

**ASSESSMENT OF PROJECT CLOSING PROCEDURES AT GHANA PORTS
AND HARBOURS AUTHORITY-TEMA**

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DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma at Kwame Nkrumah University of Science and Technology, Kumasi or any other educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

It is estimated that Ghana loses up to \$25 million annually via unfinished projects. This amount is equivalent to 667 additional three-unit classroom blocks per year which would accommodate an estimated 70,000 students (Williams, 2017). At the same time there are projects which take too long to close even though these projects would have been better identified and marked as not-to-be-pursued. The aim of this study is to assess project closing procedures adopted by Ghana Ports and Harbours Authority (GPHA) in closing projects. Specifically, the thesis seeks to look at best practices for project closure process, to document project closure procedures adopted by GPHA, and to compare project closure procedures of GPHA with the best practice. The research methodology adopted for this study is qualitative, whiles data was collected through interview of project managers and supervisors at GPHA. Deductive approach to data analysis resulted in a number of funding's. Documentation requirements, complete drawings; final project report, provision of people trained on operating product of facility, customer training, and project audit were some of challenges with project closing procedures adopted by GPHA. The procedures most appropriate for closing projects at GPHA emphasizes on communication between the different parts of the project like steering committee, managers, developers and analysts. Comparison of project closing procedures of GPHA compare with best practices indicates that GPHA meet best practices in closing project looking at this specific aspect.

Keywords:

Project closure, Ghana Ports and Harbours Authority-GPHA, Project Management

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LIST OF ABBREVIATIONS

KNUST	- Kwame Nkrumah University of Science and Technology
IDL	- Institute of Distance Learning
GPHA	- Ghana Ports and Harbours Authority
IMaH	- International Maritime Hospital
PM	- Project Management
PMI	- Project Management Institute
PMBOK	- Project Management Body of Knowledge

DEDICATION

This piece of work is dedicated to my lovely daughter, Evina Sedinam Paams, as a challenge to her to aspire to greater academic.

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The journey to achieving knowledge can be a long and enjoyable one. It is one that challenges the brain and ensures a person pushes the limits to be better. Knowledge cannot be harnessed by one individual but from a collection of people with diverse specialties. This past year in my quest to upgrade myself academically, I have been supported by a lot of people whose motivation, wisdom and inspiration has brought me this far. I thank the Almighty God for equipping me with the knowledge and wisdom to pursue. I went through financial challenges but his grace prevailed. I cannot thank my family and friends enough for their support and patience during this period. I say thank you to Dr. Barbara Simons, my Thesis Supervisor for her time, support and patience in my research process. Her recommendations and insightful comments improved my thesis. I also thank ING. Joseph Seripenah at Ghana Ports and Harbours Authority for the insightful discussions we had concerning my topic. These discussions shaped my path and gave me a better understanding of the topic.

CHAPTER ONE

GENERAL INTRODUCTION

1.1 INTRODUCTION

This introductory chapter presents a brief background to the study and covers the following headings: statement of the problem, research questions, aim, objectives, methodology, and scope of the study.

1.2 BACKGROUND OF THE STUDY

Projects are often considered to follow a life cycle, comprising initiation, planning, execution, monitoring and controlling and closing of the project. (PMBOK sixth edition) Thus, all projects are by definition limited in time and planned and are expected to be brought to a close on a specific date or at a time period set in advance (PMBOK guide, 2004). While project management covers all five processes; the first four processes are given much more attention in all literatures concerning project management with little mention of the project closure phase. Project closure is used in project management to describe a situation where a given project is supposed to end or be brought to finality. This process may occur after successfully attaining all or part of the project objectives or when there's no more sense or need for more continuation of the project. The procedure is handled under a specific process which usually requires the management staff to analyze the present condition of the project work, review development of objectives and goals, assess the task against success criteria, and also examine the condition of deliverables (Task Management Guide, n.d.).

