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The competences required by project managers for project success

By

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DECLARATION

I hereby declare that this submission is my own work towards the MSc. in 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 except where due acknowledgement has been made in the text.

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ABSTRACT

Managing construction project involves the understanding of the critical success factors (CSFs) which collectively defines a set of best practices to attain project success. Construction projects like any other investments needs adequate funding. Clients and stakeholders invest huge sums of money; hence at the end, the project must be to their satisfaction with regards to quality and aesthetics. The aim of this research was to identify the critical success factors to consider in choosing an effective project manager on a construction project. To identify the critical success factors in construction project delivery and to identify the significant competencies of a project manager that contributes to the project success, were objectives considered. This study employs quantitative research approach. An extensive literature review on the subject matter and a survey using structured questionnaire through the purposive sampling approach was adopted. The data gathered was analyzed using descriptive statistics such as frequency and mean score. Fifty respondents were later asked to scale the factors discovered from the existing literature. The first five critical success factors discovered in order of ranking were; Effective quality assurance culture, adequate communication among all project participants, availability of resources as planned throughout the project, adequate funding and detailed project planning. The study again discovered some competencies of a project manager. The competencies were further put into groups of four namely; Administrative experience, human relation skills, leadership skills and finally technical skills.

It is believed that the finding from this study will influence the selection of an effective project manager which will enable the project manager play his or her roles efficiently on any construction project.

Keywords: Competencies, Project Manager, Critical factors, Successful Project, Project Management, Construction Projects, Quality and Project Satisfaction.

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DEDICATION

To God Almighty and my lovely wife, Mrs Rita Bruce Amemakalor.

CHAPTER ONE

GENERAL INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The role of Project managers is becoming significant in our industries and many companies seek graduates trained in such profession. Project managers are continuously challenged to manage with different kinds of problems in the accomplishment of unique outcomes expected to result from limited resources and within critical time constraints (El-Sabaa, 2001).

Hence, the recognition and concept of project management methodologies that inspires competitive advantage has been a pressing issue amongst organizations which desire to engage the services of a project manager (Yang et al., 2011). This issue has triggered a change from the traditional way of doing business and management to the project-oriented approach. Establishments are progressively relying on projects to carry out work to gain competitive advantage (Medina and Medina, 2014 and Anantatmula, 2010).

(Angela and Clarke, 1998) submitted various methods and approaches which organizations might apply to improve the project management processes. The recommendations stated here seeks to identify the critical success factors that initiate the project management process, like having a clear objective, having a project mission, having a detailed plan, proper communications with personnel, project management techniques and standardization. Focusing on these few key, critical success factors could deliver greater benefits.

(Cleland and Ireland, 2006) made remarks concerning the project management practices, which are still obsolete and described as imperfect are still being used. However, efforts have been made to improve the project management theories to mitigate risk and prepare for uncertainty.

Furthermore, (Cleland and Ireland, 2006) commended the impact on technology to project management. In their submission, they advocated how beneficiary project management software has aided the industry. This has delivered better outcomes to the project. To attain the level of project success and deliver excellent construction project, Tan (2004), states that, a concerted effort should come from the entire project team from many disciplines with appropriate project management processes. He further proposed that the strength of project managers is leadership skills and the ability to manage the people skills handling all sections of the personnel. People skills in one of the most important skills required in project management to attain project success.

In the course of attaining project success, there is a demand to inspire many parties for the involvement. However, the connection between contractors, clients and consultants is important, (Tan, 2004) said, most studies settle that project failure is basically caused by the inadequate funding or poor financial management. Also, the minor causes can be attributed to leadership, teamwork problems and communication management. Project successes were attributed to team work. This requires encouragement and training to all Project team members.

Resolving team disputes and promoting team work are very important factors. The organizations finance manager and the project technical manager was agued by (Tan, 2004) as the most likely personnel responsible for project success or failure).

Many successful project deliver are mostly valued by investors and other stakeholders due to the awareness of returns on investment which becomes profitable. Few projects yield greater returns in financial gains per year, whiles others are only profitable for a shorter period. However, the project is considered as failure if it is not executed within the schedule, within cost and to the required quality (the iron triangle).

1.2 PROBLEM STATEMENT

Numerous projects everywhere in the world keep failing, causing massive loss of money to the companies. Ideally, a project manager is engaged on a project to ensure project success. However, it's been statistically proven all around the world concerning projects that are challenged due to lateness in schedule, over budgeting, cancelled, failed completely, unsatisfied functions and requirements and others completed but never been used. Traditionally, a construction project success is measured against its original scope, financial plan, time of delivery, and the quality or performance of deliverables. According to the Standish Group (2015) Chaos report, 52% of projects were challenged due to lateness in schedule, over budgeted, with unsatisfactory features and requirements. 19% failed completely, cancelled and never used and 29% were successful. Track result from KPMG international on project management survey 2017 states that, 61% of organizations feel that project success rate has improved over the last two years, despite the consistent project failure rate. 33% are likely to meet original goals and 34% are likely to achieve

stakeholder's satisfaction. This situation has instigated many project management professionals to discover the critical factors that lead to establish a successful project management outcome.

Critical Success factors can be described as the specific conditions, proceedings, and situations that contribute to project results (Ika, 2009). The construction industry is one of the largest and indispensable jobs creating industry in developing countries like Ghana. (Ahadzie, 2009) acknowledged that, construction helps to contributes to the national socioeconomic development by ensuring a wide occupation prospects for both skilled and non-skilled workers. Also, it provides infrastructure and services required for other sectors of the economy; such sectors include institutions of learning and training centers, industrial unit and factories etc. According to (Ofori-Kuragu et al., 2016) the construction industry in Ghana is a pillar of the economy contributing about 8.5% to the overall Gross Domestic Product (GDP) and employing 2.3% of the active population.

Numerous stakeholders are involved in providing construction services and delivery. All stakeholder have their responsibility, requirement and objectives to perform, this introduces a level of complexity to the concept of stakeholder's involvement (SI) within the construction industry (Bal et al., 2013).

This research considers the opinions of project managers and contractors on the critical success factors (CSFs) that leads to project success in the construction industry in Ghana. To meet the divergent demands of different stakeholder groups, and in order to raise the efficiency and output of the decisions that are made during the construction project life

cycle, project managers must develop comprehensive stakeholder involvement plans (Saghatforoush et al., 2010).

Preceding research studies in the construction industry (Bal et al., 2013; Bosher et al., 2007; Olander and Landin, 2005a) point out that stakeholder involvement is vital in humanizing the efficiency of project results (Yang, 2010). The quality of a construction project is also mostly dependent on the right performance management of different stakeholders, particularly contractor and consultants (Sui and Ke-Wei, 1996). This means that, if major parties of a construct are not committed to properly carrying out their duties, it is likely to badly affect the final project quality level. In Ghana, there are no known accurate studies on the causes of failure and success of project in Ghana (Ayee, 2000), at least before 2000 and a further search of the literature suggests that there have been none since that time.

The Potential problems associated with a construction projects success is greatly reduced if stakeholders are unproductively manage. These include inadequate and unsatisfactory engagement of stakeholders, project managers having unclear objectives of stakeholder management, difficulty to identify the invisible stakeholder, and poor communication with stakeholders (Pouloudi and Whitley, 1997; Loosemore, 2006; Bourne and walker, 2006; Rowlinson and Cheug, 2008). The problems associated with an ineffective management are regulatory changes that affect the project or a negative reaction from the community against the project. These challenges affect the financial plan schedules. Therefore, in identifying the fundamentals of project management efficiency, Critical Success Factors (CSFs) approach was used for the study.

1.3 RESEARCH QUESTIONS

The purpose of this study is to improve the understanding of why projects succeed by looking to the project manager's contribution. This research is to identify the critical success factors on projects and the requirement of a project manager and its impact to project success by assenting the following:

1. What are the important competencies required of a project manager?
2. What are the critical success factors that influence project success?

1.4 AIM OF THE STUDY

The aim of the study is to identify the critical success factors to consider in choosing an effective project manager on a construction project.

1.5 OBJECTIVES OF THE STUDY

To achieve the aim, the following objectives were considered in arriving at a logical conclusion. The objectives are:

1. To identify the critical success factors in construction project delivery,
2. To identify the significant competencies of a project manager that contributes to the project success.

1.6 SIGNIFICANCE OF THE STUDY

Similar studies have been conducted within Accra and Kumasi, neglecting Ho. This is the first time a study of this kind is conducted in the Volta Region.

Result from the study will be added to the general literature outlining the critical success factors of construction project in Ho in the Volta region of Ghana and also to identify which

skills should be highly recommended in project management by understanding the significant competencies that according to the professional institutions must be possessed by project managers for project success.

Furthermore, the results of the research will contribute to the solution in identifying and the accomplishment of unique outcomes expected from project managers.

Lastly, most D1K1 Contractor groups undertaking World Bank projects especially in the Volta region which require project managers will find my research very useful in executing successful projects. Hence this research has the capacity of playing several roles in organizations with project management base concept and construction industries throughout the world and for that matter Ghana. Therefore, there is enough justification for engaging in a research of this nature

1.7 RESEARCH METHODOLOGY

The purposive sampling approach was adopted for this research work. This is because the approach was based on known and selective Project managers in the Volta region of Ghana. The approach enhanced the study by identifying the critical success factors of a project and choosing an effective project manager to the project.

