian construction industry.

3.6.3 Direct Observation

The method of direct observation enables the researcher to document activities during research; it provides the avenue to witness behaviour and physical sides of the process against the backdrop of relying on the ability and willingness of people in response to the questions (Taylor-Powell and Steele 1996). This method of research became useful when the researcher wanted direct information, tried to comprehend a current behaviour, process, and unraveled events or situation in the construction industry, particularly the Accra Metropolitan Assembly zone. Moreover, the researcher wanted to record some physical evidence that can be freely understood, and also record additional or extra data that can be used to support the main data (Taylor-Powell and Steele 1996)

3.7 POPULATION

The population of a survey in social research discourse mainly describes the whole group of individuals in a confined setting or area (Champ 2003; Morris et al. 2010). Furthermore, it is from the survey population in which a generalization is drawn based on samples selected for representation (Kelley et al. 2003; Buckingham and Saunders 2004). The focal point (i.e.

target respondents) for this study was the Certified PMP and uncertified PMP project managers in the study area (i.e. AMA). However, these classes of project managers can be found in construction related entities including the ministerial bodies such as the Ministry of Works and Housing; construction related institutions such as construction firms; associations related to construction; construction or project consultants, as well as indigenous or local construction artisans. Nonetheless, the entire population of these categories of project managers remains unknown since there was no database covering these target respondents in the study area. This is because these target respondents are scattered within the study setting and as such all efforts put in place by the researcher to inquire about the population of each categories proved futile.

3.7.1 Sample Size Determination

The general population of the entire institutions was unknown. In view of this, the researcher adopted a formula to calculate for sample size for an unknown population by Cochran (1977).

The formula is stated as:

$$\eta = \frac{1.96^2 \alpha^2}{E^2}$$

Where η = sample size

1.96 = 95% confidence level

α = standard deviation

E = error rate

Given the formula: $\eta = \frac{1.96^2 \alpha^2}{E^2}$

$$E^2$$

$$\eta = \frac{1.96^2 \times 20^2}{4^2}$$

$$4^2$$

$$\eta = \frac{3.84 \times 400}{16}$$

$$16$$

$$\eta = 3.84 \times 25$$

$$\eta = 96$$

3.7.2 Sampling Techniques

Purposive sampling was performed to select the project managers in the various stakeholder respondents by virtue of their positions as project managers due special knowledge base they have acquired. However, simple random sampling used to perform the selection of stakeholder institutions (target respondents). Moreover, the heads or managers of the institutions were also identified and chosen for responses for this study due to their background knowledge in the construction industry, as well as project management. Additionally, the heads of some construction firms, as well as construction consultants were also chosen for the study through convenience or availability sampling. More also, some selected uncertified PMP project managers in the industry were also sampled through availability sampling. This is because they were readily available and willing to partake in the survey. The composition of the respondents was 48 Certified PMP project managers and 48 uncertified PMP project managers from the various stakeholders (i.e construction firms, building consultants, ministries and consultation associated bodies). The sum total of respondents was 96. Moreover, these target respondents were drawn based by virtue of their existence and also through convenience sampling by the researcher.

3.8 DATA ANALYSIS AND PRESENTATION

The Statistical Package for Social Scientists (SPSS) was used to analyze the questionnaire data; where descriptive statistics were drawn from some selected variables of the respondents depicting frequencies of selected variables for all respondents which were computed with percentages. This information was briefly summarized and coded for input into a statistical package. The results from the study were synthesized and analysis of variance was carried out using stepwise regression to identify relevant variables that predicts project managers' performance. Moreover, the results were presented in text format and charts (i.e. bar and pie charts) for visual representation.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter presents the analysis of research field data mainly in table format, and others in charts, being pie and bar graphs. The presentation first covers the demographic data of the survey respondents, and followed by the other analysis on the basis of the study objectives. This data were conducted in a Likert scale format, in which each category (objective) has its level of ranking (i.e. a scale of 1-5).

4.2 RESPONDENTS DEMOGRAPHIC DATA

The responses from the field survey as indicated in Table 4.1 illustrate that the male respondents (80%) superseded the females (20%). This infers that in terms of gender consideration in Ghana, males dominate in the construction industry. This fact confirms a statistic report by GSS (2016) that the male and female construction workers constituted 94% and 6% respectively. The education statuses revealed that all the respondents (100%) have attained “Tertiary” levels, with qualifications such as Higher National Diploma (HND), first degree (i.e. BSc, MA, etc), second or master’s degree (MSc, MPhil, MA, etc.), and doctoral degrees (Phd). This implies that they have acquired certain level of knowledge and understanding on the field of construction and that also makes them experts and professionals on the job. The study revealed that private construction workers (74%) dominate their public counterparts (26%). The data on labour force in Ghana compiled by GSS (2016) supports this fact that private and public firms employ 92.4% and 7.6% construction workers respectively in Ghana. The study revealed that there are evenly spread of project managers in Ghana (50%) are Certified PMP project managers whereas the uncertified PMP ones constituted (50%). This suggests that there are professional project managers in the construction industry in Ghana. This could be as result of the level of education, skills and experience that they

