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Assessing the Impact of Project Management Applications on GETFund Projects.

A Case Study of Wa Municipality

By

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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, except where due acknowledgement has been made in the text.

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ABSTRACT

This study was undertaken to assess the effect of applying project management knowledge areas on the success of projects using GETfund projects in the Wa Municipality as a case study. The assessment of the success of the project was determined by using three indicators, which were cost, schedule and quality achievements and these indicators were used because they are broadly used in every sector in managing projects and is understood by different kinds of practitioners in various fields. In order to obtain data for analysis, survey questionnaires were drawn and distributed to project staffs of GETFund in the Wa Municipality. The data collected was used to assess the degree of significance of connecting several project management application areas in order to achieve better project performance in terms of cost, schedule and quality. Analysis of the effect of project management applications on the success of the projects was undertaken using descriptive data analysis and using social science package software version 20 to identify the correlation between the importance of applying project management applications and the success of the project. The major outcomes extracted from the study were that it was essential to connect the several project management applications to achieve greater success on a project. It was again made known that all the application areas of project management were important in achieving greater success on the project. However, the significance of the application areas are not the same with cost management having the highest significance and followed by scope management. The impact of the application areas in achieving the planned schedule was discovered to be lagging behind cost and quality performance. It was discovered that the use of project management application areas turn to have a positive effect on the success of the project and by so doing enhancing the success of the organization. The research gave further suggestions for enhancement of the use of project management application areas and also suggested that more project performance indicators should be developed in other studies. Lastly, suggestions were made on subjects for further research on the impact of project management application areas on the success of projects in all government project-oriented organizations in addition to GETFund.

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DEDICATION

I dedicate this research work to my lovely Wife and Children and all my friends and above all, to the Almighty God.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

The long-term survival of any organization is to a certain extent dependent on management's ability to develop and implement corporate strategies in harmony with its ever-changing environments. Furthermore, it is stated that the strategic alignment between an organization and its environment is usually effected through projects such as investments, new products, internal re-organization, and etcetera. The escalating resource constraints faced by organizations require the implementation of project management methods that will maximize the proportion of successful projects, (Smith, 2002).

Nowadays organisations are looking for better ways of attaining profit and becoming stronger and capable of competing with their counterparts in business. This has led to the investment of resources by organizations to enable them perform better than their counterparts. Lately, project- oriented organisations are undertaking complex projects in unfavorable areas and circumstances. These include coming out with new products, buying of services from sellers, implementation of innovative policies regardless of their old effective systems among others are the major project initiatives companies must manage. Towards this end, implementation of projects in project- oriented organizations are undertaken daily using the several project management application areas by different project managers. Particular goals are supposed to be met on completion of the project. The power to be able to implement projects successfully is what enables the project meets its expectations or requirements to the satisfaction of customers. For companies to implement successful projects, they would normally apply project management application areas in order to achieve the expected results.

Knowing that the application areas of project management have a strategic effect on projects, companies are urged to use the application areas in such a way that the progress and uncertain effects of the projects could be measured. By so doing the projects being executed can be assessed as to whether or not they meet the objectives of the organization as a whole. This will help improve the performance of the project as well as the organization (Millicent, 2012).

The goal to meet the planned cost, schedule, and quality of a project is normal to every project and are given the highest priority or attention in every project so as to measure the success of the project using them as success metrics (Belassie & Tukela, 2008; Walker, 1999). The application areas of Project management have been used and proven by professionals in the industry for some years and the application areas have been reviewed, improved and documented (Karima, 2014).

The GETFund was established on 25th August, 2000 when ACT 581 which established it received Presidential Assent. The Fund started operation in 2001. The Ghana Education Trust Fund (GETFund) is a public sector agency established by an Act of Parliament to assist nation-wide with financing of education; to provide for the management of the fund and to provide for related matters (Nonagon, 2018). GETFund undertake various projects in the educational Institutions across the country. Many of the projects include classroom blocks, dining halls, libraries, laboratories and dormitories.

1.2 STATEMENT OF PROBLEM

This study was mainly conducted to know the application areas in project management that best fit GETFund projects environment and can positively affect the success of the

project. GETFund need project management applications because of the small number of resources to maximize the success of the project in terms of meeting organizational objectives within schedule, cost and quality. The project management discipline have grown in the past few years but researchers turn to study its application in the developed countries. Managing projects in developed countries and multinational organizations is not the same as doing so in developing countries. The challenges faced by managing projects in a developed country is different from the challenges in a developing country most especially governments project. Most researches have focused on the projects in the capital cities of countries and cities with big economies and growing infrastructure. This study is intended to assess the impact of project management applications on GETFund projects in the Wa Municipality which is a small city in Ghana, though is the capital city of the Upper West Region.

1.3 PURPOSE OF STUDY

The main aim of this study is to assess the effect project management application have on the success of the project in terms of meeting the planned cost, planned schedule and the expected quality of projects executed by GETFund in the Wa Municipality.

1.4 OBJECTIVES

The objectives of this study were:

1. To determine the importance of connecting several project management application areas to achieve higher project performance.
2. To determine which project management application area will greatly affect the success of the project.

3. To identify the effectiveness of project management application areas in terms of cost, schedule and quality on the success of the project.

1.5 RESEARCH QUESTIONS

For the research to achieve these goals, the questions below emerged:

1. How relevant are various project management application areas coordinated to achieve higher project performance?
2. What project management application area is being used by GETFund that is greatly affecting project performance?
3. How effective is project management application in terms of cost, schedule, and quality performances on the success of the project?

1.6 JUSTIFICATION

Studies in the discipline of project management is of great importance to professionals in the private and public organizations. The use of project management application areas in the private sector and the public sector is becoming a problem that needs to be tackled in the developing countries in which projects that are of varying scales are being executed. This research seeks to prove to decision makers that the use of project management application areas as a basic tool for managing public and private projects will help increase the performance or success of the project.

Government institutions: The main goal of this study is to advocate for the use of project management as a tool for managing projects for government entities that can enable them to effectively use government resources to better serve the general public.

Researchers and students who may want to seek more knowledge in the project management discipline, will benefit from this research because of the significance of its concept being outlined in it.

1.7 SCOPE OF STUDY

Many factors affect project performance hence the emphasis here is on the impact of adopting some of the project management application areas, which is mainly focused on GETFund Projects being implemented in the Wa Municipality.

The goal; it excludes other emerging performance indicators that measure project performance. At GETFund our scope is limited to its construction parts, especially the execution of construction projects.

1.8 RESEARCH METHODOLOGY

The Research study used a quantitative research design. These design was particularly suitable for this study due to the opportunity it gives the researcher to dig down into a problem within a short time (Bella, 2001).

Quantitative data was utilized in this research on the effect of project management application on GETFund projects and their effects on project performance was collected using survey questionnaires. Then Project Management Practice' influence on measured performance of the completed project case will be determined by quantitative analysis methods such as descriptive and reasoning analysis. Project performance measurement data and practical results will be obtained through questionnaires. Therefore, by using Statistical Package for Social Sciences the data collected using the questionnaire will be analyzed and presented to show the impact of project management applications on GETfund projects.

1.9 ORGANIZATION OF RESEARCH

The first chapter is introduction which talks about research reasons, research objectives, research issues, research significance and summary of what is to be done to conduct the research.

Chapter 2 reviews what have been done by other researches in other part of the world that have been completed and determines what these research goals are and find out the findings and loopholes in those papers, to help conduct the new research.

Chapter 3 talks about the methodology that was used to undertake the study. It reveals to the reader the various activities that the researcher went through to achieve his aim. The chapter also talks about the instrument that was used to collect the data that was used for the analysis.

Chapter 4 talks about the information that was extracted from the data collected using the research instrument and analyzed in accordance with the objectives of the study.

Chapter 5 will highlights important findings

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The papers that were summarized by the researcher in this chapter help the research to better understand the project management application areas by explaining the idea behind project management applications and evaluating their effect on the success of the project. Therefore articles on the concept of project management practices and its effect on the success of a project has been looked at in this chapter. The project management practice has its source from the PMI constituted book of knowledge on project management (PMBOK).