1.8 STRUCTURE OF THE STUDY

The study will be organized into five (5) chapters. Chapter one (1), which was the introductory chapter covers the background of the study, problem statement, aim of the study, research objectives, brief details of the method, Chapter two (2) was focused on the literature review of the project title. Chapter three (3) includes the research design and method of the study. Chapter (4) indicates the result of the research work, and finally chapter five (5) consists of the discussions of the major findings, conclusion and recommendation.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter two presents a review of the previous knowledge to the research area. Though the research was focus on the critical success factors (CSFs) and competencies of a project manage, it would be important to define and discuss some relevant concepts for the purpose of clarity.

According to (Gareis, 1991) complex challenges are handled by organizations through the managerial strategies from project management. The organization identified as a project oriented organization perfumes its daily activities by the management of the project support system.

This chapter exhibits a review to the literature on the previous study of CSFs and project managers. The main concepts discussed here are, project, project management, project oriented organizations, project manager, and effective project manager.

2.2 PROJECT

Pinto and Slevin (1988) defined a project as possessing the characteristics of having a defined beginning and an end, it being specific, with set of goals and series of complex or interrelated activities and a limited budget. Also, project can simply be defined as temporary endeavors embark on as a service or to create a distinct product to attain an anticipated result (Schwalbe, 2006). (Drucker, 1988; DeFillippi and Arthur, 1998; Whitley, 2006; Muzio et al., 2011) mentions its functions as the means of providing new products or services

Organizations find it beneficial by investing more of its resources into projects which promises innovation and growth, service establishment (Sauser and Eigbe, 2009). Find the new perception of a project and its context. See Table 2.1.

Table 2.1: Perception and context of a project

No	PERCEPTION OF A PROJECT AND ITS CONTEXT
1	A project is not only defined as a unique, complex task, or a specific organization form, but is also perceived as a social system with dynamic boundaries and having the ability to learn and to self-organize.
2	It as a system that can be clearly differentiated from other systems by its specific culture which can be developed through learning and communication. The shared project team set of values, beliefs, and behaviors are considered as a vital project management tool.
3	Project environments are relevant in the supply and demand markets of the project which should be keenly managed.
4	Within a dynamic project environment, a rationale project understanding and accurate recognition of project circumstances is the key to successfully dealing with changes.
5	Projects are defined by the relationships with its environment, the relevant decisions and actions before its commencement, and the relevant consequences after its completion. The mission and strategy of a project can be determined by its context.

Source: (Gareis, 1991)

2.3 PROJECT MANAGEMENT

Project Management (PM) is defined by the project management institute as the application of knowledge, skills, tools, and techniques to project activities in other to meet the project requirements (Project management institute, 2008).

The U.S Federal Government has supported the concept of project management in developing several unique and temporal systems to achieve national goals (Bowenkamp and

Kleiner, 1987). Certainly, the concepts of project management, its techniques and procedures have developed to close the gaps between operations that keeps running and that of the stipulated duration characteristic of a projects. By (Bowenkamp and Kleiner, 1987).

In 2008, the project management Institute (PMI) developed the frame, called the Project Management Body of Knowledge (PMBOK), this body regulates and introduced the 8 primary management knowledge. Further improvement on the (PMBOK6) determines 10 core knowledge areas namely; project integration management, project scope management, project cost management, project schedule management, project quality management, project resource management, project risk management, project procurement management and finally project stakeholders management.

Tinnirello (2000) explains project management as the ability to apply knowledge, tools, and techniques to accomplish specific assignment, sate measurable scope, develop accurate schedules, and define clear duties. Therefore, all project management approach aiming to be successful must execute the project on schedule (time), within budget, within an acceptable level of quality and meet client or customer requirement. Kerzner (2009)

2.3.1 Project management and project success

Project management success is the term used to describe a project with many characteristics such as, technical competency, organizational structure, leadership ability, complementing a project manager assigned to the execution of a project. (George, 2003; Hyväri, 2006).

Morris (1994) argued aggressively that higher levels of performance and project success can be attained though the management of projects. Also, the connection between project

management approach and project managers has been established by Thamhain (2004). Likewise the contribution from (Papke-Shields et al. 2010). They strongly believe in the connection between project management and project success. This was supported by the empirical facts on performance on project which are based on project management practices.

2.3.2 Project management practices

There are several best practices of good project management to help attain project success. Scope definition, creating a risk response team, defining the deliverables, communication with stakeholders, to mention but a few.

Each project is unique, and the general practices are the ability to coordinate resources especially the manpower resources. Conflicts are inevitable in working with people. (Hyväri, 2006a). These conflicts as the tendency to create eight major project management problems, which are, inadequate resources, insufficient planning, meeting unrealistic deadlines, unclear goals, changes in goals and resources, uncommitted team members, breakdowns in communications between functions and departments (Posner, 1987; Pinto, 2007).

Nevertheless, some project management practices like, consistent feedbacks from clients, sponsors, customers, team members etc, precise use of project management software, adequate mentorship for handling changes, budget, risk mitigation strategies, preferred organizational structure for effective management and control, stakeholders involvement in project design, team members participation and the project managers directives are mandatory (Bowenkamp and Kleiner, 1987).

However, quite a few studies have attempted to improve the challenges on project management practices. (Norrie and Walker, 2004) introduces a strategy called the quad constrained to add a dimension to the traditional triple dimension. The model is used to measure whether a project is functioning on strategy which affect project outcome. See Figure 2.1.
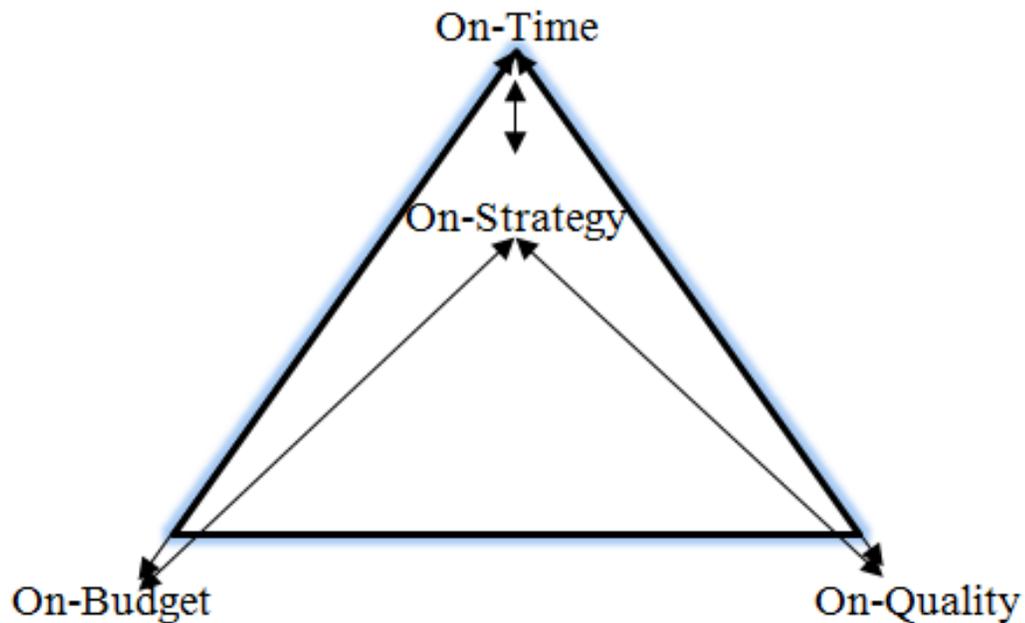
Source:(Norrie and Walker, 2004)

Figure 2.1: The quad constrained project management model

2.3.3 Project-oriented organizations

Project oriented organization is a model of an organization by its values, structures and systems in the form of management based on projects. The International Project Management Association (IPMA) conference started the study into project oriented organizations in the 1990s.

The merit that accompanies a project oriented organizations, the flat and flexibility of the organizational structure, high resource are involved and easily available to the project, high level of authority to project manager, the collocation of project team members, mention but few (Zhao, 2010). Refer to Table 2.2 to identify the specific values of project-oriented business organizations by Gareis (1991).

Table 2.2 The specific values of project-oriented business organizations

N	The Specific Values Of Project-Oriented Business Organizations
1	Projects are considered to be strategically significant. They allow business strategies to be implemented and influence them.
2	The autonomy and self organization of projects is promoted by top management to support the performing projects.
3	Leadership is understood among other issues as the ability to create visions, missions, and strategies, and to communicate them to the projects.
4	Continuous organizational development will ensure the survival of the company in the competitive business world. Projects play important roles in this development, as they provide organizational learning based on fresh experiences obtained from interactions with different environments.
5	Project management is considered as a general management qualification rather than a specialist one.

Source: (Gareis, 1991)

2.4. PROJECT SUCCESS

Project success is a concept that is widely discussed by many researchers in diverse ways. Pinto and Slevin, 1988a stated that every project is unique and for that matter no definite project success criteria should be used to measure all projects in an organization.