have acquired. Nonetheless, the uncertified PMP project managers have equally attained a high level of education, but according to them, they have not associated themselves with any professional project management certification body. The categories of construction organizations on the Ghanaian context were revealed that construction institutions/forms (61%) dominate followed by construction or project consultants (21%), and the least was the construction unions or associations. The dominance of construction firms could be as a result of their establishments or existence in the construction industry in Ghana. The rests composed the ministerial agencies (10%) and construction association bodies (7%). Employee project managers (51%) form the majority of workers in the construction industry in Ghana and their heads or managers constituted (28%). This fact is concrete since there are different job functions in an organization that require numerous employees to perform. This is in support of assertions that employees enable companies to achieve their goals, and also improves productivity (Harris 2007; Bakker 2010; Chen and Kao 2012). Supervisors (21%) also form part of the job designations of the respondents, however, their functions according to them are considered as second duties within the organization. The respondents according to Table 4.1 hugely undertake building projects (51%). The numerous building projects such as construction of houses, schools, hospitals, clinics, and market centers reflects this fact that the study revealed. Civil projects (29%) are also undertaken by respondents, and this consists of roads and engineering services. Those who undertake both building and civil projects constituted (15%). Other projects (5%) undertaken by respondents included project designs, mining related projects, and consultancy services. The work experience acquired by the respondents was revealed that 57% have worked for 6-10 years, followed those who have worked for +16 years (32%). This suggests that project managers in the construction industry in Ghana have gathered high level of experience on the job due to their technical backgrounds or knowledge.

Table 1: Respondents Demographic Data

Characteristics	Frequency	Percentage (%)
<i>Gender</i>		
Male	77	80
Female	19	20
<i>Education Status</i>		
Tertiary	96	100
<i>Occupation Type</i>		
Private	71	74
Public/Gov't	25	26
<i>Project Manager Type</i>		
Certified PMP	48	50
Uncertified PMP	48	50
<i>Organization Type</i>		
Ministries	10	10
Construction Institution/Firms	59	61
Construction Association/Union	7	7
Construction/Project Consultants	20	21
<i>Job Designation</i>		
Head/Manager/Owner	27	28
Employee	49	51
Supervisor	20	21
<i>Project Type</i>		
Building	49	51
Civil	28	29
Both	14	15
Others	5	5
<i>Work Experience</i>		
Less than 5 years	10	10
6-10 years	55	57
More than 16 years	31	32

Source: Field survey, 2018

4.3 IDENTIFICATION OF LEVEL OF AWARENESS OF PROJECT MANAGEMENT KNOWLEDGE AREAS

4.3.1 Project Management as an Effective Tool

The study sought to assess the effectiveness of project management practices in the life of project managers. The field data revealed that majority (89%) of the project managers fully agree that project management is an effective tool for managing projects, whilst 11% were uncertain. Project management is an effective management tool because the foundation of it according to the respondents is that, it helps project managers to effectively measure and utilize available project resources to achieve project success (Meredith and Mantel Jr, 2011; Burke 2013; Kerzner and Kerzner 2017)

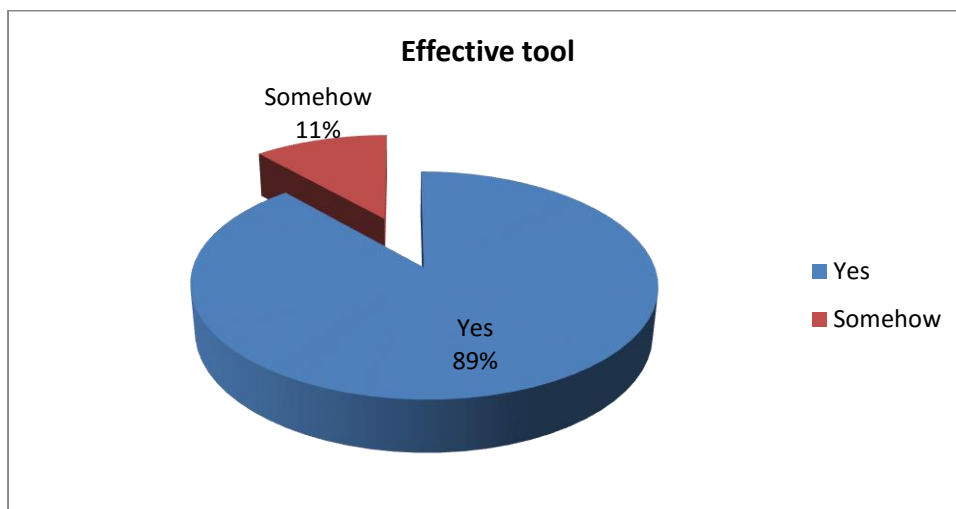


Figure 1: Effectiveness of Project Management Practices

Source: Field survey, 2018

4.3.2 Implementation of Project Management Concepts

The study further sought to determine whether project practitioners implement or apply the concept to their work. The study revealed that majority (80%) largely apply the concepts of project management in their course of work. This according to them (respondents) serves as guidelines or set of principles that enables to perform up-to-task and deliver quality works.