Indeed, the substantive objective of the project is to attain the objectives of the project and close (Project Management Institute, 2000). Certain projects, are required to end or

close before target closure to remain competitive and to get faster returns on the investment (Dey, 2000), while others may be required to close on or after the set completion date for a number of reasons. Project closure may be on volition or involuntarily. Whatever the reason for the closure, the project manager, project team and other stakeholders must understand and agree on the condition by which the project must be closed.

Gray and Larson (2008) enumerated five conditions under which projects are brought to a close. They identified them as;

Normal closure: this is the common condition of completing a project as planned after the project objectives have been attained, formal acceptance by the client is obtained and formal closure of the project commences.

The second is **Premature closure:** A number of projects don't achieve all of their deliverables or aren't given the chance to do it. Rather, they're closed mid-stream by eliminating components of the project that were first outlined in the project scope. This may be for reason of fees, the place that the client reduces funds on the project or the project has consumed the budget of its. Early closure might also appear once the task is of strategic value and also should be accomplished earlier than the planned delivery date. This may be a brand new item launch and any delays on the launch until the planned completion date might lead to chance damage on the customer.

Thirdly are **perpetual projects:** Contrarily, some projects hardly ever appear to end. These're projects that have had several delays, problems and technical setbacks. Perpetual projects also are afflicted by endless scope creep, add-on and changes. The task with these kinds of projects is, they do not ever attain the core goals of theirs or maybe objectives as an outcome of the continual changes as well as scope creep. This

becomes frustrating to the project manager, the project team, the client and other stakeholders to the project as they do not see the objectives of the project being attained despite the numerous request for changes. Throughout this discouraging time, the project manager has to resolve the scope as well as plan for closure. This might be accomplished by redefining the range of the task so task closure is forced, restricting resources or budget, or establishing a time limit is able to do this. When this's completed, any inclusion to the venture is view as a 2nd stage of the task, instead of the task being perpetual.

Fourthly, **failed projects**: A lot too regularly, projects close owing to the point that they've broken. These may be as a result of client running out of funds, budget overrun, legal or environmental issues, inexperienced project manager and team etc. making it difficult for the project to attain its object.

Fifthly, **Changed Priority**: In some circumstances, projects must be brought to closure when the priority or objectives of the project have changed. This may occur as a result of technological change over the course of a long term project, financial and economic reasons, dispute resulting in the withdrawal of one or more members of the project sponsors, or implementers.

To sum up, failure as well as success are 2 standard reasons for closing a task. In order to figure out which of the main reason is applicable to a task, for starters the team needs to recognize the requirements for failure and success after which assess the task against those criteria (Task Management Guide, n.d.).

1.3 STATEMENT OF THE PROBLEM

Although there are so many literatures on project management, discussions on project closure in these literatures is very limited (Havila and Salmi, 2009; Havila et al; 2013). As a result, there are not many techniques for handling the project closure stage (Havila et.al; 2013).

Cats-Baril and Thompson (1995) discuss that although there are studies conducted on information technology in public sector but those studies deal with the premises of projects and do not deal directly with the management of projects in the public sector. At the same time there are projects which take too long to close even though those projects would have been better identified and marked as not-to-be-pursued. Straw and Ross (2005) illustrate this with an example of a project which took a decade and millions of dollars in losses before it was closed.

Al-Kharashi and Skimore (2009) considered project closure with respect to delays in construction project in Saudi Arabia, and Archarya, et al; (2006) examined the causes of delay from the Korean, Marzouk and El-Rasas (2014) examined causes of delay in Egyptian context whiles Muhwezi, Acai and Otim examined the subject from the Ugandan perspective. Extant literature reviewed so far reveals that there is little or no evidence considering the Ghana context, thus creating a context gap.