The evaluation of time, cost and process was established in the 1970s to improve implementation for project success. Furthermore, the terms of quality implementation and stakeholder's engagement became recognized, (Turner and Müller, 2005). Then there was a demand to concentrate on the use of correct tools and techniques by (Pinto and Slevin, 1988b). Refer to Table 2.3.

Table 2.3 Project success factors

SUCCESS FACTORS	DESCRIPTION
1. Project Mission	Clearly defined goals and direction
2. Top Management Support	Resources, authority and power for implementation
3. Schedule and Plans	Detailed specification of implementation
4. Client Consultation	Communication with and consultation of all stakeholders
5. Personnel	Recruitment, selection and training of competent personnel
6. Technical Tasks	Ability of the required technology and expertise
7. Client Acceptance	Selling of the final product to the end users
8. Monitoring and Feedback	Timely and comprehensive control
9. Communication	Provision of timely data to key players
10. Troubleshooting	Ability to handle unexpected problems

Source:(Pinto and Slevin, 1988a)

The 4 main factors for measuring project success Jugdev (2005):

(1) A great desire to carry out a project by the project donor.

(2) Healthy relationship among project team.

(3) Project managers' willingness to address and resolve issues.

(4) Stakeholders' engagement at every phase of the project.

Refer to Table 2.4 to identify 10 success factors by (Müller and Turner 2007).

Table 2.4 Project success criteria

SUCCESS CRITERIA
Meeting project's overall performance (functionality, budget, and timing)
End-user satisfaction with the project's product or service
Suppliers' satisfaction
Project team's satisfaction
Meeting user requirements
Meeting the project's purpose
Client satisfaction with the project results
Reoccurring business with the client
Other stakeholders' satisfaction
Meeting the respondent's self-defined success factor

Source: (Müller and Turner, 2007)

Chan et al. (2004) researched on the critical success factors (CSFs) in 7 major journals and identified 44 SFs. CSF such as effective project risk management system and process, effective project team formation, etc.

Kazaz et al. (2012) released the 10 most leading CFSs in construction projects in Turkey and grouped them under 7 key factors. Further, they emphasize that adequate funding, establishing an effective document control system, effective allocation and control of workforce, Conducive work culture and environment, adequate technological knowledge and transfer, effective management of project meetings under the financial factor, labour based factor, managerial factors and project based factors.

Yong and Musttaffa (2012) discovered in Malaysia 15 CFSs to construction project and grouped them under seven key headings. They identified managing and control of subcontractors' work, adequacy of design details and specifications, top management

support and commitment to the project, frequent project monitoring/progress meetings, Strategic and detailed procurement process, effective allocation and control of workforce.

(Alias et al., 2014) approved 5 variables of project performance through a literature review and it has specifically focused on communication among all project participants, quality assurance culture, Implementing an effective health and safety programme, managing and control of subcontractors' work, Strategies and detailed procurement process, developing an appropriate organizational structure and design, and project execution phases.

(Baiden et al., 2016) identified 8 major CSFs for Ghanaian contractors. The results obviously proves that quality and zero defect culture, organizational design, work culture and environment, client satisfaction, strategy, leadership, measurement and knowledge management and lastly implementation of lean principles are relevant factors.

Forty- six factors were identify by De Silva, Rajakaruna and Bandara(2008) in the construction industry of Sri Lanka and grouped. Adequate trainings and skill development programs, adequate technological knowledge and transfer, adequate career development programs, establishing an effective document control system, Staff motivation and satisfaction, Availability of experience, professionals and skilful team, administration and leadership, Implementing an effective health and safety programme, frequent project monitoring and progress meetings, detailed project planning, estimations and scheduling, availability of advanced technology and construction equipment. Among these factors, some were more important than others.

Table 2.5 Summary of success factors

No.	FACTORS	SOURCE
1	Adequate communication among all project participants	(Zidanea et al., 2013) / (Alisa et al., 2014) / (Desilva et al., 2008)
2	Effective quality assurance culture	(Zidanea et al., 2013) / (Alisa et al., 2014) / (Gudienea et al.,)
3	Top management support and commitment to the project	Zidanea et al., (2013) / Ngugen and Chileshe (2013) / Gunathilaka et al., (2013)
4	Availability of advanced technology/construction equipment	Zidanea et al., (2013) / Gudienea et al., (2013) / Gunathilaka et al., (2013)
5	Detailed project planning, estimations and scheduling	Ngugen and Chileshe (2013) / Gunathilaka et al., (2013) / Garbhrran et al., (2012)
6	Frequent project monitoring/progress meetings	Gunathilaka et al., (2013) / Garbhrran et al., (2012) / Desilva et al., (2008)
7	Implementing an effective health and safety programme	Zidanea et al., (2013) / Alisa et al., (2014) / Desilva et al., (2008)
8	Managing and control of subcontractors' work	Ngugen and Chileshe (2013) / Gudienea et al., (2013) / Yong and Musttaffia (2012)
9	Adequate funding	Gudienea et al., (2013) / Gunathilaka et al., (2013) / Kazaz et al., (2012)
10	Administration and leadership	Ngugen and Chileshe (2013) / Tabish and Jha (2011) /
11	Availability of resources as planned throughout the project	Ngugen and Chileshe (2013) / Gunathilaka et al., (2013) / Mitra and Tan (2012)
12	Strategic and detailed procurement process	Alisa et al., (2014) / Ngugen and Chileshe (2013) / Gunathilaka et al., (2013)
13	Clearly defined goals/objectives and scope	Gudienea et al., (2013) / Gunathilaka et al., (2013) / Tabish and Jha (2011)
14	Effective project risk management system and process	Gudienea et al., (2013) / Chen (2012) / Tabish and Jha (2011) / Desilva et al., (2008)
15	Availability of experience, professionals and skillful team	Gudienea et al., (2013) / Mitra and Tan (2012) / Tabish and Jha (2011)
16	Effective allocation and control of workforce	Mitra and Tan (2012) / Yong and Musttaffia (2012) / Kazaz et al., (2012)
17	Effective project team formation	Gunathilaka et al., (2013) / Chen (2012) / Gunasekera (2009)
18	Effective site management,	Zidanea et al., (2013) / Tabish and Jha (2011) /

	control and coordination	Gunasekera (2009)
19	Team leader/PM Knowledge/experience and skills	Ngugen and Chileshe (2013) / Gudienea et al., (2013) / Gunasekera (2009)
20	Adequacy of design details and specifications	Ngugen and Chileshe (2013) / Gunathilaka et al., (2013) / Yong and Musttaffia (2012)
21	Contractor's experience	Ngugen and Chileshe (2013) / Gudienea et al., (2013) / Gunasekera (2009)
22	Staff motivation and satisfaction	Gunathilaka et al., (2013) / Tabish and Jha (2011) / Gunasekera (2009)
23	Establishing an effective document control system	Kazaz et al., (2012) / Tabish and Jha (2011) / Gunasekera (2009)
24	High degree of trust shared by project participants	Gudienea et al., (2013) / Tabish and Jha (2011) / Gunasekera (2009)
25	Conducive work culture and environment	Mitra and Tan (2012) / Kazaz et al., (2012) / Gunasekera (2009)
26	Adequate career development programs	Tabish and Jha (2011) / Gunasekera (2009) / Desilva et al., (2008)
27	Adequate technological knowledge and transfer	Kazaz et al., (2012) / Tabish and Jha (2011) / Gunasekera (2009)
28	Adequate trainings and skill development programs	Tabish and Jha (2011) / Gunasekera (2009) / Desilva et al., (2008)
29	Clarity of strategy, roles and responsibilities	Gudienea et al., (2013) / Gunasekera (2009) / Gunasekera (2009)
30	Developing an appropriate organizational structure and design	Alisa et al., (2014) / Tabish and Jha (2011) / Desilva et al., (2008)
31	Effective contract management system	Gudienea et al., (2013) / Tabish and Jha (2011) / Desilva et al., (2008)
32	Effective management of project meetings	Kazaz et al., (2012) / Gunasekera (2009) / Desilva et al., (2008)
33	Implementation of learn principles	Tabish and Jha (2011) / Gunasekera (2009) / Desilva et al., (2008)
34	Analysis of information and knowledge management	Kazaz et al., (2012) / Tabish and Jha (2011) / Desilva et al., (2008)
35	Team members commitment and productivity	Gudienea et al., (2013) / Gunasekera (2009) / Desilva et al., (2008)

2.5 PROJECT MANAGER

A project manager can be described as a person charted with authority to lead a team in other to fulfill the requirement of the objectives of a project and satisfy stakeholders. PMI (2008).

A project manager can be in any organization and not only restricted to the construction companies. (Barber, 2005). The project manager is authorized by a project charter to have overall charge to execute a project. The project manager is required to be a possessor of knowledge, technical skills, and the capability to achieve project objectives through the responsible influence of members in his or her team members. Barber, (2005).

The role of the project manager is different to that of the functional manager whose responsibility is providing management oversight for functional unit. The project manager may reports to the functional manager in the context of a functional organization. He may also report to a program manager or a portfolio manager.

2.5.1 Roles and responsibilities of project managers

The project manager plays very vital role in leadership of the project team, he or she is not expected to perform every roll on the project but should have the performing team. Unfortunately, little research has been done concerning the roles of a project manager. (Sebt et al., 2010).