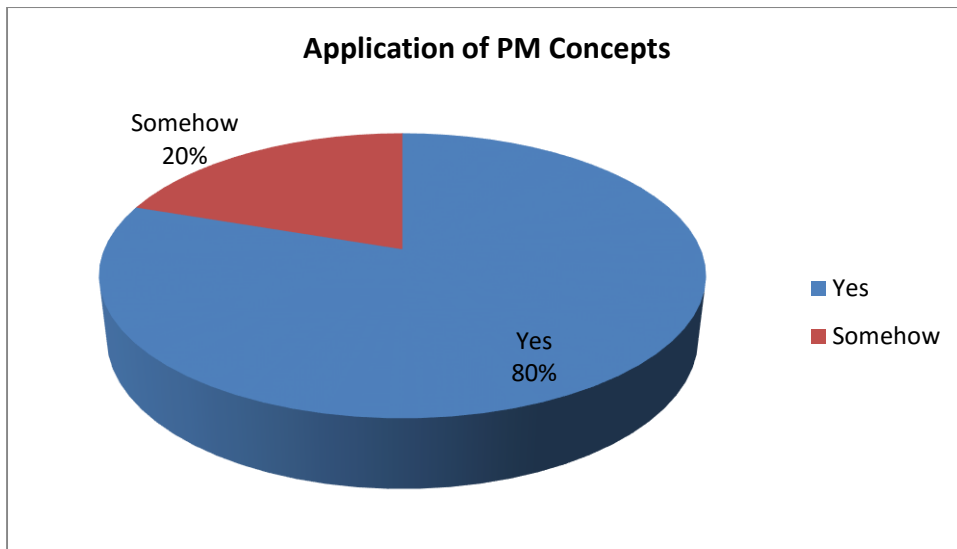


Figure 2: Implementation of Project Management Practices

Source: Field survey, 2018

4.3.3 Awareness of Project Management Knowledge Areas

The results ascertained from the responses to the question on awareness of project management knowledge areas as illustrated from Table 4.2 in a Likert scale format 1= not at all, 2= some time , 3=when necessary , 4= most of time , 5= all the time . Again, the responses were computed with their respective mean score index, standard deviation (SD), and relative importance index average score. The essence of the relative importance index is to enable the researcher to determine which of the PM knowledge areas best affect the project practitioners in the course of executing their functions.

Table 2a: Awareness of Project Management Knowledge Areas (Uncertified PMP)

KM Knowledge areas	Mean	RII	Ranking
Project Integration Management	32.0	0.1871	6 th
Project Scope Management	32.0	0.1871	7 th
Project Schedule Management	32.0	0.2121	5 th
Project Cost Management	32.0	0.2739	2 nd
Project Quality Management	32.0	0.1871	10 th
Project Resource Management	32.0	0.2121	4 th
Project Communication Management	32.0	0.2683	3 rd
Project Risk Management	32.0	0.1871	8 th
Project Procurement Management	32.0	0.2739	1 st
Project Stakeholder Management	32.0	0.1871	9 th

Source: Field survey, 2018

Table 4.2a shows that project procurement management, cost management, communication management, human resource management, and schedule management were ranked from as first (1st) to fifth (5th) respectively with RII values 0.2739, 0.2739, 0.2683, 0.2121, and 0.2121 in that order. On the other hand, (Table 2b) project integration management, and project schedule management with 0.2739 each were ranked 1st and 2nd respectively. Project risk management, scope management and stakeholder management were ranked from 3rd to 5th with 0.2683 and 0.2121 each respectively. The RII index is deemed that the higher the value, the most important the factor. This fact implies that these knowledge areas are well recognized or most concentrated elements among the knowledge areas as practitioners of project management. The other knowledge areas were equally important and were ranked in the following order of awareness: project integration management, scope management, risk management, stakeholder management, and quality management from sixth (6th) to tenth (10th) respectively also with RII indexes of 0.1871 accordingly for the uncertified PMP

project managers. Apparently, communication, human resources, quality, procurement and cost were ranked 6th – 10th.