It is estimated that Ghana loses up to \$25 million annually via unfinished projects. This amount is equivalent to 667 additional three-unit classroom blocks per year which would accommodate an estimated 70,000 students (Williams, 2017). At the same time there are projects which take too long to close even though those projects would have been better identified and marked as not-to-be-pursued. Straw and Ross (2005) illustrate this with an example of a project which took a decade and millions of dollars

in losses before it was closed. Royer (2005) reasons that there are certain cases where the projects would rather still be continued instead of closing them. Nonetheless it is of paramount importance to know when to close a project before it becomes a drain on the resources (Royer, 2005). Hence it calls for a research on the aspects of identifying how a project manager can handle project closure.

This study will consider the project closure practices and the extent to which Ghana Ports and Harbours Authority adhere to project closure practices.

1.4 RESEARCH QUESTIONS

The thesis intends to answer the following questions:

- What are the major challenges with project closing procedures adopted by GPHA?
- What project closing procedures will be most appropriate for closing projects at GPHA?
- How do project closing procedures at GPHA compare with best practices?

1.5 AIM

The aim of this study is to assess project closing procedures adopted by Ghana Ports and Harbours Authority (GPHA) in closing projects.

1.6 RESEARCH OBJECTIVES

The specific objectives of this thesis are as follows:

1. To look at best practices for project closure processes.
2. To document project closure procedures adopted by GPHA.
3. To compare project closure procedures with the best practice.

1.7 RESEARCH METHODOLOGY

This thesis proposes to adopt both inductive and deductive approach based on Pragmatic and transformative philosophical assumptions. The researcher intends to use interview as the research instruments for collecting data to answer the research questions. This implies that for a more effective data gathering, the nature of the questions would be both open- and closed ended. Considering the research approach and instruments mentioned, the study is qualitative. Qualitative research as compared to quantitative research focuses more on descriptive data that could be obtained through a number of ways. Data collection techniques used to gather qualitative data are interviews, unstructured observations, diary accounts or case studies.

Specifically, to achieve the first and second objectives, the data would be collected through interviews with the target population. With respect to the third objective of comparing project closing procedures with international best practices, the project closing procedures at GPHA identified through interviews would be compared to international best practices identified from secondary sources in the literature reviewed. These secondary sources include textbooks, published and unpublished thesis, journals and periodicals.

1.8 SIGNIFICANCE OF THE STUDY

Considering the set objectives for this thesis which are to identify challenges with project closing procedures adopted by GPHA, to identify procedures that will be most appropriate for closing projects at GPHA, and to compare project closing procedures of the GPHA with best practices, this study will contribute to the improvement of project management practice not just at GPHA, but also to all other stakeholders involved in facility development and management. The study will also provide recommendations against inappropriate project closing procedures likely to affect the overall outcome of future projects. The researcher is optimistic that within the scholarly community, this thesis will provide vital information worth referencing by other researchers pursuing studies of similar interests.

1.9 SCOPE OF THE STUDY

The research would highlight views of project managers on project closing procedures of International Maritime Hospital-GPHA (IMaH-GPHA) project. The research will focus on electrical, civil, IT and project under the IMaH-GPHA construction project. The IMaH-GPHA project commenced in February 2012 and was to be completed within 18 months. The contract was for the contraction of a 50-bed capacity hospital, however the scope of the project was greatly increased to a 200-bed capacity hospital, an MRI scan, a pathology unit a radiology unit and a dialysis unit. The contract officially ended in December, 2016.

The total project is estimated at \$23 million on completion and houses a number of modern facilities such as, a three tesla Magnetic Resonance Imaging (MRI) technology, a CT Scan, mammogram, Fluoroscopy, endoscopy, a dialysis center etc. which many

individuals, organizations and surrounding hospital would rely on as a center in the West African sub-region for first class medical care.

Other services that the facility will offer are neurology, which would deal with the diagnosis and treatment of all conditions involving the central nervous system, complex surgical cases, eye surgery, obstetrics and gynecology as well as a mortuary with a capacity for 84 bodies that can be expanded to hold 200 bodies.