2.2 PROJECT MANAGEMENT CONCEPT

PMI describes a project as a temporary endeavor undertaken to produce unique products, services or results (PMI, 2017). Project is always defined as a temporal endeavor where the temporal means it has a fixed start date and closing date. All projects are executed to produce a product or service but when the project does not produce that deliverable or service and is terminated the project is termed to have been completed but not successful. A project is a temporary activity or group of activities with a known beginning and closing date, normally limited time, and normally subject to financing (Retchard, 2008), designed to achieve outstanding aims and objectives (Sebatian, 2010), usually to come up with beneficial changes or add value to an organization. The time bound characteristic of the project is in stark contrast to routine or day to day activities (Dinsmor, 2006), which are repetitive, constant day to day tasks to create deliverables or service. In application, the administration of the two

environments is usually completely in sharp contrast, so different technical skills and management strategies need to be developed to manage each of the two systems.

Where PMI. (2013) refers to a project as an effort, Saleh et al. (2002) define it as a temporary organization within the organization. PMI also recognizes this nature of the project because they identified that the project squad rarely exceeds the duration of the project. PRINCE 2, representing efforts in a controlled environment is a broadly used and recognized project management approach, also outline definitions of endeavors that appear to integrate the descriptions above; it is a temporary organization that requires the use of predetermined resources to create unique predefined results or products at pre-specified times. Government Commerce Office (GCO), (2002).

2.3 PROJECT MANAGEMENT PRACTICE - KNOWLEDGE AREA AS PRACTICE

Project management practice refers to the best methods accepted by the project management discipline to meet a set of goals or objectives; through research and application, there is evidence that there is a tool, method or approach that is more effective than other techniques, strategy or approach in implementing a project to produce specific results (PMI, 2004).

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work 4.4 Manage Project Knowledge	4.5 Monitor and Control Project Work 4.6 Perform Integrated Change Control	4.7 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Schedule Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Durations 6.5 Develop Schedule		6.6 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Manage Quality	8.3 Control Quality	
9. Project Resource Management		9.1 Plan Resource Management 9.2 Estimate Activity Resources	9.3 Acquire Resources 9.4 Develop Team 9.5 Manage Team	9.6 Control Resources	
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Monitor Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses	11.6 Implement Risk Responses	11.7 Monitor Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Engagement	13.3 Manage Stakeholder Engagement	13.4 Monitor Stakeholder Engagement	

Figure 2.1: PMBOK Overview Knowledge Areas and Processes Source: PMI (2017)

The Project Management Institute (PMI, 2017) came out with their personal project management process and talks about ten key areas of knowledge that are common to all projects, regardless of the approach used which are shown in Figure 2.1. The areas are: project integration management, project scope management, project schedule management, project cost management, project quality management, project resource management, project communication management, project risk management, project procurement management and project stakeholder management (PMBok, 2017).

2.3.1 Project Scope Management

Kerzner (2010) defined the scope as determining the work required for the project to be established and prioritizing the results of those needs; that is the scope of the project is the sum of the project requirements. Although it is possible to investigate the scope from why the project is being undertaken, it is also necessary to recognize the required work, results and products. Brandan (2009) refers to scope as what project task is supposed to be implemented based on the interested outcomes or products. Cugansan et al. (2011) also attested what Brandan said about scope, and said that scope definition indicates that each activity is implemented using a group of products within a specific duration, and before closing of the project, there is a list of scheduled work packages to be executed before the project can be closed. PMI (2017) defines scope management as the process required to ensure that the project contains all the work required and only the work required to successfully complete the project. It further points out that project scope management mainly involves defining and controlling the content and only the content contained in the project. PMI (2017) shows that the following listings can be considered as project scope components: project and product objectives, product or service requirements and characteristics, product acceptance criteria, project

boundaries, project requirements and deliverables, project constraints, project assumptions, initial projects organization, initial defined risk, planned milestones, initial Work Breakdown Structure (WBS), order of magnitude cost estimate, project configuration, management requirements and approval requirements.

2.3.2 Project Cost Management

PMI (2017) refers to project cost management as the processes needed to make sure that the project is executed within an approved budget, including planning of resources, cost estimation, budgeting of required tasks, and cost allocation and controlling of the individual task within the project. Langfield-Smith et al. (2006) defined project cost management as increasing the cost-effectiveness of an organization by understanding and managing the real causes of costs in the project lifecycle. They believe that while the main focus of cost management is cost, it also strives to improve other aspects of performance, such as quality and delivery. Dury (2010) defines project cost management as the action taken by the project manager to reduce project costs, resulting in more effective and productive processes with significant reduction in expenses, procedures improvements and in perfect case, reduce project expenses and maximize customer satisfaction. Hilton et al. (2001) pointed out that it is a concept that seeks to improve customer value and reduce costs, an attitude that management decisions are the source of all project costs and a set of reliable technologies that can increase the worth of the project and reduce project expenditure. From a study conducted by Hansen and Mowen (2003), cost management can identify, collect, measure, classify, and report information that is needed by managers in budgeting, planning, controlling, and for taking decisions.

For the purposes of this study, project cost management is defined as the action taken by the project manager to estimate, allocate, and control costs in the project.

2.3.3 Project Communication Management

Project Communications Management consist of the processes needed to make sure that the information needs or requirements of the project and its stakeholders are met by developing plans and approaches and implementing activities that are designed to achieve effective information exchange (PMI, 2017). Project Communication Management is a field of knowledge that uses the processes needed to make sure the timely production, collection, dissemination, saving, retrieval and final disposal of project information, (PMI, 2017). Guard (2012) describes it as the organization and checking of information sent through any channel to meet the communication requirements of the project, including transmission, filtering, receiving, and using the skills appropriate for the project environment to interpret or understand the information. According to PMI (2004), project communication involves planning, implementing, and controlling the acquisition and dissemination of all information related to the needs or requirements of all project stakeholders. Information comprises of project status, accomplishments, events that may affect other stakeholders or projects, and so on. Herkens (2002) also stated that, the main project communication management consist of planning communication - identifying the information needs i.e who need what information and how does he want it to be transmitted to him and through what channel and at what time.

PMI (2017) introduced three project communication management processes, including planning communication, manage communications and monitor communications.

2.3.4 Project Risk Management

Risk management is very important to the extent that organizations and individual researchers are becoming interested in it because of industrialization and competition in the global world nowadays (Ahmad et al., 2008). The risk management procedure comprises of a string of processes to establish background, identify, analyze, evaluate, process, monitor and communicate risks to continuously improve performance (Standards Austria, 2002). Project risk management is an established strategy for identifying, assessing, and prioritizing risks, and then planning resources and strategies to respond to each risk in order to reduce its probability of occurring and the impact it will have if it has to occur. (Smitt & Meritt, 2003). PMI (2017) describes risk management as a methodical process of identifying, assessing, and reacting to uncertain events on projects. It consists of increasing the frequency and impact of positive risk and reducing the frequency and impact of negative risk.

2.4 PROJECT MANAGEMENT APPLICATION AND PROJECT PERFORMANCE

Project performance is determined by three factors: cost, schedule and quality performance (Mulla, 2006). Since the project is done by the team, one metric of measuring success is the satisfaction of the project members who are working as a team (Dorlen et al., 2006). Productivity is highest in achieving predetermined goals and achieving planned budget; while, effectiveness is related to satisfaction measurement (Dire et al., 2009). Relying on this research work, it can be seen that, project performance is determined using two structures: project productivity and project efficacy. Where project productivity means: achieving the planned schedule and

budget. Project efficacy: means achieving the standard or criteria the customer and team expected.

Project management has turned out to be a unique approach of managing large projects in organizations today (Filippo & Moe, 2011). The adoption of project management application areas is gradually gaining root as an approach for enhancing the performance of projects in a project oriented organization by implementing successful projects (Raji, 2010). Most importantly, project leaders are at the forefront of ensuring customers' expectations are met (Kersila et al., 2008), thus emphasizing the importance of project management applications in project success.

Dire et al. (2009) stated that the organization has gotten to the level that the task of improving organizational performance needs centralized board attention, and this can only be achieved by the ability and commitment of our 11 organizations and knowledgeable project teams to adopt project management applications. The organizational performance of project oriented organization requires an in-depth understanding of how strategies, structures, activities and application areas of project management relate with each other (Filippo & Moe, 2011). Most projects that are initiated for a business purpose, sets its targets on greater outcomes and organizational performance (Shennar et al., 2002).