Wilemon and Cicero (1970) state that project managers' roles are mainly related to organizational constraints

  (1) Risks management

  (2) Technical and managerial tasks and

(3) Interpersonal relations.

However, the roles of project managers are mainly related to;

(1) problem solving,

(2) Entrepreneurship,

(3) Give direction and responsible for the team.

Likewise, Spitz (1982) states that the roles of project managers are concerned with

(1) Planning,

(2) Search for information and communication,

(3) Identification and acquisition of resources,

(4) Coordination, control, and catalyst.

Bowenkamp and Kleiner (1987) list of the responsibilities of project managers are as follows:

(1) Lead the efforts to plan thoroughly all aspects of the project,

(2) Control the organizational human resources needed by the project,

(3) Control the basic technical aspect of the project output,

(4) Lead the people and organizations assigned to the project,

(5) Monitor performance and efficiency of all phases of the project, and

(6) Complete the project on schedule and on budget.

2.5.2 Competencies of project managers

Competency can basically mean the ability an individual to undertake an assignment successfully and efficiently. This term is mostly used by different people to express different opinions. Most importantly, is the standard of measurement. (Sebt et al., 2010).

The five competency characteristics according to (Thal and Bedingfield, 2010) are,

(1) Knowledge

(2) Skill

(3) Motives

(4) Leadership traits

(5) Self-concept attitudes

There are two classifications of competencies which are based on performance and attributes by Crawford (1997).

2.5.3 Project manager and project success

Many researchers have established the fact concerning the duties assigned the project manager are critical to the project. (Yang. et al., 2011), (Sebt et al., 2010), (Smith, 1999) etc. However, the leadership of the project manager on project success has been ignored (Turner and Müller, 2005). Brown and Eisenhardt (1995) discovered the significant impact of a project manager on process performance and product or service effectiveness. To Browns submission Anderson (1992), strongly disagrees, with his findings that the competencies of project managers would not rightly affect success of the project. Anderson, explains that the performance of a project is influenced by the fervent practices of project management theories by the projects manager.

Conclusively, project success is openly subjected to the performance of the project manager inputs (Smith, 1999).

2.5.4 Successful vs. effective project managers

According to Luthans, 1988 in his comparison of a successful project manager and an effective project manager,

Successful project managers are;

(1) Speedily promoted within an organizational context,

(2) Deal with different types of activities

Effective project managers are;

(1) Committed, productive, and satisfied team members with high project performance

(2) Communicate with project stakeholders

(3) Conflict management and

(4) Encourage team members

Also, Thamhain and Wilemon (1977) reminded, leadership, communication, and human resource management is contributing factors to the effectiveness of a project manager (Luthans, 1988).

2.6 EFFECTIVE PROJECT MANAGERS

The presences of challenging times in an organization are when effective project managers emerge. Their efficiency is determined by their ability to manage the project difficulty moments. (Norrie and Walker, 2004; George, 2009).

For that matter, project managers with the ability to withstand pressure are highly indispensable in the quest of excellent delivery. Anderson (1992)

Thamhain (2004) acknowledge that real project managers are influential on team members. They inspire and encourage team members, give them the sense of pride and belonging, define clear goals and objectives and unite the team at every level.

2.6.1 Requirements for project managers to be effective

(Pettersen, 1991b) Point out that many writers appears to settle on similar significance of the requirement for a project manager. Pettersen outlines these requirements in the table below. See Table 2.6.

Table 2 .6 Requirements for project manager to be effective

SOURCE	REQUIREMENTS
Martin(1976)	Personal characteristics Skills (planning, financial control, drawing up work schedules, management of the integrity, contract management, knowledge of behavioral sciences, supervision, and knowledge of organizational systems and procedures)
Stuckenbruck (1976)	Ten attributes Multidisciplinary-oriented Global problem-oriented Good manager and administrator (ability to manage daily operation efficiently and know the basic of management of planning, budget, supervision, and follow-up), Good analyst (having strong analytical abilities), Creative (in dealing with information and problems), Effective communicator (Communicate with everyone involved in the project with a good command of spoken and written word), Motivator (motivate project team members to achieve preset goals), Flexible (ability to adapt to changes), non-temperamental (calm, realistic, dedicated, generous, stable, quick-thinking, disciplined, and persistent)

Adams and Barndt (1978)	Abilities (planning, coordinating, budgeting, managing stakeholders, and assessing technical programs and financial reports)
Sharad(1979)	Organizational skills (be a good organizer in terms of fixing priorities and the ability to manage specialists from different fields) Leadership skills
(Declerk et al., (1980)	Technical aspect (having theoretical and practical knowledge of project Management techniques) Managerial aspect Team member aspect (be part of the project team, be involved in external and internal networks along with various interpersonal relationships, and having stability, firmness, authority, flexibility, and adaptability)
Stickney and Johnston (1980)	Technical skills (the abilities to apply knowledge in the relevant field) Human-relationships skills (the abilities to communicate efficiently and Maintain a harmonious working group, and motivate team members) Conceptual skills (the abilities to perceive the project as a system via keeping a global perspective) Delegation skills Interpersonal skills

Mikkelsen & Folmann (1983)	Personal characteristics (autonomy and emotional stability, personal contacts, and the ability to operate in an unknown environment)
Kerzner (1984)	Ten skills (team building, leadership, conflict resolution, technical expertise, plannin, organisation, entrepreneurship, administration, management support, and resources allocation)
Einsiedel (1987)	Five characteristics (be taken seriously by organisational stakeholders, be capable and creative in solving problems, be able to tolerate ambiguity, having a flexible management style to handle situational changes, and be an effective communicator)

Source: (Pettersen, 1991b)

2.6.2 Selecting effective project managers

The ability to choose the best person or team to execute an essential assignment is worth studying. Notwithstanding this importance, only few models are created to facilitate the selecting of capable project managers in a typical projectized organization. (Sebt et al., 2010).

Many contributions, especially by Zavadskas et al. (2008) support the factors under listed to assist in the selecting of effective project managers, and they are;

(1) Personal skills,

(2) Project management skills, and

(3) Experience

In addition, Cheng et al. (2005) suggested the considerations past performance of the project manager to be selected.

In this regards, we are sure the success of the project can be enhanced by selecting an effective project manager.

2.6.3 Essential competencies of effective project managers

For any efficient output there is the demand of core competencies required.

The 5 essential competencies for effective project managers, according to, Fryer (1979) are

(1) Social skill,

(2) Decision-making,

(3) Handling problems,

(4) Recognizing opportunities, and

(5) Managing change

Definitely, significant capabilities of project managers can be classified as,

leadership skills, technical experience, human relation skills and administrative experience

by (Katz, 1974; Anderson and Woodhead, 1981; Anderson and Tucker, 1990; Cleland and King, 1998). Refer to Table 2.7.

Table 2.7 Key competencies of effective project managers

Human Relation Skills	Leadership Skills	Technical Experience	Administrative Experience
Capability to motivate people	Clear leader and director with authority	Understand technology	Planning
Team building	Capability to plan and elicit commitment	Knowledge of tools and techniques used in the engineering/ construction process	Organizational skills
Integrating team members	Problem identification and solving (director and facilitator)	Applications and methods	Knowledge and understanding of estimating systems, cost control, scheduling control, quality and safety
Communications	Balance technical, economics, and human factors	Technology trends and evolution	Procedure development and implementation
Conflict resolution	Decisive decision making		
	Communications		

Source: (Anderson, 1992)

The 9 major categories of competencies according Brill, for effective project managers, by Brill et al. (2006).

    (1) The Problem solving know-how,

    (2) Leadership proficiency,

    (3) Project administration capability,

    (4) Communication expertise,

(5) People management expertise,

(6) Analytical expertise,

(7) Tools expertise,

(8) Personal characteristics, and

(9) Context knowledge

(Brill et al., 2006). Refer to Table 2.8.

Table 2.8: Essential competencies of effective project managers

CATEGORY	STATEMENT	CATEGORY	STATEMENT
Problem Solving Expertise	Conduct business ethically Be able to recognizes problem Manage crises Manage risk Assess risk Plan contingencies	**Personal Characteristics**	Show integrity Be honest Have common sense Be clear Be committed Be disciplined Payattention to detail Be a realist
Leadership Expertise	Make time-sensitive decisions effectivelyExecute project plan Promote teamwork Be diplomatic Negotiate effectively Be persuasive Build esteem in others	**Context Knowledge**	Know the goals of the project Know the mission of the project Know how project success is measured. Know the available resources. Know the client Know the goals of the organization
Project Administration Expertise	Manage a budget Set a schedule Manage time Manage quality Able to forecast or estimate •Be able to write proposals	**Communication Expertise**	Listen effectively Have strong verbal communication Skills Have strong written communication skills Deliver good and bad

			news effectively Presentation skills
People Expertise	Manage expectations Resolve conflicts Establish mutual trust Understand human nature Help others achieve their goals Manage stress in self and others Build consensus	**Analytical Expertise**	Priorities Capture and use knowledge Use project management methodologies
		Tools Expertise	Computer skills. Financial management tools.