The hospital is proposed to be a referral hospital and a one stop shop for medical conditions which otherwise are sort for outside Ghana which would limit the exportation of health services and our cherished foreign exchange to other countries.

The hospital also has in place allocated as specialist clinics to provide care to people with gastroenterology and liver conditions such as colon polyps and cancer, hepatitis, heartburn and peptic ulcer. There is also a 20-bed renal dialysis center that would provide comprehensive therapy and support service treatment to people with kidney conditions. Ghana Ports and Harbours Authority (GPHA) is a Statutory Corporation started under Ghana's Provisional National Defense Council Law (PNDCL 160) of 1986 to create, plan, deal with, maintain, run as well as manage ports in Ghana (Ghana Ports and Harbours Authority, 2016). The statutory features of GPHA might be summarized as follows:

1. Ownership, regulation and administration of the port estates.
2. Planning the usage of port lands.
3. Planning, maintenance and development of port infrastructure as well as superstructure.
4. Granting of licenses and concessions to private port operators.
5. Licensing of tiny craft to work in the ports.

6. Operation as well as control of port facilities.
7. Provision of marine (vessel handling) expertise - viz. pilotage, towage, unmooring and mooring, salvage.
8. Provision of cargo management expertise - viz. stevedoring, receipt, delivery and storage of consignments.
9. Supply of electric power and fresh water to vessels, tenants, and more.
10. Regulation of the use and port operations of the ports.
11. Environmental management, response, emergency preparedness and property protection and port security.
12. Setting as well as administration of port tariffs.

With respect to the core functions of GPHA, this study focuses on the department in charge of planning, development and maintenance of port infrastructure and superstructure. The port under study is the Tema port, situated on the eastern coast of the country and it is the largest of the two ports in Ghana. The other is the Takoradi port in the Western Region of Ghana. (PNDC LAW160, 1986)

1.10 ORGANIZATION OF THE STUDY

This thesis consists of five chapters, as follows:

Chapter 1. This chapter is a general introduction to the selected thesis topic and includes a brief background, problem statement, research aim and objectives, scope and limitation of this study.

Chapter 2. This chapter is a review of all relevant literature used in this study. They include books, journals, articles, thesis and dissertations, and information collated from various websites.

Chapter 3. This chapter detailed the research methodology adopted for this study. It discussed the research approach based on the philosophy, research design, and the specific research method used. It also justified the research instrument used, sources of data used, how the data were collected and analyzed.

Chapter 4. This chapter presents analysis and interpretation of the data collected from the research instrument using the Statistical Package for Social Sciences (SPSS).

Chapter 5. This chapter concludes the study by answering the research questions. And based on the findings, draws conclusions and made recommendations towards the enhancement of project closure procedures at Ghana Ports and Harbours Authority.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviews thematically books, book sections, journal articles, articles in periodicals, conference proceedings, reports, and published or unpublished academic writings on the subject matter from reliable sources to help the researcher better understand the theoretical framework of the study.

2.2 DEFINITION OF A PROJECT

Hyttinen (2017) argue that Project Management has become a core competency, and nearly every manager is involved in managing one or more projects. Moreover, the role of projects in organizations is receiving increasing attention. Shenhari and Wideman (2002) argues that any serious discussion of the principles of project management demand the conditions being utilized are clearly identified. While there is an overall knowledge of exactly what a project is and also what project management is approximately, there's no consensus among professionals regarding accurate definitions of either of these conditions.