The growing demands on organizational performance and the stress in coming out with more productive methods are the essence for increasing interest in project managers through the use of project management application areas.

2.4.1 Relevance of Project Scope Management and Project Performance

Defining and managing the scope of a project can affect the overall success of the project (PMI, 2004). In the process area that controls the scope of the project, PMI believes that it involves factors that influence the scope of the creation of the project and the impact of these changes. In addition, scope management is the aspect of project management that make sure that requested changes are done through the change control board. An essential aspect of scope management is that the scope management knowledge area is responsible for managing definite project changes, not connected to those in charge of changes, and combining changes with other control processes (PMI, 2017). They also pointed out that changes that get out of hands of the project manager are normally called "scope creep." it is a bad outcome of a poorly managed project, that normally results in issues on the project or the cause of the project failure leading to reduced organization profits (Dakkers & Forslius, 2009).

2.4.2 Project Cost Management and Project Performance

There is growing interest in understanding the profitability and cost of an organizations productivity and finally organizational performance (Dury, 2010). Dury (2010) pointed out that project cost management has a positive impact on how positively projects performed because all companies that financially sound adhere to rigid cost control procedures. Cost is used as a key indicator to measure the success of a project and increases the organization's performance in increasing gains (Mulla, 2006). Project cost management enhances the chances of a project becoming successful in terms of improving how resources are used and reducing risk (Cimel et al., 2010).

2.4.3 Project Communication Management and Project Performance

About 60% of projects end up not being successful due to absence of better, communication management plan (PMI, 2017). Projects with poor communication between project team and stakeholders do not achieve the goals or objectives set at the beginning, which may be as a result of overspending and/or late completion. Therefore, project communication management is a way of solving that problem to achieve the aim of the project, thereby completing projects within the budget and improving organizational performance (PMI, 2017). Herkens (2002) speaks about the fact that documenting and communication are a normal integration because they combine projects from the beginning to the end and ensure that information dissemination enables project stakeholders to get the information they need at the right time. Continuous and productive communication within and outside the project is recognized as very important and critical factor in ensuring that the project complete successfully. It is recognized as a need to do the correct thing in the right way. Since knowledge is seen as power, it is vital to believe that sharing of knowledge aid in enhance the knowledge of every stakeholder in the project to gain their support, which in turn improves project performance (Kerznar, 2011). At the end of the project, an end report will be submitted to complete the project in the presence of all stakeholders and used as a lesson learnt for new projects that will be executed sometime to come.

Kerznar (2011) emphasizes that the success of a project relies to a large extent on productive exchange of information with most project management time spent on communication, which is necessary to improve organizational performance.

2.4.4 Project Risk Management and Organizational Performance

Risk and its management are the main focus of all companies, especially project oriented organizations that are specifically reactive to competition and operational risk (Watty, 2009). In project oriented organizations, the risk management task typically consists of an evaluation of the threats and opportunities associated with the project (Watty, 2009). Howall et al., in 2010, said that a prudent management of risk includes making sure projects are completed successfully, customer satisfaction and other aspects of improvement, and improved the financial performance of the organization. In order to properly manage the project, it was important to identify, assess and control the identified risk by ensuring that it is completed on time and for the entire profitability of the organization (Howall et al., 2010).

2.5 PROJECT PERFORMANCE MEASUREMENT

This study describes project success as a measure of the projects approximation by assessing the application of project management on the project in an adaptable way by identifying which approach is good for every peculiar project. Gross project performance is determined based on how each activities on the project perform in terms of cost, schedule, and quality performance. Two major studies have developed formulas to measure project performance; Chan and Chan (2006) have utilized major performances metrics in their research into the use of KPIs to measure the success of a project. Among other things, four main areas identified formulas for measuring project performance. The selected area represents the size used for the measurement

2.5.1 Effect of Schedule Performance

Schedule performance is described as the time taken to complete the project. But project always encounter hindrances. In the research paper of the Kenya Institution of Chartered Surveyors (KICS) (Morlidge et al., 1998), information on 216 completed commercial and industrial projects were collected and 63% of the projects were found to be completed late. It has been argued that late completions are as a result of unfeasible expectations of customers over the timeline of the project in the pre-construction phase. Ward and et al (1995) also found that customer time expectations are usually based on their own similar work experience or the advice of an “expert advisor”. This behavior by the client may indicate whether the project consultant's recommendations have been complied with or rejected, and because they have been formally hired as leadership management projects. In the case of a project consultant who is considered to be a project management expert, the role of construction time may have a different impact on project performance. Therefore, what each stakeholder (client and Contractor) does have an effect on project performance.

Data collected in relation to the impact of time overruns on certain variables in commercial projects by using web-based tools and sent to the CEOs of 100 randomly selected construction organizations, came out that, the delayed in progress payment was a major reason for construction time exceeding the estimated schedule (Choudhary & Phatok, 2006). Despite, the nature of the funds and the attributes of the source, i.e. the primary areas of payment, schedule determined primarily by the construction project, require a vivid research in order to develop some application methods that result in payment of funds.

Delay in release of funds has been determined to be the cause of overtime on construction projects. To achieve a high schedule performance the project manager of the contracted organization has to have the power to deal with the delay in the release of funds for the project. Therefore, there is a need to determine how contractors are involved in managing project time. In a survey of construction schedule performance in Australian construction projects, Walker (2002) determined some factors that affect schedule performance. They are the productiveness of the customer implementation team, the productiveness of the construction management members, and the list of work that are to be executed. This makes it necessary to come up with some features of the project management members; their knowledge, abilities, competencies, and skills.

2.5.2 Impact of Cost Performance

Cost performance is described as the extent to which when everything is working as planned the project complete according to the approved budget (Babushit & Almahawis, 1996). It comprises the total cost of starting of the project to the completion. This highlights the importance that must be attached to each project management activity completed at each stage of project development. Chan and Chan (2002) also believe that the cost is not limited to the bid amount, but also the total cost of the project from the beginning to the completion, including any costs incurred due to changes in the construction period. These cost variables indicate some additional applications during the engagement process. The project management process will have a direct and indirect impact on project cost performance.

It is an important practice for consultants to issue the number and manner of change orders during construction. Customers who often develop a large number of design change habits before they actually complete will also play an important role in

influencing project costs. The manner in which the contractor responds to the change order may also have an impact on project performance. In forecasting the performance of design - construction and design - bid – build projects, Leng et al. (2003) pointed out certain variables that have an impact on how cost performs on a project. These are, the quantity of repeating items included in the project, the degree to which the plan of the building is completed at the time of bidding, and the extent of money given to the contractor.

The customer's behavior toward spending of the financial resources will help to know if the customer will follow the designer's counsel on the cost advantages of having repeated elements in the design. How the contractor usually chooses (always go through tough competitive bidding or restricted bidding) will help to know the type of contractor used to execute the project.

The existence of certain features in a particular contract also has a long way to go to determine the type of contractor that will bid for the job and ultimately win. For example, the availability of certain facilities (such as pre-mobilization paid by the customer) in a given construction contract may be contractors with low contractor funding levels or low project pre-financing capabilities. How financially stable the contractor who won the contract will have an impact on the project achievements.

2.5.3 Impact of Quality Performance

Quality performance is described as “all functions needed to meet a specific requirement; suitable for the purpose (Prafit & Sarvido, 1998). The degree of monitoring of the project, the experience of the project consultant, the quality and past performance records of the contractor (Kashiwaga & Palmar, 2006) and a lot change

request that are implemented on the project also have an impact on quality. How to effectively coordinate these components will be related to achieving satisfactory quality performance.

It is the responsibility of the project management team leader to make sure that these components are better combined to produce high quality achievement. Quality performance is recognized as a functional process of the methods employed in the course of the project (Sarpell & Alarcán, 2000). These methods include the idea of procurement and the procedure of bidding to the last stage, which will make the project a successful one. The focus is on the processes and methods that affect the quality aspect of the project. The ensuing problem was that the project manager had a degree of customization to the distinctiveness of each project, adapting the knowledge areas of project management to the distinctiveness of a project to produce achieve high quality. In the article on the components affecting the quality performance of the project, Chann and Tom (2002) used factor and stepwise regression analysis to determine that the project team's project management applications are the most powerful predictors of customer satisfaction with quality. Therefore, it is necessary to emphasize the project management applications commonly used by project management team members in order to manage the quality of the project.