Table 3b: Awareness of Project Management Knowledge Areas (Certified PMP)

KM Knowledge areas	Mean	RII	Ranking
Project Integration Management	32.0	0.2739	1 st
Project Scope Management	32.0	0.2121	4 th
Project Schedule Management	32.0	0.2739	2 nd
Project Cost Management	32.0	0.1871	10 th
Project Quality Management	32.0	0.1871	8 th
Project Resource Management	32.0	0.1871	7 th
Project Communication Management	32.0	0.1871	6 th
Project Risk Management	32.0	0.2683	3 rd
Project Procurement Management	32.0	0.1871	9 th
Project Stakeholder Management	32.0	0.2121	5 th

Source: Field survey, 2018

4.4 EFFECTS OF PROJECT MANAGERS ON PROJECTS

4.4.1 Job Functions Impacting Positively on Projects

The study sought to verify the effects of project practitioners on projects that they execute. Figures 4.4.1 revealed that majority (91%) of the job functions of project managers have positive effects on the projects that execute. This according to the project managers results from the outcome of the project such as project completion and delivery, which is the ultimate goal of every project manager. This further result into building a mutual trust amongst project clients or owners, enabling clients satisfaction, and promotes economic development (Hwang and Ng 2013; Larson and Gray 2015; Nicholas and Steyn 2017). Nonetheless, some project managers remained uncertain (9%) as to whether their functions positively affect the projects that they undertake with the reason being that; they have not really measured the outcomes of the projects that they undertake, but they could say that they have achieved some successes.

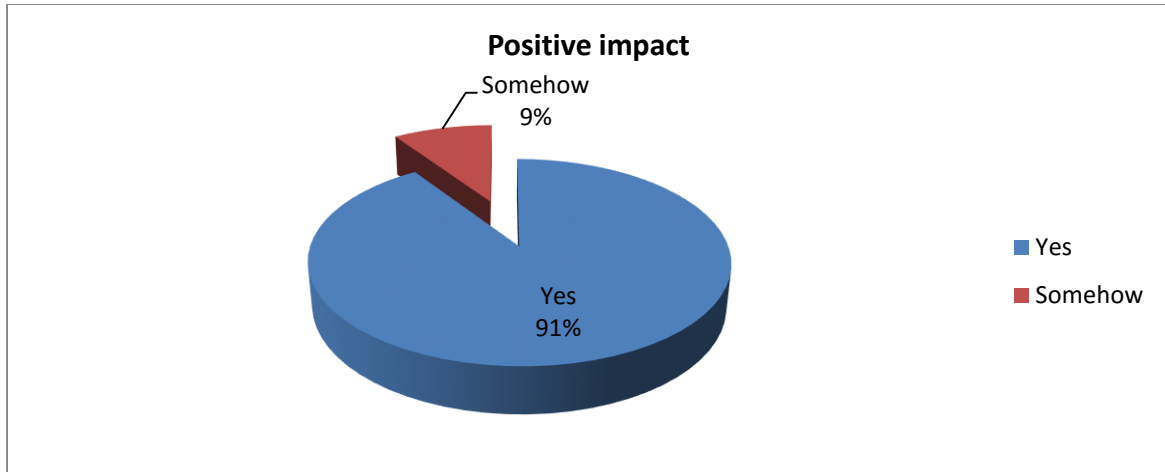


Figure 3: Positive Impact of Job Functions on Projects

Source: Field survey, 2018

4.4.2 Effects of Project Management Practices on Projects

The effects of project management practices on projects that project managers undertake were assessed by the study. Again a Likert scale format 1=least, 2= lower, 3= high, 4= higher, 5= highest were used to rank the responses. Again, the responses were computed with their respective mean score index, relative importance index average score, as well as Kendall's Coefficient of Concordance test. Kendall's coefficient of concordance (Kendall's W) according to Chan et al. (2009) determines the general or whole agreements during ranking of groups of agreements. Kendall's (W) values arrays between 0 to +1, denoting "no agreement" and "complete agreement" respectively, among the groups of factors that have been ranked. It is recommended that when there is more than 7 ($N > 7$) cases to be ranked, and a sample size more than 20 (20+), the observed significance of W is determined by the Chi-square distribution (X^2) and its degrees of freedom (df) denoting N-1 (Siegel and Castellan 1988).

Table 3b and 4b shows that chi square (X^2) for impacts = 51.153, df = 10 with probability of occurrence (Asymp. Sig.) less than $p < 0.001$. This indicates that a strong agreement exist among project managers regarding the impacts of their job on projects that they perform in