Whereas Wallace (2016) define a project in its simplest form to mean a single, one-off, unique product, the British Standards Institute (2010) defines project as a unique set of coordinated activities, with definite starting and finishing points, undertaken by an individual or organization to meet specific objectives within defined schedule, cost and performance parameters. According to Shenhari and Wideman (2002), this definition implies that a project involves both process and organization and this is quite distinct from the "product" which is the resulting output. Krajewski and Ritzman (2002) on the

other hand defines a project as an interrelated set of activities, having a definite starting and termination point and resulting in a unique outcome for a specific resource allocation operating under a triple constraint - time, cost and performance. Turner (1998) defined a project as, Endeavor where man (or maybe machine), financial resources and material are structured in a novel way, to tackle a distinctive range of work, and provided specification, in the constraints of time and cost, in order to provide helpful change by qualitative and quantitative objectives.² Based on Turner (1998), project based management features 5 functions: business, time, scope, cost and quality. Kerzner, 2003 argues that a project is some number of activities plus jobs which have a certain goal to be finished within particular specifications; use a defined beginning and end date; have funding limits; eat cash, equipment and people; and therefore are multifunctional. Andersen comprehends tasks from an organizational viewpoint as' A project is a short-term business, started by its base group to handle a project on its behalf.

2.3 THE CONCEPT OF PROJECT MANAGEMENT

According to the Association for Project Management (APM), (2018), project management is the use of processes, skills, methods, experience and knowledge to attain certain task goals based on the task acceptance criteria inside agreed parameters. Project management has final deliverables that're constrained to a limited timescale and finances. Based on Williams (2008), a far more concrete but much less fascinating explanation is the fact that project management is all you have to create a project happen promptly and within spending budget to supply the necessary quality and scope.

Project Management requires the use of skills and knowledge to organize, plan, schedule, direct, control, monitor, and evaluate a project (Cox and Blackstone, 2002).

The use of Project Management to achieve organizational goals has increased rapidly (Meredith and Mantel, 2000) and many business schools have responded with courses to assist students in learning these unique skills.

2.4 UNDERSTANDING THE PROJECT LIFE CYCLE

As published in Payne and Watt (2017), each project features a beginning, a middle time during which activities move the project toward completion, and also an ending (either unsuccessful or successful). A regular task generally has got the following 4 leading phases (each with the own agenda of its of jobs plus issues): initiation, implementation, planning, and closure. Used collectively, these phases symbolize the road a task takes out of the novice to the end of its and are usually called the task "life cycle." Based on Williams (2008), the generic task life cycle is pretty straightforward - first begins the task (called Initiating), then he/she passes to really perform the project (through the Planning, Executing, and also Controlling phases, and they create a loop), and lastly they stop with everybody satisfied, a method for future years in position, along with an inspection in the hand of yours (Closing).

2.4.1 Initiation Phase

Of the very first of those phases, the initiation stage, the project goal or maybe require is identified; this could be a company issue or maybe chance (Watt and Payne, 2017). The Project Initiation Phase could be the conceptualization of the venture. This section describes the standard processes which should be performed to get a task started. Appropriately, the intent behind the Project Initiation Phase is specifying exactly what the task should achieve (Zahari, n.d.).

2.4.2 Planning Phase

In this next stage, which is the preparation stage, is where the project deliverables are defined, developed and refined in as much information as you possibly can as well as the actions essential to satisfy the project goals are planned. In this phase, the team identifies and arranges all the efforts to be completed in order of importance. The project as well as resource requirements are revealed, along with the technique for producing them. This additionally called "scope management." A task plan is produced outlining the activities, dependencies, tasks, and timeframes. The project manager coordinates the planning of a project budget through price estimates for the labor, materials costs, and equipment. The finances are utilized to monitor as well as control price expenditures during project implementation (Watt and Payne, 2017).

2.4.3 Implementation (Execution) Phase

Of the 3rd stage, the implementation stage, the project program is put into movement and also the job of the project is performed. It's essential to keep up control and also talk as required during setup. Progress is continually monitored and correct changes are manufactured and captured as variances from the initial plan (Payne and Watt, 2017).