2.6 DECREASE IN ORGANIZATIONAL PERFORMANCE AS A RESULT OF POOR PROJECT PERFORMANCE

In Ghana, there were performance issues with most projects, and some factors that led to this situation included the customer, who released funds for construction projects from time to time Baiden-Amissah (1999). Amoah-Mensah (2005) mentioned the delayed payment by customers when studying the role of quantitative surveyors in

Africa on the NEPAD agenda and also shallow scope of work outlined in contract and poor performance evaluation were the challenges for the successful implementation of the project. When assessing how the Government Common Fund (GCF) project has performed, it was found that the failure rate of most projects was high. A key finding that was discovered was the main shortcoming of the high performance of World Bank-funded project, namely the delayed given of project fund. The construction sector is always tagged with continuous delays, overspending and building collapses (Mensfield et al., 1998). In spite of this, Kashiwaga and Palmar (2006) proposed future projects should use the experience from past projects as indicators to plan for the performance of the new ones. Xioa and Provebs (2005) also believe that how contracts perform have an effect on the success of construction projects, because they turn what is on paper to what is on the ground. The problem projects were performing poorly was linked to the application areas of project management and how it affects the organizational performance must be determined. Neglecting key project management applications can lead to poor project performance, resulting in customer dissatisfaction, business loss, and poor organizational performance.

2.7 CONCEPTUAL FRAMEWORK

From the paragraph before, defining the theoretical framework, there was the need to develop a conceptual framework for which the application areas of project management were considered as the independent variables in the project management knowledge domain (PMI, 2017). The structure emphasis on four knowledge areas of project management: which are project cost management, project risk management, project communication management and project scope management, and the effect these knowledge areas have on the performance of the organization.

Independent variable: dependent variable:

(Project Management Practice) (Organizational Performance)

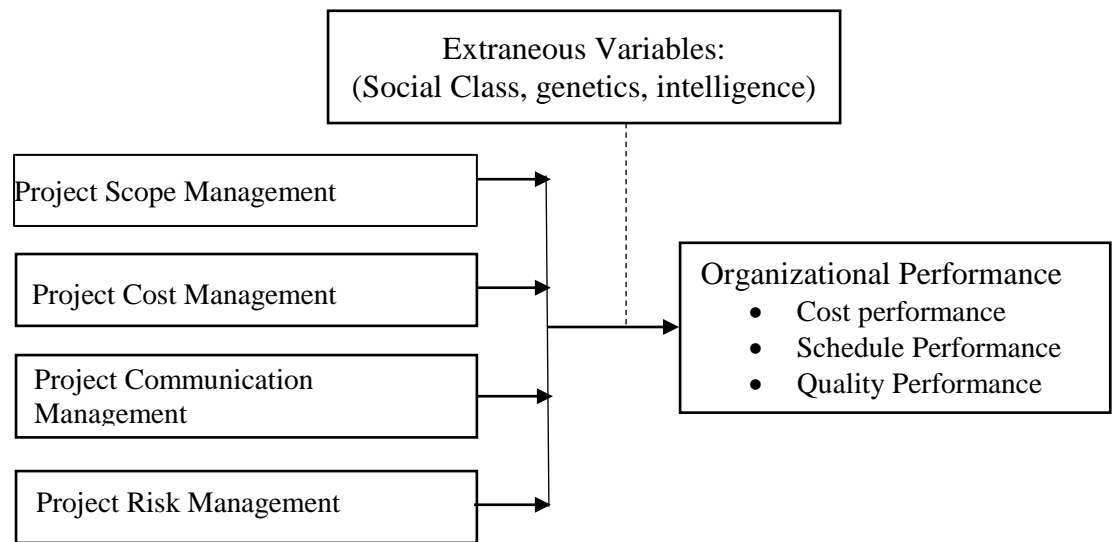


Figure 2.2: Conceptual framework. Source: Millicent (2012)

From the suggested conceptual framework in figure 2.2, project management applications areas, that are cost management, communication management, scope management and risk management, are designed to effectively manage projects and make the project successful by recording outstanding cost performance, schedule performance and quality performance, thereby enhancing the organization Performance. Each project team member has a feature in the project management process. The combination of these applications produces a series of evolutionary applications throughout the life of the project. By adopting these practices, an environment is created in which everyone in the project knows what is to be done and how to measure the success of the project. This prevents the unpredicted events that always flow through projects as they near the closing dates. This method combines the expected end results or products of the project and clearly shows the contribution to organizational performance results.

2.8 CHAPTER SUMMARY

Project management application means managing and executing daily activities and decisions of a project to meet the goals of the project. As emphasized by (Hobday, 2000) these applications may vary from companies to companies. This is especially true for large organizations and SMEs. This requires identifying the connection between project management application and the success of the project. The performance of a project is recognized as the success of the project, which is also related to organizational goals and performance. Therefore, organizational performance is determined by some indicators which are attributed to the goals of the project. Project performance metrics include cost, schedule, quality, end-user benefits, national infrastructure benefits, environmental impact, and health and safety expectations or need. In this study, the three basic projects goals that were taking into consideration as a criteria for measuring the performance of project are, schedule, cost, and quality. These factors are recognized as the primary indicators for examining the success of the project as well as the performance of the organization.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter introduces the main points like the research design and method that will be used to conduct the research. The study used a methodology framework that formed a theoretical basis using quantitative methods. Method for collecting data and the instruments that was used for the research was developed from the objectives of the research.

This study investigates the impact that project management application areas have on the success of the project or on the performance of the project. Data collection strategies have been tuned to confirm and refine the emerging framework; this procedure is all inclusive and interactive. After completing the research work, a more orderly and full analysis of the data was performed.

3.2 RESEARCH DESIGN

The study used quantitative research designs to conduct the research. It was the appropriate research design for this study particularly due to the fact that it is easy to use and within the shortest possible time can be used to find a solution to a problem. (Bella 2001).

Quantitative data was collected on the project management application areas and was arranged into classification statements and assign numbers (ranks) so as to quantify the performance of GETFund projects. Therefore, the impact of project management application areas on the success of completed GETFund projects was determined by quantitative analysis methods.

3.3 TARGET POPULATION AND SAMPLE SIZE

The population under study were 38 employees of GETFund Project office in the Wa Municipality, and all the 38 people were sampled for the research. They comprised of the following: 4 consultants, 10 project managers and 24 project team staffs. These project office staffs were chosen based on their interaction with the company's projects.

3.4 SAMPLE TECHNIQUE AND SAMPLING PROCEDURE

This research used census sampling for obtaining the sample size. This was because for a small population like this, all participants have to be taken into consideration, which makes this sampling tool more appropriate for this study as compared to other sampling methods (Benard, 2004, Lesly & Sherpad 2009). Knowledge of the project management discipline is vital; this necessitated the involvement of personnel from the project office of GETFund who are in charge of GETFund projects in the Wa Municipality in the research. They include consultants, project leaders and project team members.

3.5 DATA COLLECTION INSTRUMENT

The primary tool that was used to obtain data on the effect of project management application areas on the performance of the project was the questionnaire. It is the most suitable instrument because it allows researchers to gather data from samples with different backgrounds; the results are still confidential, saving time and appearing in paper form with no chance of being bias (Kumbo & Trump, 2008).

3.6 DATA COLLECTION PROCEDURE

This study was undertaken after authorization from the Kwame Nkrumah University of Science and Technology to proceed with the research on GETFund Projects in the Wa Municipality. The questionnaire was self-administered and the researcher gave the questionnaire to the respondents and inspires them to fill out the forms. The respondents filled out the answer in writing and the researcher collected the answer after the forms were complete. The questionnaires were collected one week later which ensured that the time to answer the questionnaires was sufficient for the respondents to provide all the information.