relation to the ranking of the factors that affect projects. Therefore, Table 3a illustrates the ranking of the effects of project management practices on project based on their respective range, mean and RII indexes. “Leadership style of the project manager” was ranked 1st with RII value of 0.245, “Project manager’s handling of Disputes/Claims” and “Project manager’s attitude towards Arbitration” were ranked 2nd and 3rd respectively with RII value of 0.235 each. “Leadership skills of the project manager” ranked 4th with RII 0.225, and “Project manager’s handling of External factors affecting the project”, and “Project manager building mutual trust” were ranked 5th and 6th respectively with RII value of 0.204. For the Certified PMP project managers, the 1st, 2nd, and 3rd ranked effects included “Project manager ensuring Client satisfaction”, “Project manager ensuring regular Stakeholders engagement”, and “Project manager’s handling of Scope, budget, schedule and quality issues” respectively. In addition, “Project manager’s handling of Risk and safety issues” is ranked 4th, “Project manager building mutual trust” is ranked 5th, and the 6th ranked effected was “Project manager’s handling of financial constraints” with RII score of 0.204. These factors are deemed to have significant effects on projects based on project management practices. The implications of these effects on projects are that the outcome of projects, that is project completion and delivery or project delay and failure are dependent on the applications of these effects.

Table 4a: Impacts of Project Management Practices on Projects (Uncertified PMP)

No.	Effects of Project Management Practices on Projects	Mean	RII	Ranking
1	Project manager ensuring Client satisfaction	19.2	0.192	10 th
2	Project manager building mutual trust	19.2	0.204	6 th
3	Project manager ensuring regular Stakeholders engagement	19.2	0.179	13 th
4	Project manager's handling of Risk and safety issues	19.2	0.192	12 th
5	Project manager's handling of Scope, budget, schedule and quality issues	19.2	0.204	9 th
6	Project manager adhering to Organizations business values	19.2	0.192	11 th
7	Project manager's handling of financial constraints	19.2	0.204	8 th
8	Project manager's handling of Changes in project design	19.2	0.179	14 th
9	Ineffective planning & scheduling by project manager	19.2	0.204	10 th
10	Ineffective decision-making by project manager	19.2	0.179	16 th
11	Project manager's handling of limited timeframe activities	19.2	0.118	18 th
12	Leadership skills of the project manager	19.2	0.225	4 th
13	Leadership style of the project manager	19.2	0.245	1 st
14	Personality of the project manager	19.2	0.179	15 th
15	Project manager's handling of litigation	19.2	0.204	7 th
16	Project manager's handling of Disputes/Claims	19.2	0.235	2 nd
17	Project manager's attitude towards Arbitration	19.2	0.235	3 rd
18	Project manager's handling of External factors affecting the project	19.2	0.204	5 th

Source: Field survey, 2018**Table 3b: Impacts of Project Management Practices on Projects**

N	48
Kendall's W ^b	0.463
Chi-Square	51.153
Df	10
Asymp. Sig.	0.000
a. Kendall's Coefficient of Concordance	

Source: Field survey, 2018

Table 4a: Impacts of Project Management Practices on Projects (Certified PMP)

No.	Effects of Project Management Practices on Projects	Mean	RII	Ranking
1	Project manager ensuring Client satisfaction	19.2	0.245	1 st
2	Project manager building mutual trust	19.2	0.204	5 th
3	Project manager ensuring regular Stakeholders engagement	19.2	0.235	2 nd
4	Project manager's handling of Risk and safety issues	19.2	0.225	4 th
5	Project manager's handling of Scope, budget, schedule and quality issues	19.2	0.235	3 rd
6	Project manager adhering to Organizations business values	19.2	0.118	17 th
7	Project manager's handling of financial constraints	19.2	0.204	6 th
8	Project manager's handling of Changes in project design	19.2	0.179	18 th
9	Ineffective planning & scheduling by project manager	19.2	0.179	15 th
10	Ineffective decision-making by project manager	19.2	0.179	14 th
11	Project manager's handling of limited timeframe activities	19.2	0.179	16 th
12	Leadership skills of the project manager	19.2	0.204	8 th
13	Leadership style of the project manager	19.2	0.192	11 th
14	Personality of the project manager	19.2	0.179	13 th
15	Project manager's handling of litigation	19.2	0.204	9 th
16	Project manager's handling of Disputes/Claims	19.2	0.192	12 th
17	Project manager's attitude towards Arbitration	19.2	0.204	10 th
18	Project manager's handling of External factors affecting the project	19.2	0.204	7 th

Source: Field survey, 2018

Table 5a: Impacts of Project Management Practices on Projects

N	48
Kendall's W ^b	0.463
Chi-Square	51.153
Df	10
Asymp. Sig.	0.000
a. Kendall's Coefficient of Concordance	

Source: Field survey, 2018

4.5 IDENTIFICATION OF PROJECT SUCCESS FACTORS

4.5.1 Successfully Managed Projects

The study sought to determine the capabilities of project managers in terms of managing projects successfully. The field data responses (Figure 4) revealed that large number (90%) of project managers has “Yes” successfully managed projects before, with few (10%) uncertain of the outcome of the projects that they have managed before. The study findings revealed that this category project managed mainly referred to the uncertified PMP project managers. This is because they claim that the project contracts are often terminated in the course of executing the project by their project clients. Successfully managing projects implies that the project goals were achieved, project completion and delivery was done on schedule, as well as ensuring clients satisfaction, which in effect results in mutual trust among project managers and clients (Burke 2013; Larson and Gray 2015; Nicholas and Steyn 2017)