2.4.4 Closing Phase

Project closure refers to the set of activities which are needed to technically end the task (Sanghera, 2006). Even though a great deal has been written about beginning as well as executing the task properly but closing the project doesn't discover a lot of presence in the project management literature (Hormozi, McMinn and Nzeogwu, 2000; Havila, Medlin and Salmi, 2013). Havila et al. (2013) point out that fewer than 5% pages in a typical literature artifact discuss project closure. Payne and Watt (2017) explained that in the last closure, or maybe completion stage, the emphasis is on releasing the last

deliverables to the buyer, handing over project proof into the company, terminating supplier contracts, releasing project online resources, and talking the closure of the project to other stakeholders.

2.5 STAGES OF PROJECT CLOSURE

According to (ITRM Guideline - Project Management Guideline, 2006), project closeout consists of key elements as follows:

1. Turnover of project deliverables to operations
2. Redistributing materials - staff, equipment, facilities, and automated systems
3. Closing away financial accounts
4. Completing, gathering, and also archiving task records
5. Documenting the positive results of the project
6. Documenting lessons learned Planning for Post Implementation Review.

Thus, the process of project closure involves turnover of project deliverables, documentation of the project success and lessons learnt, redistributing resources, closing out financial accounts, compiling project records as well as planning of post implementation review. According to the ITRM Project Management Guideline, 2006, the main key concern for project closure is administrative closure and logistics.

For a construction project, the project closure has two basic components, namely, the contractual closure and the administrative closure (Federal Transition Administration, 2006). Contractual closure involves signing off the project by parties to the project. This includes parties following the procedures and actions in each contract terms and

conditions, the permitting authority issuing certificate of beneficial occupancy as well as conducting verification of cost accuracy and contract audit. The administrative closure involves reassigning project staff to other projects be it long and or short term as well as project evaluation (compilation of archives and documentation) and financing halted.

2.5.1 Contractual closure

Contractual closure can be defined as the process of signing off a project according to stipulated terms and conditions. This will involve the verification of the scope of the completed project, contract audit, and final payment and release of retention as stated above. According to the FTA Construction Project Management Handbook (2006), the contractual closure for a construction project should ensure that the following activities are completed and accepted by all stakeholders.

2.5.1.1 Preparation of a punch list

A punch list is an itemized list of significant activities that needs to be undertaken in order to ensure final completion of the construction project. This includes painting works, touch-up carpentry work, fitting of fixtures such as keys, locks, etc. according to Rogers (2012), these are superficial deficiencies that needs to be sorted in order for the construction project to achieve its final completion status.

2.5.1.2 Manuals and training

The contractor really should create as well as show maintenance and operations (OandM) manuals for the facility as well as equipment installed. This offers a short but detailed process on how you can make use of the facility, keep the facility to ensure

longevity and also stay away from crashes that can jeopardize the lifetime of drivers. It must be noted that the manuals should not just be presented but there should be a training, particularly, a hands-on training on equipment use as well as safety tips, FTA Construction Project Management Handbook (2006).

2.5.1.3 Beneficial occupancy

According to the FTA Construction project management handbook “a contract is substantially complete when the permitting authority issues a Certificate of Beneficial Occupancy to the Agency and then the Agency can occupy and begin use of the facility and equipment” (pg. 8-3). Providing the beneficial occupancy certificate, therefore, legalizes the use of the facility.

2.5.1.4 Guarantees and warranties

The contractor should provide a facility/equipment guarantee and warranty. While the guarantee certifies that the facility/equipment does work, the warranty indicates that the contractor will bear the cost of service or replacement of items within a specified period, after which the client will bear the cost. It must be noted that guarantee and warranty of the facility/equipment is initiated with the provision of the beneficial occupancy certificate (Federal Transition Administration, 2006).

2.5.1.5 Record Drawings

This provides a report on the as built condition and reported location of the constructed facility and equipment installed. This is completed by the architect based on the information provided by the contractor, thus the accuracy of the drawings depends on the latter. (Schinnerer and Company Inc., 2007). Although the record is believed to be

accurate and thus reliable, it is usually advised that those who rely on the record drawings should conduct an independent verification before use of the facility (Schinnerer and Company Inc., 2007).