3.7 DATA ANALYSIS METHODS

Data was collected using the survey questionnaire and they were rearranged and entered into tables and analyzed using Statistical Package for Social Sciences. Data on impact of project management application areas on project performance comes from GETFund's employees and consultants working in the project management Office. Data analysis was performed by applying descriptive analysis (mean and standard deviation) and inference techniques using software SPSS 20. Pearson integral analysis was also used to calculate correlations to reveal the relationship between dependent variables and independent variables. The researcher showcased the collected information in the form of tables and percentages.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

This chapter examines the results of the study and focuses on the research, which is designed to identify the effect of project management applications on the performance of projects currently being undertaken by GETund. The research results focus on the following four areas to construct questionnaires corresponding to the research methods: first, to assess the importance of relating several project management applications; and also to determine project management applications that have a significant effect on how projects are fared; The last purpose is to establish the impact schedule, cost and quality performance of the project have on the overall project performance, and then analyze the effect of project management applications on how the project fared. Tabulation and percentages were used for data presentation. Consequently, survey results, inferential and descriptive statistics were adopted to analyze and discuss the results.

4.2 RESPONSE RATE

A total of 38 participants were contacted, but only 20 completed and returned the questionnaire, thus achieving a response rate of 52.63%. An acceptable response rate for such a sample would be 15, rendering the current response rate acceptable (Denscombe, 2014). From the 20 responses, all the 20 questionnaires were completed which provides a response rate of 52.63%.

Table 4.1: Constituents of participants

Position of participants	Frequency	Percentage (%)
Consultant	4	20
Project Manager	6	30
Project staff	10	50
Total	20	100

Source: Field data, 2018

From Table 4.1, there are 20 participants, including 4 consultants, 6 project managers and 10 project staffs, accounting for 20%, 30% and 50% of participants respectively.

4.3 INTRODUCTION TO PERSONAL DATA

Based on the questionnaire, questions 1, 2, 3 and 4 are intended to provide general information about the participants' level of experience, value of the projects they have worked and number of projects, as depicted in Tables 4.2, 4.3 and 4.4.

Table 4.2: Years of Experience

Years	Frequency	Percentage (%)
0-5	2	10
6-10	8	40
11 -20	9	45
More than 20 years	1	5
Total	20	100

Source: field data, 2018

Table 4.2 lists the level of experience of participants. The results showed that most participants worked 11 to 20 years, accounting for 45% of participants, and only one respondent with over 20 years of experience.

Table 4.3: Projects participants have been involved in before

Projects handled	Frequency	Percentage (%)
1-3	2	10
4-7	3	15
8-11	8	40
Over 11 projects	9	45
Total	20	100

Source: field Data, 2018

From Table 4.3 it was deduced that, 40% of the participants were involved in 8 - 11 projects within the last 5 years. But 10% of the participants were involved in between 1-3 projects.

Table 4.4: Average Cost of Projects

Average cost of projects (GH)	Frequency	Percentage (%)
below 1,000,000	2	10
5,000,000-10,(000,000)	3	15
11,000,000-50,000,000	14	70
More than 50,000,000	1	5

Source: Survey data, 2018

As can be seen from the GETFund projects, the average value of the projects handled by the participants ranged from 11 million to 50 million Ghana Cedis, accounting for 70% of the GETfund projects that has been handled by the participants in Table 4.4 above.

4.4 DESCRIPTIVE DATA ANALYSIS

Descriptive analysis was used to evaluate the correlation of variables computing for the mean value and standard deviation of both the dependent and independent variables.

4.4.1 Significance of relating the diverse project management application areas

In order to assess the significance of connecting the diverse knowledge areas of project management, several questions were provided in the questionnaire to seek for responses from the participants. Question five on the questionnaire was used to seek for the answer from the participants. The importance ranges from 1 to 5, with (1) = not important and (5) = very important.

Table 4.5: Importance of Relating Project Management Applications

Significance of relating project management application areas	Frequency	Percentage (<%)
Not Significant (1)		
Moderately significant(2)	2	10
Averagely significant(3)	1	5
Significant(4)	3	15
Very significant(5)	14	70
Total	20	100
Mean Value	4.43	

Source: Field Data, 2018

From Table 4.5, it was determined that 70% of participants expressed their view that relating project management application area is very significant. As can be concluded from the average value of 4.43, this indicates that it is important for participants to agree to link various project management applications to achieve greater project performance.

4.4.2 Impact of project management application area on the success of a project

In the study, four project management application knowledge areas were studied, consisting of project cost management, project communication management, project

risk management, and project scope management to assess how important each of them are to the success of the project. A saliency level was measured using a 5-point scale. The mean of each of the knowledge areas were determined using SPSS 20 and if mean value is greater than 3.00 and more closer to 5, that means that knowledge area is more important than those with mean values less than 3.00.

For the participants to be able to evaluate the level of importance of project scope management, seven criteria were giving for them to rate, as depicted in Table 4.6.

Table 4.6: Project scope management Rating

Project scope management parameter	Mean	Standard Deviation
Project authorization is confirmed by the superior authorization	4.54	2.83
Identify project objectives, deliverables, constraints and key work activities	4.71	2.34
Establish specified measurable project benefits and outcomes for quantitative assessment of project performance	3.7	1.95
Develop a scope management plan and implement them to ensure a clear understanding and continuous management of project scope	3.95	1.98
Impact of changes in management scope within defined time, cost and quality constraints	4.6	2.63
Check the progress and the results of the record.	3.8	2.6
Identify scope management issues and suggested improvements are identified, documented and passed to higher project management agencies for use in future projects	3.2	2.38
Total Mean	4.02	

Source: Field data, 2018

Table 4.6 shows that participants believe that project scope management is important; as it can be seen on the table, the average value is 4.02. The most important parameter considered in scope management is that the project authorization is confirmed by the superior authorization, with an average value of 4.54, and then the project goals, products, constraints and scope of work are determined, with an average value of 4.71. In order to ascertain the level of importance of project cost management, nine criteria were studied, as depicted in Table 4.7.

Table 4.7: Project Cost Management Assessment

Project cost management parameters	Mean	Standard Deviation
Determine what resources will be needed by every activity and find a way of allocating expenditures	4.25	2.58
Ensuring project costs Estimate budgeting and agreed cost management processes throughout the project lifecycle	4.9	3.88
Develop and implement a cost management plan to ensure clear understanding and ongoing management of project finance	3.45	1.06
Implement agreed financial management procedures and procedures to monitor actual expenditures and control costs	3.65	2.14
Select cost analysis methods and tools to identify cost changes, make evaluation options and make recommendations to higher project authorities	3.7	2.16
Implement agreed actions throughout the project lifecycle, monitor and modify them to maintain financial and overall project objectives	4.7	2.94
Conduct activities to indicate financial completion	3.15	3.15
Review project results to determine the effectiveness of cost management processes and procedures	4.1	1.85
Ensure that problems and solutions encountered during the managing of cost are written in the lesson learned document and stored for the use by future project managers.	4.5	4.42
Total Mean	4.03	

Source: Field data, 2018

From the results, the average of 4.03 indicates that project cost management is critical to achieving project success and achieving final project performance. The most important parameter is to ensure an estimate of project cost so that the budget can be implemented and the cost management process can be negotiated at an appropriate level throughout the project lifecycle with an average score of 4.9.

In order to evaluate project communication management, eight criteria were studied, as depicted in Table 4.8.

Table 4.8: Project Communication Management assessment

Project communication management parameters	Mean	Standard Deviation
Identify the information needs of the stakeholders and make sure that all the needs are recorded and analyzed as the basis for communication planning	3.5	2.69
Implement develop PMIS, structures and methods to make sure that the quality, effectiveness, and error free information dissemination	3.56	1.83
Development, collection, Saving, retrieval, assessment and distribution of management news for project members and stakeholders in created environment and processes for the entire project life.	4.6	2.59
Ensure monitoring and control of the specified information verification process and implement agreed modifications to optimize data quality and accuracy	3.4	2.22
Implement methods to hype the progressiveness of employees and the total performance	3.7	2.08
Maintain friendship with clients in accepted way to make sure there is a clear understanding of goals and reduce conflicts that arises in the implementation of the project.	3.9	2.62
Ensure that finalized tasks are identified to determine who will own and be responsible for every information. information	3.45	1.62
Review ensuring project outcomes to determine the effectiveness of management information and communication processes and procedures	3.65	1.93
Total Mean	3.73	

Source: Survey data, 2018

Project communication management is considered moderately important with an average value of 3.73. The criteria that was seen to be less important was making sure that the specified information verification process is being implemented as planned and is being controlled to veer it to the plan in order to optimize the integrity and perfectness of the information, with an average score of 3.4.