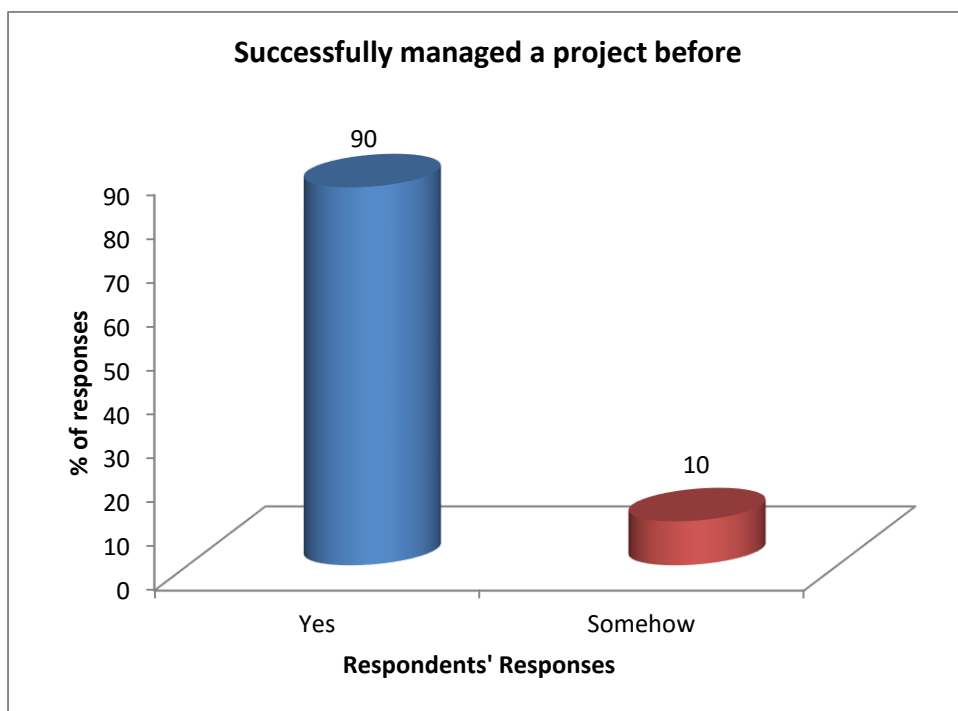


Figure 4: Successfully Managed Projects

Source: Field survey, 2018

4.5.2 Project Success Factors

The study sought to identify the factors that contribute to successful projects. The data responses were assessed in a Likert scale format 1= Poor, 2= Average , 3= Good, 4= Very good , 5= Excellent . Also, the responses were computed for their respective mean score index, mean of range, and relative importance index (RII). The assumption is that, any value greater than the average range (>26.4) and equals or greater than the average mean score (≥ 9.6) is considered as a success factor. Table 5b illustrates that “Adequate resource allocation” was ranked 1st with a mean score of 9.6 and RII value 0.296. This suggests that the success of a project hugely depends on the allocation of project resources. This is substantial since project resources embodies or encompasses the major foundation for the project execution. “Effective project team”, “Competent team”, “Adequate timeline”, and “Sufficient project fund” were also ranked from 2nd - 5th respectively with mean and RII values of 9.6 each, and 0.272 each. The other factors, in the order (i.e. 6th – 10th) “Sufficient project fund”, “Clearly set project goals”, “Elaborate WBS”, “Project closing” and “Project scope poorly defined” with range values 24 each for 6th – 8th, and 19.2 each for 9th and 10th and mean values 9.6 each respectively and their respective RII values 0.263, 0.204, 0.263, 0.179 and 0.152 all fell below the expected average mean and range values. This does not imply that they are of less importance, but they are of equal importance. Comparatively, the uncertified PMP project managers recorded “Clearly set project goals” as their 1st ranked with RII value of 0.296. The 2nd – 5th ranked effects comprised “Project scope properly defined”, “Elaborate WBS”, “Project closing”, and “Sufficient project fund” respectively. Additionally, “Adequate timeline”, “Effective project team”, “Competent team”, “Proper monitoring & Controlling”, and “Adequate resource allocation” corresponding to the 6th – 10th ranked effects.