2.4.1.6 Final inspection

According to the FTA Construction Project Management Guideline 2006, the contractor must arrange as well as direct ultimate inspection of the center to verify to stakeholders the facility/equipment is satisfactorily and correctly completed. Final inspection is crucial in a construction project since it provides room for quality checks.

2.4.1.7 Resolve Outstanding Change/Claim Disputes

As part of the project closeout, the contractor is required to ensure any outstanding claims/disputes are settled, thus contributing to the achievement of the project objectives. Disputes/claims can be categorized under procurement, human resource and any other issues that could result in breach of the terms and conditions of the contract, thus resulting into project delay or failure.

2.4.1.8 Obtain project acceptance from principal stakeholders

After the final inspection and resolution of outstanding claims, if any, the contractor is required to obtain project acceptance from the principal stakeholders in the form of a letter or template. This means that the stakeholders do accept the project deliverables taking into consideration the quality specifications.

2.4.1.9 Final Payment

When the above activities are completed, the client is required to approve and make

final payment to the contract. Final payment should be accompanied by other sign off as per the terms and conditions of the project.

2.4.1.10 Commissioning

After the final payment and official close out of the project, the stakeholders commission the facility. The commissioning of the project means the facility as per designed is commissioned to the relevance stakeholders.

2.5.2 Administrative closure

Administrative closure is activities undertaken by the contractor to ensure the redistribution of the project resources (ITRM Guideline - Project Management Guideline, 2006). The activities undertaken include project demobilization, closure of project financing and funding, disposition of project records, project evaluation and stakeholder closure (Federal Transition Administration, 2006). These activities are explained as follows:

2.5.2.1 Project demobilization

Project demobilization has been defined as the completion and removal of the construction debris and manpower resources from a construction site at the completion of contract. The construction debris includes the excesses of sand, stones, wood and electric cables. Although the removal of construction debris is important to the project demobilization process, the importance of the removal of manpower/human resources cannot be overemphasized since it tests the project managers' administrative and interpersonal skills (Federal Transition Administration, 2006). It must be noted that, the project staff in this case are not removed or retrenched but rather reallocated to other

projects and or departments were their services are needed. Thus, it is required that contractor or the project manager prepares a detailed staffing plan for the final phase of the project to clearly spelt out how the project staff will be reallocated (Federal Transition Administration, 2006). This will help improve individual staff efficiency and efficiency of the organization as a whole (ITRM Guideline -Project Management Guideline, 2006). As a best practice, this should be managed not in isolation but in congruent to the human resource management of the organization in order to ease any disquietedness associated with the demobilization process and provide incentives that will encourage the staff remain in the agency (Federal Transition Administration, 2006). Besides, the staff reallocation should be based on performance in order to make the demobilization process effective. It must be noted that the demobilization process should include provisions that will ensure that project staff handover all project materials and properties to ensure accurate records of the assets and property register of the project and the organization as a whole (ITRM Guideline - Project Management Guideline, 2006).

2.5.2.2 Closure of project financing and funding

This process involves the process of finalizing and terminating the financial and budgetary components of the project. This requires all funds released are properly and accurately accounted for. The necessary accounts such as the bank reconciliation statement, project cash book account, purchases orders and other invoices are completely closed (ITRM Guideline - Project Management Guideline, 2006). Further, it involves filing applications and release for final payment and issuance of bank guarantees (Kumar, 2011).

2.5.2.3 Disposition of project records

This refers to the collection and compilation of all pertinent documentation in order to assess whether project deliverables and objectives are achieved. Documents collected and compiled are performance reports, procurement, contracting documents, project schedules and changes in contract. These are then kept in a safe and accessible place for reference purposes (ITRM Guideline - Project Management guidelines (2006); Federal Transition Administration (2006)).