In order to rate the importance of project risk management, eight criteria were studied.

Table 4.9: Project Risk Management assessment

Project risk management parameters	Mean	Standard Deviation
Identify potential, perceived and actual risk events as the basis for a risk management plan	3.6	2.5
Analyze risk events, evaluate options and recommend preferred risk methods using established risk management techniques and tools	3.75	2.23
Develop a plan to reach consensus and communicate with stakeholders to ensure clear understanding and ongoing management of risk factors	3.75	2.58
Ensure that projects are executed using a well-developed projects risk management plans	3.7	2.35
Monitor project schedule progress to identify discrepancies and recommend remedial action for higher project authorities	3.25	2.37
Ensuring that agreed risk responses are implemented and plans are revised to reflect changing project objectives in an uncertain environment	4	2.87
Review ensuring project outcomes to determine the effectiveness of risk management processes and procedures	3.75	2.62
Identify and document improvements to ensure risk issues and recommendations	4.26	2.35
Total Mean	3.76	

Source: Field Data, 2018

As can be seen from Table 4.9, the survey results depicts the responses from participants and discovered that the participants rated risk management to be of medium importance based on the average score of 3.76.

Therefore, the most important project management applications area that was seen to achieve better project performance was the project cost management, second to it was the project scope management, with average values of 4.04 and 4.03, respectively.

4.4.3 Total performance trends of project cost, schedule and quality performance

In order to determine the performance trends of GETfund projects in terms of schedule, cost and quality performances, the index of each factor was calculated. An index below 1.0 means poor performance, while above or equal to 1.0 means high performance or the projects have been performing as planned respectively. In order to understand the performance trends of GETfund projects, the data were collected and summarized and tabulated in the tables below.

Table 4.10: Schedule performance trends of GETfund projects

Schedule Performance Index	No Of GETfund Projects	Percent (%)	Total Trend Performance		
			Status	Number of projects	Percent (%)
0.5	1	0	Under Expectation	16	80
0.6	2	10.0			
0.7	8	40.0			
0.8	6	30.0			
0.9	0	0.0			
1.0	4	20	Equal to Planned	4	20
1.1	n/a	n/a	Exceeded Expectation	n/a	n/a
Total	20	100.0		20	100
Mean Schedule Index		0.855			

Source: Field Data, 2018

Table 4.11: Cost Performance Trend of GETfund Projects

Cost Performance Index	Number of GETFund Projects	Percent (%)	Total Trend Performance		
			Status	Number of projects	Percent (%)
0.6	3	15	Under Expectation	4	20
0.9	1	5.0			
1.0.	2	10.0	Equal to planned	8	40
1.1	8	40.0	Exceeded Expectation	8	40
1.2	6	30.0			
1.5	0	0.0			
Total	20	100.0		20	100
Mean Cost Index		1.045			

Source: Field data, 2018

Table 4.12: Quality Performance Trend of GETFund Projects

Quality Performance Index	Number of GETFund Projects	Percent (%)	Total Trend Performance		
			Status	Number of projects	Percent (%)
0.8	2	10	Under Expectation	3	15
0.9	1	5			
1.0.	10	50	Equal to planned	10	50
1.1	1	5	Exceeding Expectation	7	35
1.2	6	30.0			
1.5	0	0.0			
Total	20	100.0		20	100
Mean Quality Index		1.065			

Source: Field data, 2018

From Tables 4.10, 4.11 and 4.12, the schedule performance of the project, with cost performance and quality performance of 80%, 20% and 15%, respectively, below trend. The percentage of trends determined indicates that project performance is below the trend and is prevalent in the project. However, the trend of quality performance of GETFund projects was in good standing than that of cost and schedule performance with an average quality index of 1.65. The reason was that, the customers tend to get

quality products that are satisfactory, not projects that are planned or built ahead of time, and projects that are equal to the planned cost or under budget. There are indications that while cost and schedule targets can be mended with, quality can't be compromised. Table 4.10 depicts that Schedule performance lags the average time index by 0.855, with cost and quality performance trends generally as expected, with average values of 1.045 and 1.065, respectively.

4.4.4 Effect of project management applications on project performance

In quest to examine the effect of project management application on the success of a project, question 41 coming was used from the questionnaire. Participants were giving the opportunity to evaluate the essence of applying project management applications on a project to improve its performance. From Table 4.13 below, 45% of participants strongly agree and another 45% agreed with this statement. An average score of 1.5 indicates that participants strongly agree that application of project management knowledge areas to a project can improve project performance.

Table 4.13: Project Management Applications and Project Performance

Level of agreement	Value	Frequency	Percent (%)
Strongly Agree	1	9	0
Agree	2	9	0
Neutral	3	2	0
Disagree	4	0	45
Strongly Disagree	5	0	45
Total		20	100
Mean		3.6	

Source: Survey data, 2018

To evaluate the effect of project management application on project performance, various questions were asked on the questionnaire and the data collected were analyzed. The results of the survey showed that benefits have been generated as shown in Table 4.14.

Table 4.14: Benefits from applying the knowledge areas of Project Management

Benefits of project management application	Mean	Standard deviation
Minimize the expenses made on the project by so doing maximizing profits	4.55	2.37
Record high levels of success have increased competitive advantage and market share	4.04	2.70
Better understand project requirements and motivate employees	3.3	1.68
Help meet quality standards	4.14	1.36
Helps project managers to meet the needs of customers	4.24	2.0
Total Mean	4.09	

Source: Data, 2018

From Table 4.14, the average value of 4.09 indicates that respondents believe that participation in project management applications can bring benefits and thus improve project performance. The highest ranked benefit is the reduction in project delivery costs to ensure increased profits and an average score of 4.65. According to the minimal benefit of the participants, it leads to a better understanding of the project requirements, resulting in a motivated employee with an average score of 3.3.

4.5 INFERENTIAL DATA ANALYSIS

Pearson Product Moment Correlations were used to ascertain the link between project management application areas and the success of the project in terms of its performance on schedule, cost and quality. Tables 4.15, 4.16, 4.17 and 4.18 show the correlation between the project management application area and the success of the project in terms of performance. If the computed correlation coefficient is positive that means there is a positive link between the knowledge area and the performance criteria and the negative correlation coefficient also means that there is a negative link. Correlation coefficient from 0.9 to 1.0 means the link between the application area and the performance of the project is high.

Table 4.15: Scope management and project performance

	Schedule Index (Y1)	Cost Index (Y2)	Quality Index (Y3)
Mean (X1)	4.25	4.25	4.25
Mean (X2)	0.86	1.02	1.04
Standard Deviation (X1)	0.74	0.74	0.74
Standard Deviation (Y)	0.13	0.14	0.10
Correlation Coefficient	0.55	0.86	0.35

Source: Survey Data, 2018

From Table 4.15, it can be seen that, there was a medium link between scope management and schedule performance, and this was determined by the correlation coefficient of 0.55. It was also seen that there was a high link between scope management and cost performance, which was also determined by the correlation coefficient of 0.86. But there was a low link between scope management and quality performance which was seen by the correlation coefficient of 0.35.

Table 4.16: Cost Management and Project Performance

	Schedule Index (Y1)	Cost Index (Y2)	Quality Index (Y3)
Mean (X2)	4.54	4.54	4.54
Mean (Y)	0.75	1.03	1.05
Standard Deviation (X2)	0.68	0.68	0.68
Standard Deviation (Y)	0.13	0.14	0.10
Correlation Coefficient	0.63	0.90	0.82

Source: Survey Data 2018

Table 4.16 depicts that the correlation between cost management and schedule, cost and quality performance was high. This was determined by their correlation coefficients of 0.63, 0.90 and 0.82, respectively. The one with the highest correlation coefficient is the one that is highly correlated with cost management. That was cost performance with a correlation coefficient of 0.90.

Table 4.17 shows the low relationship between communication management and schedule, cost and quality performance. The least relevant variables are communication management and quality performance with a correlation coefficient of 0.02.