Table 6a: Project Success Factors (Uncertified PMP)

Project Success factors	Mean	RII	Rank
Adequate resource allocation	9.6	0.204	10th
Sufficient project fund	9.6	0.272	5th
Effective project team	9.6	0.272	7th
Clearly set project goals	9.6	0.296	1st
Competent team	9.6	0.263	8th
Adequate timeline	9.6	0.272	6th
Project scope properly defined	9.6	0.272	2nd
Elaborate WBS	9.6	0.272	3rd
Proper monitoring & Controlling	9.6	0.263	9th
Project closing	9.6	0.204	4th

Source: Field survey, 2018**Table 7b: Project Success Factors (Certified PMP)**

Project Success factors	Mean	RII	Rank
Adequate resource allocation	9.6	0.296	1 st
Sufficient project fund	9.6	0.263	6 th
Effective project team	9.6	0.272	2 nd
Clearly set project goals	9.6	0.204	7 th
Competent team	9.6	0.272	3 rd
Adequate timeline	9.6	0.272	4th
Project scope properly defined	9.6	0.152	10th
Elaborate WBS	9.6	0.263	8 th
Proper monitoring & Controlling	9.6	0.272	5 th
Project closing	9.6	0.179	9 th

Source: Field survey, 2018

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter draws conclusion on the study findings and possibly makes recommendations based on the summaries of the study findings.

5.2 KEY FINDINGS

This section outlines key findings made by this study, the section is organised under the objectives of the study, which is identifying the level of awareness of the project management knowledge areas among project managers, identifying the effect of Certified PMP and uncertified PMP project managers on project success and identifying factors that account for project success.

5.2.1 Identifying the level of awareness of the project management knowledge areas among project managers

1. The field data revealed that majority (89%) of the project managers fully agree that project management is an effective tool for managing projects.
2. The study revealed that majority (80%) largely apply the concepts of project management in their course of work. This according to them (respondents) serves as guidelines or set of principles that enables to perform up-to-task and deliver quality works.
3. The study again revealed that for Certified PMP project managers, project integration management, project schedule management, Project risk management, scope management and stakeholder management were ranked from 1st to 5th while for uncertified PMP project managers project procurement management, cost management, communication management, human resource management, and schedule management were ranked from 1st to 5th.

5.2.2 Identifying the effect of Certified PMP and uncertified PMP project managers on project success

1. The study revealed that a strong agreement exist among project managers both Certified PMP and uncertified PMP that their roles as project managers positively impact their projects.
2. The study revealed that for uncertified PMP project managers “Leadership style of the project manager”, “Project manager’s handling of Disputes/Claims”, “Project manager’s attitude towards Arbitration” , “Leadership skills of the project manager” and “Project manager’s handling of External factors affecting the project” were ranked from 1st to 5th whiles for Certified PMP project managers project “Project manager ensuring Client satisfaction”, “Project manager ensuring regular Stakeholders engagement”, “Project manager’s handling of Scope, budget, schedule and quality issues” “Project manager’s handling of Risk and safety issues” and “Project manager building mutual trust” were also ranked from 1st to 5th

5.2.3 Identifying factors that account for project success

1. The study revealed that most project managers have successfully managed projects before, with 10% of project managers not certain of the outcome of their projects because they claim that the contracts for the projects are often terminated in the course of executing the project by their clients.
2. The study revealed that Certified PMP project managers consider “Adequate resource allocation” “Effective project team”, “Competent team”, “Adequate timeline”, and “Sufficient project fund” as the five topmost factors that contribute to project success.
3. The study revealed that uncertified PMP project managers considers “Clearly set project goals”, “Project scope poorly defined”, “Elaborate WBS”, “Project closing”, and “Sufficient project fund” as the five topmost success factors that contribute to

success.

5.3 CONCLUSION

The study revealed that terms of gender consideration in Ghana, males dominate in the construction industry. This fact confirms a statistic report by GSS (2016) that the male and female construction workers constituted 94% and 6% respectively. Most project managers have attained higher level of education and that implies that they have acquired certain level of knowledge and understanding on the field of construction and that also makes them experts and professionals on the job. Project managers perceived that project management is an effective tool for managing projects, yet its implementation is hugely practiced by the project managers. Moreover, the level of awareness of the project knowledge areas in the order of importance between the Certified PMP and uncertified PMP project managers varies.

The study further revealed that the work functions of project managers positively affect or influence projects that they execute. And that a huge number of project managers have successfully managed previous projects. However the ranking of the success factors between Certified PMP and uncertified PMP project managers here again varies.

Finally from the rankings by the certified and uncertified PMP project managers, the study revealed that the firms in which the project managers worked influenced their rankings of the knowledge areas, success factors and project management practices. Those who worked with construction companies ranked areas that relate to construction high while those who worked with project management firms or consultancy firms ranked project centered areas high. For example, on project management knowledge areas those working with construction firms who were mostly uncertified PMP project managers ranked procurement management, cost management and communication management as their 3 topmost knowledge areas they apply, project integration management, schedule management and risk management were the

3 topmost knowledge areas mostly applied by certified PMP project managers, who were mostly found in the consultancy firms and ministries.