Source: (Brill et al., 2006)

2.6.4 Competencies of effective project managers

(Payne, 1995; Tullett, 1996; Rubinstein et al., 2001). Listed quite a few competencies required by multiple-project managers to be effective, and they are

    (1) Innovative style of thinking.

    (2) Multitasking.

    (3) The ability to manage conflict.

Furthermore, Patanakul and Milosevic (2008) offered a careful list of competencies of both single and multiple project managers. See Tables 2.9 and 2.10.

Table 2.9 Competencies of an effective project manager

AREA	ELEMENT	STUDIES
Technical area	Technical expertise	(Gaddis, 1959; Thamhain, 1983; Goodwin, 1993; Shenhar and Thamhain, 1994; Tullett, 1996)
	Understand technology and trends	(Thamhain, 1991; Shenhar and Thamhain, 1994)
	Problem analysis	(Gaddis, 1959; Archibald, 1975; Pettersen, 1991; Thamhain, 1991; Shenhar and Thamhain, 1994)
Operational area	Planning and scheduling	(Gaddis, 1959; Archibald, 1975; Thamhain, 1983; Posner, 1987; Pettersen, 1991; Shenhar and Thamhain, 1994; Frame, 1999)
	Monitoring and control	(Gaddis, 1959; Archibald 1975; Thamhain, 1983; Pettersen, 1991; Shenhar and Thamhain, 1994; Dunn, 2001)
	Team structuring	(Posner, 1987; Pettersen, 1991; Shenhar and Thamhain, 1994; Dunn, 2001)
Human area	Leadership	(Gaddis, 1959; Thamhain, 1983; Posner, 1987; Goodwin, 1993; Turner, 1993; Shenhar and Thamhain, 1994; Hauschildt et al., 2000)
	Communication	(Gaddis, 1959; Archibald, 1975; Posner, 1987; Pettersen, 1991; Turner, 1993; Shenhar and Thamhain, 1994; Fricke and Shenhar, 2000)
	Team management/ resolving conflicts	(Pettersen, 1991; Hauschildt et al., 2000; Dunn, 2001)
	Personal qualities of project managers	(Posner, 1987; Pettersen, 1991)
Strategic area	Strategic thinking	(Pettersen, 1991; Shenhar and Thamhain, 1994; Dunn, 2001)
	Business sense	(Gaddis, 1959; McDonough (III) and Kinnunen, 1984; Shenhar and Thamhain, 1994; Frame, 1999)
	Customer coordination	(Frame, 1999; Dunn, 2001)

Source: (Patanakul and Milosevic, 2008)

It is agreed that for multiple - project managers to be effective, they requires special competencies in other to coordinate projects alongside competencies for leading individual projects. (Patanakul and Milosevic, 2008).

Table 2.10 Competencies of effective multiple-project managers

Competencies For Coordinating Projects		Competencies For Leading Individual Projects	
Organizational Experiences	Establishing relationship, network, and credibility	Administrative/ process	• Planning/scheduling • Monitoring/control • Risk management • Resource management • Company's project management process
Interdependency management	Managing projects impacts	Interpersonal/ Intrapersonal	• Problem solving, • Conflict management •Organised and disciplined • Responsible • Proactive and ambitious •Mature and self-controlled • Flexible
Multitasking	Minimizing context switching loss	Business Strategic	• Business sense • Customer concern • Integrative capability • Strategic thinking, • Profit/cost consciousness
Simultaneous team management	Building and leading project teams	Technical	• Knowledge of product applications • Knowledge of project products • Knowledge/skills of technological tools and techniques • Ability to solve technical problems
Management of Inter project processes	Managing consolidated activities of different projects		

Source: (Patanakul and Milosevic, 2008)

2.6.4.1 Skills of effective project managers

The word skill is commonly used to express the level of talent or expertise of a person assigned to a specific task. In the requirement of an effective project manager, numerous skills have been identified by renowned researchers,

Kliem and Ludin (1992) identified empathy as the critical skill among all the various interpersonal skills.

The requirement to be an effective project manager, demands strong leadership skills, good communication skills, people management skills, flexibility, inventive, adaptability etc rather than technical skills. Rosenau (1998).

Notwithstanding these findings, Spitz recommended 7 skills to propel project managers to be successful. Spitz (1982), they are

    (1) Interpersonal skill

    (2) Synchronization skill

    (3) Content expertise skill

    (4) Information-processing or communication skill

    (5) Capacity for handling complexity skill

    (6) Negotiation skill and

    (7) Boundary-maintenance skill

Also, Fisher made relevant comparison between people management skills and behaviors. In 2006, Fisher differentiated between an effective project manager and a project manager.

Fisher discovered (6) six precise skills and their significant behaviors which are needed for a project manager to be effective (Fisher, 2011). See Table 2.11.

Table 2.11: Six specific skills of an effective project manager

SKILL	BEHAVIORS
Understanding behavioral characteristics	Be truthful with others. Trust in your team members' abilities. Be empathetic. Express your understanding in the relationship between behaviors and feelings. Manage people in different situations and circumstances.
Leading others	Demonstration a high degree of encouragement towards innovation to inspire them. Ensure that your team members comply with your wishes.
Influencing others	Convince, influence or impress others in order to support their agenda. Influence others by selling them the benefit. Share with others what it feels like to work in a highly successful team.
Authentizotic Behaviour	Show open concern for others. Accept people for what they are and do not try to force them to change. Empower people by delegating tasks to them and ask them to take on board more responsibilities. Develop an understanding of what makes the other person tick and what is important to that person. Show genuine concerns and feelings for the needs of others.
Conflict management	Concentrate on the work issues and do not get personal. Show loyalty, integrity, trust, help and support when dealing with conflicts. Be tolerant. Observe behaviors of team members to sense early when conflicts begin to develop, and then take corrective actions to resolve these.
Cultural awareness	Develop, display and apply an awareness of the cultural differences of team members. Show an understanding and knowledge of the values and beliefs of other cultures.

Source: (Fisher, 2011)

Earlier, Bedingfield and Thal (2008) also published key skills of effective project managers

(1) Leadership skill

(2) Communication skill

(3) Decision making skill

(4) Administrative skill

(5) Managing abilities,

(6) Analytical thinking and problem-solving skills,

(7) Technical skills, etc.

2.6.4.2 Characteristics of effective project managers

Previous literature as review certain characters that influences success faster. Notwithstanding those write ups, (Müller et al., 2010) made justices to this subject in relation to identifying the characteristics of project managers.

For instance, Pinto (2007) profiles the nine characteristics of an effective project manager and stated that the effective project manager is enthusiastic to lead and act proactively. See Table 2.12.

Table 2.12 Characteristics Of Project Manager Who Can Lead

RANK	NINE CHARACTERISTICS OF AN EFFECTIVE PROJECT MANAGER
1	Decisive person
2	Leads by example
3	Technically competent and skillful
4	Visionary leader
5	Open to new ideas
6	A great motivator
7	A good communicator
8	Supports team members
9	Stands up to top management when necessary

Source: (Pinto, 2007)

Also, Gray and Larson supported Pintos contributions by adding 7 distinct characteristics in 2008, and they are, also

(1) Systems thinker,

(2) Personal integrity,

(3) Proactive.

(4) High emotional intelligence,

(5) General business perspective,

(6) Effective time management,

(7) Skillful politician and optimist.

<center>**CHAPTER THREE**</center>

<center>**RESEARCH DESIGN AND METHODS**</center>

3.0 INTRODUCTION

This chapter shows the approach that was adopted in conducting the study. It highlights the research design, scope of the study, data source; sample size, sample design, technics of data collection and data analysis and presentation.

3.1 RESEARCH DESIGN

Research design describes the methodology used in which the research objectives are questioned. Following the review of both primary and secondary literature review on critical success factors (CSF) and competencies of project managers, the most prevailing factors were identified. In review of the literature, factors which appeared more than three times and are within the control of project managers were considered. This was to ensure that only popular factors are outlined for the study. Furthermore, others were combined as they shared similar characteristics. These factors were used to develop a questionnaire base survey to identify the critical success factors on an effective project manager. A likert scale of $1-5$, with 1 representing not very often, 2- not often, 3 - not sure, $4-$ often and 5 representing very often.

The highly rated factors were extracted through analysis by using the SPSS statistical tool. The approach will help in one way or the other to provide sound recommendations to industries and decision makers concerning the vital project manager's competencies that will enhance project success.

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3.2 SCOPE OF THE STUDY

The study therefore seeks to identify the critical success factors in the construction industry and the significant competencies of an effective project manager in the Volta region of Ghana.

3.2.1 Geographical Scope

The research was focused in Ho, one of the five municipalities in the Volta region which is one of the Ghana's ten administrative Regions. The Volta region is located west of Republic of Togo and to the east of Lake Volta. Volta Region is divided into twenty-five (25) administrative districts. The region is multi-ethnic and multilingual, including groups such as the Ewe, the Guan, and the Akan peoples. The Guan People include the Lolobi, Likpe, Akpafu, Buem, and Nkonya people. (Wikipedia 2017).