Table 4.17: Communication Management and Project Performance

	Schedule Index (Y1)	Cost Index (Y2)	Quality Index (Y3)
Mean (X3)	4.2	4.2	4.2
Mean (Y)	0.86	1.05	1.07
Standard Deviation (X3)	0.63	0.63	0.63
Standard Deviation (Y)	0.13	0.14	0.10
Correlation Coefficient	0.06	0.08	0.02

Source: Survey Data 2018

Table 4.18 shows that there is some sort of a positive correlation between risk management and cost, schedule and quality performance, which was seen from the correlation coefficients of 0.68, 0.50 and 0.34, respectively. From the analysis it can be deduced that the correlation between risk management and schedule is high which was indicated in correlation coefficient value of 0.68. Whiles the link seen between risk management and quality was low, the correlation coefficient was 0.34, and that of risk management and cost was medium with a correlation coefficient of 0.50.

Table 4.18: Risk management and project performance

	Schedule Index (Yi)	Cost Index (Y2)	Quality Index (Y3)
Mean (X4)	5	45	4
Mean (Y)	0.87	1.04	1.06
Standard Deviation (X4)	0.86	0.75	0.75
Standard Deviation (Y)	0.83	0.73	0.73
Correlation Coefficient	0.68	0.50	0.34

Source: Survey Data 2018

4.6 DISCUSSION RESULTS

4.6.1 Sample characteristics

In all 38 people were sampled size for this study; but in fact the participants involved in the research work were 20. The 18 participants who were unable to submit their questionnaires were in no position to affect the results of the research. In all, participants showed medium to high levels of experience, with most participants working on 8 to 12 projects with an average of 15 million Ghana Cedis cost of project. This medium to advanced level of experience provides depth for research in this area.

4.6.2 Importance of connecting Project Management Application Areas

From the results, it was found that the importance of connecting diverse project management application areas was more significant, with 80% strongly agree or agree. Kerznar (2010) claims that project management application areas and processes should be interrelated to successfully complete the project.

4.6.3 Significance of project management applications to the project

Project scope management is considered to be important for influencing project performance. Most participants were of the view that, the most important part of managing the scope was to control the changes made to the project, expenses and quality and other constraints so as to complete the project within a given timeframe, and achieved an average value of 4.55. The theoretical review (PMI, 2017) states that project scope management primarily involves the control and managing the changes of the activities involved in projects to avoid scope creep.

With respect to cost management, majority of the participants agreed that the most important approach was to ensure that project costs are estimated to help develop the project budget and agreed cost management plan executed at applicable stages throughout the project lifecycle. Derry (2008) attest the findings because he asserted that financially strong companies rely on rigid procedures in spending cash on projects.

Project communication management is usually considered to have a medium importance for project performance. However, most participants agree that it is important to collect storage retrieval analysis and information dissemination communication applications within the lifecycle of the project through project staff and stakeholders (average 4.9). Successful projects to improve project performance. These

findings are asserted by the research conducted by (Kerznar, 2010), suggesting that continuous and effective communication among interested participants in a project is critical to the success of the project.

Identifying uncertain events and suggesting responses to them was determined to be the important project risk management application, with the highest average score for most responses being 4.15. These findings are consistent with the research work conducted by (Honwell et al., 2011), who pointed out that, identification, analysis, and evaluation are critical to controlling risk to achieve successful project completion, thereby improving project performance.

4.6.4 Impact of cost, schedule and quality performance on project performance

The findings show that the project's schedule performance, cost performance and quality performance are lower than 75%, 15% and 5% respectively. The findings indicated that 30% of performance exceeded customer expectations, proving that quality poorly meet the expectation of the participants. This findings asserts what has been discovered earlier on quality performance and is considered to be the primary factor of the factors used in assessing the success of the project process (Serpall and Alercom, 2009).

4.6.5 Effect of project management applications on the success of the project.

Based on the findings, 65% of the participants strongly agreed that project management applications can improve the level of success of the project with 35% agreeing. In addition, it has been argued that most participants agree that project management application to the projects yields the greatest benefit. The important benefit of applying project management knowledge areas is that it leads to lower expenses by so doing

maximize profit for the organization. The results are consistent with previous research works, which indicates that the success of a project is determined by two structures, which includes the performance of the project and organization in all. (Murray, 2008). The correlation coefficient was determined to able to get the link between project management applications and the success of the project. The results indicated that cost management was highly correlated with schedule, and quality. The highest link is the highest correlation coefficient between cost management and cost performance, at 0.91. Chan and Chan (2004) believe that every project management activity completed at each stage of project development must be valued. The results of the correlation analysis are consistent with this theory and show that most applications are positively related to project performance and ultimately drive project performance.

4.7 SUMMARY

In this chapter, the major topics relate to the research objectives outlined in Chapter 1. It is clear that GETund is a project oriented organization from the data collected in this research work. The results of the study the studies depicted that it is essential to relate diverse project management application areas to better perform well on the project. Project scope management and project cost management are application areas that have the greatest impact on project performance from the average score achieved. Studies have shown that the time required to complete the projects were not being achieved. Finally, majority of the participants were generally of the view that the application of project management would bring cumulative gains to the project then to the organization as a whole; the prominent benefits were identified as reducing the expenses during project implementation, resulting in high gains and the ultimate success of the project.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The main purpose of this study was to identify the effect of project management application on the success of the projects being undertaken by GETFund. Therefore, three objectives and research questions were proposed to achieve this goal in the background of articles and papers reviewed in Chapter two. This chapter throw more lights on the main findings of this study, including recommendations for future research areas.

5.2 SUMMARY OF FINDINGS

5.2.1 Assessing the importance of connecting diverse project management application areas

An important result of this studies indicated that it was essential to connect project management application areas to achieve higher project performance. Table 4.5 depicted that 65% of participants indicated that the connection between project management application areas was essential for the success of the project.

5.2.2 Project Management Application Areas Significantly Affect Project Performance

Project management application areas are important for achieving higher project performance by effectively connecting them to produce better products and services. Project cost management knowledge area was followed by project scope management and was discovered to be the most knowledge area that affects the success of the project with average scores of 4.03 and 4.02, respectively. Risk and communication

management knowledge areas were considered to be slightly important with average values of 3.74 and 3.78, respectively.

5.2.3 Impact of project time, cost and quality performance on project performance

By calculating the cost, schedule, and quality performance of projects undertaking in a company as a metrics of project performance, trends in project performance were determined. Regarding schedule performance, 80% of the 20 participants who have work on different projects were of the view that the trend of the schedule performance were depreciating as most of the projects they were working on has been delayed. In addition, 30% of projects have been completed beyond the planned cost and are therefore under trend. In terms of quality expectations, 80% of projects were on top of the trend. It was discovered that customers and end users were more than satisfied with the overall quality performance of the projects.

5.2.4 Impact of project management applications on project performance

See Sections 4.7 and 4.8 for a brief introduction to the impact of project management applications. 55% of participants strongly agreed and 40% also agreed that the use of project management applications improved project performance. In addition, the survey results show that the majority of participants depicting an average of 4.1, are consistent with the benefits of the use of project management applications, thereby improving project performance.

5.3 CONCLUSION

This study was undertaken to determine the effect of project management application on the success of a project in terms of meeting the planned cost, schedule, and to meet the expectation of end users which is known as quality of the product or service. The first research question raised was “To what extent is it essential to connect project management applications to achieve targeted project performance?” The main results discovered from the study was to connect various project management applications to achieve better project performance? It was discovered from the study that, it is essential to tailor the application areas in order to successfully implement the project. With respect to the question “Which of the project management application areas is mostly used by GETund and have had a major impact on the success of the project?” What was observed was that all the project management application area were considered to be important for successfully completing the project, but project cost management was the first most important of the application areas as compared to project scope management. Another research question raised was “what level of impact does schedule, cost, and quality performance have on GETund project performance?” The survey results show that schedule lags behind cost and quality, but they are all necessary for the successful implementation of the project. The last question asked was “What is the impact of project management application on the success of a project?” and what was found was that the application of project management knowledge areas to the project had a positive effect on the success of the project.

5.4 RECOMMENDATIONS

The researcher came out with some key suggestions that can be applied to the sample under study. In order to enhance the effectiveness of project management application for the success of the project, the researcher suggested that the application areas of project management should be tailored in a way that it will be incorporated into the project in the early stages to the closing phase of GETfund projects.