5.4 RECOMMENDATIONS

The study recommends that

- i.** Project managers should exhibit the habits of practicing other project knowledge areas in order to fully be aware of their implementations
- ii.** Project managers should as much as possible consider measures that could enable them minimize or curb the enormous effects that impacts their projects
- iii.** Project managers should intensify their project management practices in order to advance in project success factors and explore additional ones.
- iv.** Uncertified PMP project managers should take the initiative to join the professional body to become Certified PMP since they are already aware of project management knowledge areas in order to gain recognition.

5.6 LIMITATION OF THE STUDY

The use of a quantitative approach in the study may have limited the ability of this study when attempting to obtain an in-depth view of the effects of certified PMP and uncertified PMP project managers in the construction industry.

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QUESTIONNAIRE

QUESTIONNAIRES FOR PROJECT MANAGERS

NB:

Please select the relevant answer(s) where applicable.

1. Sex a. Male [] b. Female []

2. Level of education a. Basic [] b. Secondary [] c. Tertiary []

d. Others [], specify.....

3. Status of Occupation a. Private [] b. Public/Gov't [] c. Others
[].....

4. Type of Project Manager a. Certified PMP [] b. Uncertified PMP []

5. Organization type

a. Ministries [] b. Construction Institutions [] c. Construction Association Body []

d. Construction Consultant [] d. Others [], specify

6. Level at your current organization/Job Designation

a. Head/Manager/Owner [] b. Employee Project Manager [] c. Supervisor []

d. Others [], specify

7. What type of project(s) do you undertake/perform?

a. Building [] b. Civil [] c. Both [] d. Others [], specify
.....

8. What is the size of your company?

a. Micro (<10 employees) [] b. Small (10-50 employees) [] c. Medium (50-250 employees) []

d. Large (250+ employees) []

9. Years of work experience in project management?

a. Less than 5 years [] b. 6-10 years [] c. 11-15 years [] d. More than 16 years []

SECTION B-IDENTIFICATION OF LEVEL OF AWARENESS OF PROJECT MANAGEMENT KNOWLEDGE AREAS

1. Is project management an effective tool for managing projects?

a. Yes [] b. No [] c. Somehow []

2. Do you always apply the PM concepts in managing projects?

a. Yes [] b. No [] c. Somehow []

4. How often do you apply the project management knowledge areas on project? Please

indicate how often you apply these knowledge areas on project.

1= not at all, 2= some times, 3= when necessary, 4= Most of the time, 5= all the time

No.	KNOWLEDGE AREAS	RANKING				
		1	2	3	4	5
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					
10	Project Stakeholder Management					
	Others Please Specify					
11						
12						

SECTION C- EFFECTS OF PROJECT MANAGERS ON PROJECTS

1. Do your functions have positive impacts on projects?

a. Yes [] b. No [] c. Uncertain []

2. In your experience how crucial are the following attributes and roles played by the project manager regarding project success and delivery? Indicate the level of severity of each role on project success and delivery.

Tick the appropriate box, 1= Least, 2= Lower, 3= High, 4= Higher, 5= Highest

No.	ATTRIBUTES AND ROLES	RANKING				
		1	2	3	4	5
1	Project manager ensuring Client satisfaction					
2	Project manager building mutual trust					
3	Project manager ensuring regular Stakeholders engagement					
4	Project manager's handling of Risk and safety issues					
5	Project manager's handling of Scope, budget, schedule and quality issues					
6	Project manager adhering to Organizations business values					
7	Project manager's handling of financial constraints					
8	Project manager's handling of Changes in project design					
9	Ineffective planning & scheduling by project manager					
10	Ineffective decision-making by project manager					
11	Project manager's handling of limited timeframe activities					
12	Leadership skills of the project manager					
13	Leadership style of the project manager					

14	Personality of the project manager					
15	Project manager's handling of litigation					
16	Project manager's handling of Disputes/Claims					
17	Project manager's attitude towards Arbitration					
18	Project manager's handling of External factors affecting the project					
	Others Please Specify					
19						
20						

SECTION D- IDENTIFICATION OF FACTORS THAT ACCOUNT FOR PROJECT SUCCESS

1. Have you successfully managed a project before?

a. Yes [] b. No [] c. Uncertain []

2. If Yes, how will you rank these success factors according to your level of awareness.

From 1-poor, 2-Average, 3.Good, 4-Very good and 5-Exellent.

No.	PROJECT SUCCESS FACTORS	RANKING				
		1	2	3	4	5
1	Adequate allocation of resources					
2	Sufficient project fund					
3	Effective team work					
4	Clearly set project goals					
5	Competent team					
6	Adequate timeline					
7	Properly defined project scope					
8	Elaborate WBS					
9	Proper monitoring and controlling					
10	Project closing					
	Others Please Specify					
11						
12						

3. How do these factors affect project success and delivery?

.....