The municipality has Ho as its capital in the Volta region of Ghana. Ho continues to grow through administrative, industrial, educational and commercial centers that attract people from all over the country. The city lies between Mountain Adaklu and Mountain Galenukui. The largest of construction professionals working on projects under Public-Private Partnership (PPP) arrangements and institution directly and indirectly into construction in the region; therefore there is the probability of getting high response rate and accurate data (Kukah, 2016).

The study will be limited to the construction industry in the D1K1 Contractor category registered with the Ho municipal assembly. Since Ho is the capital in the Volta region, it has

the majority of construction, institutions and consultancy firms in the region. This will help in getting a realistic assessment for the study.

3.2.2 Contextual Scope

The study therefore seeks to identify the critical success factors on construction projects and its relation to the competencies of an effective project manager in the Volta region of Ghana. The research survey was focused on only D1K1 contractor group registered with the Ho Municipal in the Volta region of Ghana. The D1K1 is the highest contractor category according to the Ministry Of Works And Housing in Ghana. They mostly undertake World Bank projects with requirement of the services of a project manager. The study will therefore be limited to only D1K1 contractors approved and recommended from the Ho municipal assembly.

3.3 DATA SOURCES

Data was generated from both the primary and secondary sources. The primary data were collected through the administering of questionnaires and the secondary data were also collected through the review of books, document, journals, articles and report related to the subject matter of the study.

3.4 SAMPLE POPULATION

The sample units comprised information from a total of thirty-five (35) D1K1 Construction companies within Ho and the (7) main communities in the Ho municipal in the Volta region

of Ghana. According to the procurement department of Ho municipal assembly which keeps records of all contractors registered and projects in the selected communities.

3.5 SAMPLE SIZE

A sample size of 70% of the total number of highly rank D1K1 category of contractors registered in the Ho Municipal assembly (HMA) in the Volta region was considered for the study. Twenty-five (25) D1K1 companies registered and recommended from the Ho municipal assembly in the region were used for the study to constitute the total number of companies in the Ho municipal of the Volta region of Ghana.

3.6 SAMPLE DESIGN

The non-probability sampling method was used to collect the sample for the study. The sample technique used was the purposive sampling to collect information from the project managers, contractors, consultant, quantity surveyors, engineers and supervisors working in the selected companies registered and recommended from the assembly. The considered companies were then administered with the questionnaires of the purposive sampling method. The purposive approach was subjected to administer questionnaire to respondents with known and credible profile within the selected companies.

3.7 TECHNIQUE OF DATA COLLECTION

Close-ended questionnaires was designed, administered and collected from the project managers, contractors, consultant, quantity surveyors, engineers and supervisors in the 25 D1K1 construction companies recommended. They represent construction companies and firms in the in the Ho municipality of the Volta region of Ghana.

3.8 DATA ANALYSIS AND PRESENTATION

Taylor-Powell E. and Renner M. (2003), Since qualitative data consist of numbers, all data analysis and interpretation were required to bring enlightenment to the critical success factors in construction project delivery and the significant competencies to look for in selecting an effective project manager by using the quantitative method. The data gathered was coded into the software for analysis (SPSS- Statistical Packet for Social Sciences, version 21.0). The tool employed here was Descriptive statistics such as frequency, mean score and standard deviation

CHAPTER FOUR

DATE ANALYSIS AND DISCUSSIONS

4.1 INTRODUCTION

This chapter contains a descriptive analysis of the research which was aimed to identify the critical success factors to consider in choosing an effective project manager on a construction project. The primary data was collected from project managers, construction managers, quantity surveyors, site supervisors, and engineers working with selected D1K1 contractors registered and recommended at the Ho municipal assembly in the Volta region of Ghana. The data collected will help draw conclusion on the relevant success factors on construction project delivery and finally suggest some significant competencies in selecting an effective project manager. The analysis employs the use of the descriptive analysis. Fifty (50) questionnaires were administered to contractors in district and its environs out of which thirty- two (32) were received.

4.2 DEMOGRAPHIC DESCRIPTIVE ANALYSIS OF DATA

The results from the field survey reports that females are scared in construction within the Ho municipality in the Volta region of Ghana. Out of thirty-two respondents, all claim to be males. The table below presents the result.

Table 4.1 Sex of Respondents

Gender	Frequency	Percent (%)
Male	32	100
Female	0	0
Total	32	100

Source: Field Survey, September 2018

Table 4.2.2 presents the age of the respondents from the field survey after the analysis of data. From the result, 5 respondents respond by ticking 26-30 years representing 15.6 % and 15 number of respondent out of 32 claim to be in between 31-35 years representing 46.9 %. 8 people responded between 36-40 and 4 number responded 41 and above. The result from the field survey shows that the youth dominate the construction industry in the Ho municipality of the Volta region of Ghana.

Table 4.2 Age of Respondents

Years	Frequency	Percent (%)
26-30 years	5	15.6
31-35 years	15	46.9
36-40 years	8	25.0
41 and above	4	12.5
Total	32	100.0

Source: Field Survey, September 2018

Table 4.2.4 shows the profession of the respondents in the construction companies in the Ho municipality of the Volta region of Ghana. After the analysis of the results from the field, 4 respondent ticked project manager this represents 12.5%. Another 4-respondent ticked consultant which also representing 12.5%. 10 claiming they are contactors on a construction project, this represents 31.3% and that of the quantity surveyors are 8 representing 18.8%. 6 other respondent claims to be supervisors recording 18.8% of respondent. This means that in Ho, contractors dominate the industry. This may be energetic youth dominating the industry.

Table 4.3 Profession of Respondents

Profession	Frequency	Percent (%)
Project manager	4	12.5
Consultants	4	12.5
Contractors	10	31.3
Quantity Surveyor	8	25.0
Others specify	6	18.8
Total	32	100.0

Source: Field Survey, September 2018

After the analysis of the results from the field Survey, Table 4.2.5 shows the qualification of the respondents. 6 numbers indicated holding a Higher national diploma (HND) recording 18.8% of respondents, 46.9% respondent tick First degree indicating 15 people by frequency. The Second degree category recorded 11 respondent representing 34.4%. This means that in the D1K1 companies in Ho, First degree holders hold influential positions within the industry. This may be energetic and educated youth dominating the industry.

Table 4.4 Qualification of Respondents

Qualification	Frequency	Percent (%)
HND	6	18.8
First degree	15	46.9
Second degree	11	34.4
Total	32	100.0

Source: Field Survey, September 2018

The finding on the years of experience of the respondents is captured in Table 4.2.6 below. After the analysis of the results from the field, 17 respondents tick 1-5 experience representing the largest recorded by 53.1%. Respondent with 6-10 years of experience recorded 34.4%. Only 4 respondents are between 11-15 working experience making 12.5%

of the total respondent. The result from the survey suggests that the D1K1 companies in Ho engage more youth with fresh energy and technology.

Table 4.5 Experience of Respondents

Years of Experience	Frequency	Percent (%)
1-5	17	53.1
6-10	11	34.4
11-15	4	12.5
Total	32	100.0

Source: Field Survey, September 2018

4.3 CRITICAL SUCCESSFUL FACTORS

The table below is the summary of the results after the analysis using descriptive statistics approach mainly mean score rank. The factors were listed from the existing literature, and the respondents were asked to rank them based their experience. The first ranked variable was Effective quality assurance culture with a mean of 4.9375. From the respondent's point of view, quality assurance should factor to be considered on any construction project. This result agrees with what (Zidanea el al. 2013) proposed. Zidanea el al. (2013), suggested that adequate communication among all project participants should be crucial and it was even recorded as the second ranked variable after the analysis with a mean of 4.9063. For any construction project, communication among parties should be important from the respondent point of view. Parties involved should play their role effectively and eliminate any barrier to communication. According to (Pinto and Slevin, 1988a), parties involved on a construction project should provide timely data to key players. The third ranked variable was availability of resources as planned throughout the project with a mean of 4.8750. Construction projects

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like any other project demand adequate funding from the onset to the completion of the project. The client must show commitment while the contractors also do the same to keep the project running. No wonder adequate funding was the next ranked variable with a mean of 4.8438. Adequate funding and availability of resources as planned throughout the project are dependent on each other. From the analysis, detailed project planning, estimations and scheduling are the next ranked variable. The scope of the project must be detailed, explaining every section of works, accurate estimates and well detailed work programmes should be provided to enhance the smooth running of works on site. Another critical factor that needs to be considered on a project is conducive work culture and environment. The culture of the people must not be taking for granted, rules and taboos laid down must be observed accordingly. Trust is a key factor in every human setting. Ability to be trust must be worked out for and maintained at all times. Trust must exist among the parties to promote a good working environment. Availability of experience professionals and skillful team should be encouraged on every project to avoid project cost overrun. Work done need to be well measured and quantified before claims and certificate are prepared.