It was also suggested that in tailoring the application areas of project management, priority or focus should be on the area with great impact on the success of the project. Project cost management and project scope management application areas should be given more attention as they have better impact on project leading to better project performance. Also through effective planning, more focus must be placed on project communication and risk management knowledge areas by performing good risk assessment and coming up with better communication management plan to enhance communication with stakeholders.

More project performance metrics nowadays are developed in other research efforts, such as benefits for beneficiaries, and benefits to national infrastructure should be added to performance metrics. By going with this method, projects will not necessarily benefits only some few people or one organization of people but shall be useful to all stakeholders.

It is recommended to adopt tactical methods to incorporate project management applications, by implementing customer satisfaction observations, forms to check how effective communication has been on the project and assessing the time it took to resolves issues on the projects and this can be done by listening, observing and informally chatting with key stakeholders.

5.5 AREAS OF FURTHER RESEARCH

In this study, potential future research in some important areas has been identified, including few research materials that can be used to assess the impact of project management applications on GETfund projects or any project oriented organizations performance. Future research in this area will help managers to come out with a tailored project management plan that is customized to accommodate organizations with fewer resources.

If additional research is required, time should be taken to study the concepts of enhancing project management applications in the areas of organizations method of integration, planning and evaluation of projects.

Lastly, studies are required on assessing the effect of project management application on the success of projects being executed by other project oriented organization across all industries in Ghana.

5.6 SUMMARY

The study revealed depths of understanding on the necessary ways to follow to adhering to project management applications. The findings are very useful for organizations within the scope of the study. GETfund should pay more attention to project management practices, and research shows that certain applications are more important than others, so more research work needed in that area.

For a well connection of project management application areas, a well-structured method should focus on integrating organization objectives needed to achieve higher project performance. The findings of this study provide opportunities for GETfund to enhance project performance as well as improve organizational performance.

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APPENDIX 1

QUESTIONNAIRE

The purpose of this research is to study the impact of project management applications on project performance of GETFund projects in the Wa Municipality.

Please note that your responses will be kept confidential and no respondent will be identified to any other person.

Part A: General Information and level of importance of connecting various project management applications in order to realise greater project performance. Please respond by ticking appropriate box (<input type="checkbox"/>)	
1. Which of the following best describe your role on project within GETFund?	<input type="checkbox"/> Project consultant <input type="checkbox"/> Project leader <input type="checkbox"/> Project team member
2. Years of experience	<input type="checkbox"/> 0-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-20 <input type="checkbox"/> More than 20
3. Total number of projects worked on in the last 5 years	<input type="checkbox"/> 0-3 <input type="checkbox"/> 4-7 <input type="checkbox"/> 8-12 <input type="checkbox"/> More than 12
4. Average size of projects worked on (GH Cedis)	<input type="checkbox"/> Less than 5 million <input type="checkbox"/> 5-10 million <input type="checkbox"/> 11-50 million <input type="checkbox"/> More than 50 million
5. To what extent is it important to link project scope management, project cost management, project communication management and risk management to realise better project performance? <input type="checkbox"/> (1) = Not important <input type="checkbox"/> (2) = Slightly important <input type="checkbox"/> (3) = Average importance <input type="checkbox"/> (4) = Important <input type="checkbox"/> (5) = Very Important	

Part B: Ranking significance of project management applications to project performance Please insert the relevant value (number) adjacent to the practice	
Project Scope Management (1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant (5) = Exceedingly Significant	Number?
6. Project authorization confirmed higher authority	
7. Identifying project objectives, deliverables, constraints and principal work activities	
8. Establishing designated measurable project benefits and outcomes to enable quantified evaluation of project performance	
9. Developing scope management plans and implementing them to ensure clarity of understanding and ongoing management of project scope	
10. Managing the impact of scope change within established time, cost and quality constraints to meet project objectives	
11. Reviewing progress and the results recorded to assess the effectiveness of scope management procedures	
12. Ensuring scope management issues and recommended improvements are identified, documented and passed on to higher project authority for application in future projects	
Project Cost Management (1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant (5) = Exceedingly Significant	Number?
13. Determining resource requirements for individual tasks to provide a basis for attributing expenditure	
14. Ensuring project costs are estimated to enable budgets to be developed and agreed cost management processes implemented at an appropriate level throughout the project	
15. Ensuring cost management plans are developed and implemented to ensure clarity of understanding and ongoing management of project finances	
16. Implementing agreed financial management procedures and processes to monitor actual expenditure and to control costs	
17. Selecting cost analysis methods and tools to identify cost variations, evaluate options and recommend actions to higher project authority	
18. Implementing agreed actions, monitoring and modifying them, to maintain financial and overall project objectives, throughout the project life cycle	
19. Conducting activities to signify financial completion	
20. Reviewing project outcomes to determine the effectiveness of cost management processes and procedures	
21- Ensuring cost management issues and recommended improvements are identified, documented and passed on to higher project authority for application in future projects	

Project Communication Management (1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant (5) = Exceedingly Significant	Number?
22. Identifying Information requirements and ensure they are documented and analysed as the basis for communications planning	
23. Implementing the designated project management information system, structure and procedures to ensure the quality, validity, timeliness and integrity of information and communication	
24. Managing the generation, gathering, storage, retrieval, analysis and dissemination of information by project staff and stakeholders within established systems and procedures to aid decision making processes throughout the project life cycle	
25. Ensuring designated information validation processes are monitored and controlled, and agreed modifications implemented to optimise quality and accuracy of data	
26. Implementing processes to promote continuous improvement of staff and overall project effectiveness	
27. Maintaining customer relationships within established guidelines to ensure clarity of understanding of objectives and to reduce conflict throughout the project life cycle	
28. Ensuring finalisation activities are conducted to ascertain agreed ownership of and responsibility for information	
29. Ensuring project outcomes are reviewed to determine the effectiveness of management information and communications processes and procedures	
Project Risk Management (1) = Not Significant (2) = Slightly Significant (3) = Moderately Significant (4) = Very Significant (5) = Exceedingly Significant	Number?
30. Identifying potential, perceived and actual risk events as the basis for risk management planning	
31. Using established risk management techniques and tools to analyse risk events, assess options and recommend preferred risk approaches	
32. Developing plans agreed with stakeholders and communicating to ensure clarity of understanding and ongoing management of risk factors	
33. Ensuring the project is managed in accordance with established project and risk management plans	
34. Monitoring progress against project plans to identify variances and recommend responses to higher project authority for remedial action	
35. Ensuring agreed risk responses are implemented and plans modified to reflect changing project objectives in an environment of uncertainty	
36. Ensuring project outcomes are reviewed to determine effectiveness of risk management processes and procedures	
37. Ensuring risk issues and recommended improvements are identified and documented	

Part C: Effectiveness of project management applications in terms of Schedule, cost and quality performance in GETFund projects

Please select one project, executed within your organization, satisfying the following criteria and provide the subsequent performance information on it; the project should be substantially completed (should be practically completed or handed over).

38. Schedule Performance of Project

In the table below, please indicate the time performance of the selected project by ticking its corresponding time performance index obtained. (Alternatively you may provide the figures in the formula below).

Schedule Performance Index = (Planned Contract Period) / (Actual Contract Period)

Project completion and status achieved	Completion behind schedule					Completed on schedule	Completed ahead of schedule				
Index	0.5 and below	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.6 and above
Please tick											

39. Cost Performance of Project

In the table below, please indicate the cost performance of the selected project by ticking its corresponding cost performance index obtained. (Alternatively you may provide the figures in the formula below).

Cost Performance Index = (Initial Project Cost) / (Final Project Cost)

Project cost status achieved	Completion above initial estimated cost					Completed as estimated	Completed below initial estimated cost				
Index	0.5 and below	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.5 and above

Quality Performance of Project

In the table below, please indicate the quality performance of the selected project by ticking its corresponding quality performance margin obtained. Please note that quality performance margin is, in your own estimation, extent to which the quality of the project deviated from what was expected.

Project quality status achieved	Below expectation by					As expected	Above expectation by about				
Index	50% and below	40%	30%	20%	10%	1.0	10%	20%	30%	40%	50% and above
Please tick											