Table 4.6 Critical Success Factors

Critical Successful Factors	N	Mean	Std. Deviation
Effective quality assurance culture	32	4.9375	.24593
Adequate communication among all project participants	32	4.9063	.29614
Availability of resources as planned throughout the project	32	4.8750	.33601
Adequate funding	32	4.8438	.36890
Detailed project planning, estimations and scheduling	32	4.8125	.47093
Conducive work culture and environment	32	4.7813	.42001
Adequacy of design details and specifications	32	4.7500	.43994
High degree of trust shared by project participants	32	4.6563	.48256
Availability of experience, professionals and skillful team	32	4.5938	.49899
Developing an appropriate organizational structure and design	32	4.5625	.61892
Availability of advanced technology/construction equipment	32	4.5625	.50402
Effective site management, control and coordination	32	4.5000	.50800
Implementing an effective health and safety programme	32	4.5000	.50800
Clearly defined goals/objectives and scope	32	4.4688	.50701
Frequent project monitoring/progress meetings	32	4.4375	.87759
Staff motivation and satisfaction	32	4.4063	.49899
Clarity of strategy, roles and responsibilities	32	4.3750	.49187
Implementation of learn principles	32	4.2813	.68318
Team leaders /Project management knowledge/experience and skills	32	4.2813	.45680
Adequate trainings and skill development programs	32	4.2500	.56796
Adequate technological knowledge and transfer	32	4.2188	.97499
Team members commitment and productivity	32	4.1875	.59229
Effective allocation and control of workforce	32	4.1250	.90696
Administration and leadership	32	4.0625	.56440
Managing and control of subcontractor's work	32	4.0625	.66901
Effective project team formation	32	3.9375	.61892
Strategic and detailed procurement process	32	3.9063	.53033
Analysis of information and knowledge management	32	3.8125	.85901
Establishing an effective document control system	32	3.5938	1.29164
Contractor's experience	32	3.5938	.91084
Effective project risk management system and process	32	3.5313	.84183
Effective management of project meetings	32	3.5000	1.04727
Effective contract management system	32	3.3750	1.23784
Adequate career development programs	32	3.2500	1.34404
Top management support and commitment to the project	32	2.7813	1.43087
Total	32		

Source: Field Survey, September 2018

Following the analysis, the critical success factors identified here are the set of organizational best practices which when implemented will lead to organizational success. The following factors with a mean of more than 4.8 are conceded being most critical and those with the mean less than 4.8 are not critical according to the research.

Hence the list of critical success factors with a mean higher than 4.8 are as following;

(1) Effective quality assurance culture

(2) Adequate communication among all project participants

(3) Availability of resources as planned throughout the project

(4) Adequate funding

(5) Detailed project planning, estimations and scheduling

4.4 SIGNIFICANT COMPETENCIES OF A PROJECT MANAGER

Table 4.4 classifies the competencies into four groups as Administrative, Human relation, Leadership and Technical. After the analysis using the mean score, skills groups under administrative was ranked first with a mean (mean 2) of 4.417. This means that, as a project manager, you need to function administratively in order for a project to succeed. Dwelling into this class of competency, Knowledge and understanding of estimating system was ranked first with a mean of 4.5000. This means that a project manager must understand what he or she is estimating for and how to even prepare construction estimates. Procedure development and implementation was ranked as the second variable with a mean of 4.4375. As a project manager, you must follow a well-planned procedure for the implementation of your policies. The third ranked variable under this category of competency is organizational skills with a mean of 4.4688. A project manager must understand organizational needs and

operate accordingly. Human relation skills were ranked second among the category of competencies with mean value of 4.350. This means that even after the project manager develops his or her administrative skills, he needs human relation skills to buttress it. In every organization, human relations are very important to the extent of even having human resource manager. Best relation with subordinates would promote success at work place. This category of competencies comprises capability to motivate people, conflict resolution, team building, communication and finally integrating team members with their means of 4.500, 4.688, 4.187 and 4.0938 respectively. Leadership skills were ranked as the third group among the classifications. Project managers as leaders, leading on any construction project must be able to identify problems and solve them accordingly. Brill et al. (2006) suggested that as a project manager, one must conduct business ethically, be able to recognize a problem, manage crises and manage risk as well. Challenges do occur on any project, and if they do occur, it must be solve for works to proceed. Clear leader and director with authority are also needed for a project manager. A project manager must be understood clearly and exercise your authority to enhance the success of the project. This variable was ranked as the second with a mean of 4.2813. To buttress the above skills, technical skills are needed to perform effectively as a project manager and to understand the scope of every project and it demands. This category of competencies was ranked the fourth among the other categories with a mean of 3.945. Variables under this category include; Understand technology, Applications and methods, Technical evolutions and Knowledge of tools and techniques used on the project in order as ranked after the analysis with their various means as 4.7188, 4.2813, 4.1875, 4.1875 and 4.1563 respectively.

Table 4.7 Significant Competencies of a Project Manager

Competencies	N	Mean 1	Std. Deviation	Mean 2
Administrative Experience/Skills				**4.417**
Knowledge and understanding of estimating systems, cost control, scheduling control, quality and safety	32	4.5000	.50800	
Organizational skills	32	4.3125	.53506	
Procedure development and implementation	32	4.4375	.50402	
Human Relation Skills				**4.350**
Integrating team members	32	4.0938	.99545	
Communications	32	4.1875	.39656	
Team building	32	4.4688	.62136	
Capability to motivate people	32	4.5000	.50800	
Conflict resolution	32	4.5000	.50800	
Leadership Skills				**4.306**
Problem identification and solving skills	32	4.7188	.45680	
Clear leader and director with authority	32	4.2813	.63421	
Balance technical, economics and human factors	32	4.1875	.47093	
Capability to plan and elicit commitment	32			
Decisive decision making	32	4.1875		
		4.1563		
			.78030	
			.62782	
Technical Experience/Skills				**3.945**
Understand technology	32	4.1875	1.02980	
Applications and methods	32	4.1563	.72332	
Technical evolutions	32	3.7500	.95038	
Knowledge of tools and techniques used on the project	32	3.6875	1.09065	

Source: Field Survey, September 2018

Hence the list of competencies with a mean of more than 4.50;

(1) Problem identification and solving skills

(2) Knowledge and understanding of estimating systems, cost control, scheduling control, quality and safety

(3) Conflict resolution

(4) Capability to motivate people

4.5 CHARACTERISTICS OF SUCCESSFUL PROJECT

Table 4.5 highlights some features of a successful project. After the analysis the variable ranked first was within budget with and a mean score of 5.5938. For a construction project to be counted as been successful, its cost must be within the estimated cost. Having this on mind, project managers need to be careful about the changes they introduce at every stage of the project in order to control variations which normally results into high cost of projects. Meeting project's overall performance, functionally, budget and timing were the second ranked variable after the analysis with a mean of 4.9375. This result shows that, after execution of any project, if it fails to perform functionally and even if it goes beyond the estimated duration, then you fail as a project manager for not meeting the projects overall performance. Projects must serve their purpose in order to be counted as been successful. Meeting customers and stakeholder's satisfaction is very important. This variable was ranked as the third variable after analysis was conducted with a mean of 4.8438. This means that customers, stakeholders and clients invested huge sum of money into the construction of any project. Various parties to project become satisfied when projects meet their overall performance, as proposed by (Muller and Tunner, 2007) within budget and timing. Meeting

user and quality requirements is essential, no wonder this variable was ranked the fourth with a mean of 4.8438 from respondents' point of view. Specifications are spelt out in the contract document in order to meet what the client want. Teams come together to achieve a particular vision. Teams to the project become satisfied when their desires are met. The variable was ranked as the fifth with a mean of 4.3125. With all these characteristics, teams to project need to come together to value the project to determine whether the characteristics are met.

Table 4.8 Characteristics of successful project

Characteristics	N	Mean	Std. Deviation
Within budget	32	5.5938	9.03348
Meeting project's overall performance; functionally, budget and timing	32	4.9375	.24593
Customer and stakeholder's satisfaction	32	4.8438	.36890
Meeting user and quality requirements	32	4.5000	.56796
Project team's satisfaction	32	4.3125	.59229
Meeting project's purpose	32	4.1563	.62782
Within scope	32	3.7813	.70639
Reoccurring business with the client	32	3.7188	.72887
Project team satisfaction	32	3.3750	.70711
Total	**32**	**3.938**	

Source: Field Survey, September 2018

CHAPTER FIVE

RECOMMENDATION AND CONCLUSION

5.1 INTRODUCTION

The aim of the study is to identify the critical success factors to consider in selecting an effective project manager on a construction project. The first chapter talks mainly about the general introduction to the study, aim and objectives of the study. Comprehensive literature was carried out in chapter two; chapter three presents the methodology of the study. Chapter four is about data analysis and discussions while this chapter summarized the findings of the study.

5.2 REVIEW OF RESEARCH OBJECTIVES

In order to achieve the aim the study, two objectives were developed; to identify the critical success factors in construction project delivery and to identify the significant competencies of a project manager that contributes to the project success. This chapter summarized all the findings from the study, the limitations of the study and recommendations for further studies.

5.2.1 Critical Success Factors of a construction Project

Identifying critical success factors of a construction project was the first objective. 35 factors which were within the control of the project manager were discovered from the existing literature. Respondents were later asked to rank the factors in order to determine the most critical factors that affect a construction project using the mean score.

Following the analysis, the critical success factors identified here are the set of organizational best practices which when implemented will lead to organizational success. The following factors with a mean of more than 4.8 are conceded being most critical than those with the mean less than 4.8.

The critical success factors identified with a mean greater than 4.8 are;

    (1) Effective quality assurance culture

    (2) Adequate communication among all project participants

    (3) Availability of resources as planned throughout the project

    (4) Adequate funding

    (5) Detailed project planning, estimations and scheduling

5.2.2 Significant Competencies of a Project Manager

Significant competencies of a project manager were the second objective of the study. After literature review, some competencies were discovered. The significant competencies identified are;

    (1) Problem identification and solving skills

    (2) Knowledge and understanding of estimating systems, cost control, scheduling control, quality and safety

    (3) Conflict resolution

    (4) Capability to motivate people

The researcher further classifies the competencies into groups of four (4). To help identify the group that is more significant, descriptive statistics (mean score) was used to rank.

Administrative experience as a group was ranked the first followed by Human relation skills. Thirdly ranked are leadership skills and finally the technical skills.

5.3 SUMMARY OF OBJECTIVES

The aim of the study was achieved first by reviewing the relevant literature on identifying the critical success factors in choosing an effective project manager on a construction project. Three objectives were outlined to help achieve the aim. After conducting a comprehensive literature view, respondents were later asked to express their views on the factors, competencies and the characteristics of a successful project on typical Ghanaian construction industry. The first objective was to identify the critical success factors in construction project delivery. Number of factors was discovered from the existing literature, some of which include in the order ranking, the first ten (10) factors after analysis was conducted;

Effective quality assurance culture, adequate communication among all project participants, Availability of resources as planned throughout the project, Adequate funding, Detailed project planning, estimations and scheduling, Conducive work culture and environment, Adequacy of design details and specifications, High degree of trust shared by project participants, Availability of experience and Professionals and skillful team.

The second objective was to identify the significant competencies of a project manager that contributes to the project success. The researcher further classify the competencies into groups of four namely; Administrative experiences, Human relation skills, Leadership skills and Technical skills in the order their ranking after the analysis was conducted.

5.4 CONCLUSION

This study explored the set of factors to consider in selecting a project manager which can help address poor and underperformance within the construction industry.

The critical success factors identified represent best practices that are critical to improve performance. Ten (10) factors have been ranked as the critical success factors for project managers in Ho in the Volta region of Ghana.

(1) Effective quality assurance culture

(2) Adequate communication among all project participants

(3) Availability of resources as planned throughout the project

(4) Adequate funding

(5) Detailed project planning, estimations and scheduling

(6) Conducive work culture and environment

(7) Adequacy of design details and specifications

(8) High degree of trust shared by project participants

(9) Availability of experience, professionals and skilful team

(10)   Developing an appropriate organizational structure and design

Results shows that the administrative competencies of a Project manager are highly significant followed by human relation skills. Thirdly ranked are leadership skills and finally the technical skills.

5.5 LIMITATION OF THE STUDY

The main challenge to this study was retrieving the number of questionnaires distributed. Thirty-two number of the questionnaire received contribute to sixty-four percent (64%) while the one not received contributed to thirty-six percent (36%). Another challenge to this research was getting the required number of project manager to attend to the questionnaire. From the analysis, four (4) out of the total number of the questionnaire received respond by ticking the space provided against a project manager. Since the research was carried out on project managers, majority should be project managers.

5.6 RECOMMENDATION OF THE STUDY

1. The researcher is recommending to both consultants and contractors in the construction industry to employ a project manager who possesses adequate field knowledge.

2. As a project manager, quality should be number one (1) priority.

3. Adequate communication among all parties on a project must be promoted by every member involved.

4. Detailed project planning, estimations and scheduling should be developed and updated during the progress of works.

5. Where ever a project manager finds him or herself, the culture of the people should be considered.

6. A critical factor such as adequacy of design details and specifications should be well specified and well noted in the contract document

7. Trust is like an egg and when felt and broken, difficult to be restored. Hence high degree of trust shared among project participants should be encouraged.

5.7 RECOMMENDATION FOR FURTHER STUDY

The researcher proposed further studies to be carried out on how effective and efficient a project manager can be on a construction project in order to meet clients and other stakeholder's satisfaction, overall performance, within budget and timing. Again, further studies can also be carried out on how positive or negative the critical factors can affect construction project delivery.

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APPENDICES

APPENDIX 1

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF ARCHITECTURE AND PLANNING

DEPARTMENT OF BUILDING TECNOLOGY

ISTITUTE OF DISTANCE LEARNING (ACCRA CENTER)

QUESTIONNAIRE

The questionnaire gives you the opportunity to express your views about the critical success factors and competencies of an effective project manager in the Volta Region of Ghana. Your responses will be totally valid. The result will be used as to provide sound recommendations to industries and decision makers regarding the key project manager's competencies that have most influence on project success. Please freely express your view and be assured that your feedback is sincerely appreciated.

The researcher is researching into: *THE CRITICAL SUCCESS FACTORS OF AN EFFECTIVE PROJECT MANAGER.*

(The investigation is for academic purposes only and any information provided would be treated as strictly confidential)

Please tick (/), Circle or complete where appropriate

SECTION A: DEMOGRAPHIC DATA

1. Sex   a. Male ( )   b. Female ( )

2. Age a. 21- 25 ( )   b. 26 – 30 ( )   c. 31 – 35 ( )   d. 36 – 40 ( )   e. 41 and above ( )

3. Marital status a. Married ( )   b. Divorced ( )   c. Single ( )   d. Others specify ……

4. Profession/Occupation a. Project Manager ( ) b. Consultant ( ) c. Contractor ( )

   d.Quantity Surveyor ( ) e. Others specify ………………..

5. Qualification a. HND   b. First degree ( )   c. Second degree ( ) d.

   Professional(PMP) ( ) e. Others specify ………………..

6. Experience a. 1-5 years ( ), b. 6-10 years ( ) c. 11-15 years ( ) c. 16 and above ( )

7. Religion a. Christianity ( ), b. Muslim ( ) c. Traditional ( ) d. Others

   ………………

SECTION B

Below are factors that contribute to critical success for any construction projects. Rank on the Likert scale of 1-5, Please tick[√] the appropriate boxes provided to express your opinion.

1 = Not very often   2 = Not often   3 = Not sure   4 = Often   5 = Very often

No.	FACTORS	1	2	3	4	5
1	Adequate communication among all project participants					
2	Effective quality assurance culture					
3	Top management support and commitment to the project					
4	Availability of advanced technology/construction equipment					
5	Detailed project planning, estimations and scheduling					
6	Frequent project monitoring/progress meetings					
7	Implementing an effective health and safety programme					
8	Managing and control of subcontractors' work					
9	Adequate funding					
10	Administration and leadership					
11	Availability of resources as planned throughout the project					
12	Strategic and detailed procurement process					
13	Clearly defined goals/objectives and scope					
14	Effective project risk management system and process					
15	Availability of experience, professionals and skilful team					

16	Effective allocation and control of workforce					
17	Effective project team formation					
18	Effective site management, control and coordination					
19	Team leader/PM Knowledge/experience and skills					
20	Adequacy of design details and specifications					
21	Contractor's experience					
22	Staff motivation and satisfaction					
23	Establishing an effective document control system					
24	High degree of trust shared by project participants					
25	Conducive work culture and environment					
26	Adequate career development programs					
27	Adequate technological knowledge and transfer					
28	Adequate trainings and skill development programs					
29	Clarity of strategy, roles and responsibilities					
30	Developing an appropriate organizational structure and design					
31	Effective contract management system					
32	Effective management of project meetings					
33	Implementation of learn principles					
34	Analysis of information and knowledge management					
35	Team members commitment and productivity					
	Please state if any					

SECTION C

The significant competencies of a project manager on your project are indicated in the table below. On a scale of 1–5. Please tick [√] the appropriate boxes provided to express your opinion.

1 = Not very often   2 = Not often   3 = Not sure   4 = often   5 = very often

No	COMPETENCIES	1	2	3	4	5
A	**HUMAN RELATION SKILLS**					
1	Capability to motivate people					
2	Team building					
3	Integrating team members					
4	Communications					
5	Conflict resolution					

B	LEADERSHIP SKILLS					
1	Clear leader and director with authority					
2	Capability to plan and elicit commitment					
3	Problem identification and solving skills					
4	Balance technical, economics and human factors					
5	Decisive decision making					
C	TECHNICAL EXPERIENCE/ SKILLS					
1	Understand technology					
2	Knowledge of tools and techniques used on the project					
3	Applications and methods					
4	Technical evolutions					
D	ADMINISTRATIVE EXPERIENCE/SKILLS					
1	Planning					
2	Organizational skills					
3	Knowledge and understanding of estimating systems, cost control, scheduling control, quality and safety					
4	Procedure development and implementation					

SECTION D

In the table below are the characteristics of a successful project.

On a scale of 1 – 5, please tick [√] the appropriate boxes provided to express your opinion.

1 = Not very often   2 = Not often   3 = Not sure   4 = often   5 = very often

No	CHARACTERISTICS	RANK				
		1	2	3	4	5
1	Meeting project's overall performance; functionally, budget and timing					
2	Completion on time					
3	Customer and stakeholders satisfaction					
4	Project team's satisfaction					
5	Meeting user and quality requirements					
6	Meeting project's purpose					
7	Within scope					
8	Reoccurring business with the client					
9	Within budget					

THANK YOU VERY MUCH