2.5.2.4 Project evaluation

This refers to the process of matching the expected deliverables to the actual deliverables achieve as well as assessing whether the set objectives of the construction project are achieved. This can be done in a stakeholder meeting and or internally among the project staff. During this process the project staff are required to document the lessons learnt which stems from resolving real problems that arise during the construction process (ITRM Guideline - Project Management Guideline, 2006). This can be done in the form of SWOT analysis by indicating the strengths and opportunities of the project, particularly, how weakness and threats were turned to strengths and opportunities in order to achieve the construction deliverables (ITRM Guideline - Project Management guidelines (2006); Federal Transition Administration, 2006)). The weakness and threats could be identified through the risk management process for the construction project. The ITRM Project Management guideline summarizes the process as follows: “Lessons learned typically provide: a brief discussion of the problem to identify its nature, source, and impact; site any references that provide additional detail (references may include project reports, plans, issue logs, change management documents); and general literature or guidance used from another source; and,

recording the corrective actions taken and results”.

2.4.2.5 Stakeholder closure

This refers to the process of accepting the construction by the principal stakeholders, those who funded the project and those who are to use the facility. This may come in the form of a letter and or filling of a construction closeout template/form. Even though verbal statements could be used, this is not encouraged since it may not provide any form of reference in the future. The closure can be crowned with a ceremony to mark the opening of the facility for use (Federal Transition Administration, 2006). From the above, it is evident that contractual and administrative closeout for a construction project are interwoven and iterative. For instance, both closeouts have financial, documentation and stakeholder activities which cannot be undertaken in isolation but rather undertaken together in order to reduce cost, thus making the project economical.

2.6 PROJECT CLOSURE PROCEDURE

Richards (2017) enumerated eight steps to closing a project. These steps are:

Verify job is completed as per the requirements: After the task is closing, all deliverables of the task should have been finished as well as sent to the buyer. You must additionally take formalized acceptance of the buyer for the finished work.

Total procurement closure: Since the project is closing, you need to finish any leftover payments which have been made on the vendors or even partners. The procurement steps may also be carried out.

Acquire formalized acceptance: Formal acceptance of the task along with task deliverables are grabbed through the buyer. Generally, the buyer provides a written document, it may be a contact or maybe a signed paper, that says the project have been

finished and acknowledge the outputs of the task.

Comprehensive final performance reporting: The last overall performance of the project is estimated and also captured. These include cost efficiency, quality performance etc., schedule performance. For example, if the project has been finished under budget or perhaps in case it couldn't be finished, just how a great deal of did the project exceeded the planned spending budget?

Index as well as archive records: Collected papers are finalized. Ultimate variations of the project management programs and all needed papers about the project are archived in the business captures.

Update lessons learned: Lessons learned is collected as well as gathered from all stakeholders. Lessons learned documentation is kept in the organizational method assets of the business.

Hand-off finished item: After the task is finished, the item of the project is handed over because of the usage of the conclusion client. The handover could need a predetermined period of help or maybe a few documents describing how you can utilize or even how you can operate the service.

Launch the materials: After the project is completed successfully, all tasks of the task energy are closed, lessons learned inputs from the project resources are collected after which these materials are introduced respectively.

According to Project Management Institute (2013), project closing needs being conducted at every single phase gate of a task. The closing procedure in a certain phase will help the project management group perform the following:

1. 1. Ensure all the required work in the elapsed phase has been done, and address

- deficiencies as applicable.
2. Obtain approval by the project's sponsor and customer (whether internal or external) for the work completed; therefore, eliminating any debate or scepticism, and addressing any future changes to the work performed.
 3. Review whether or not all organizational governance processes have been executed: Have we obtained all the necessary approvals? Are all the appropriate policies implemented? Have we complied with all organizational procedures? The team can take corrective action as necessary should deficiencies be identified, as well as use findings to guide future phases of the project.
 4. Help the project team address, in retrospect, whether or not the necessary project management processes have been applied. This applies in the horizontal as well as vertical contexts. The difference between the two is the following: a typical horizontal verification includes checking that all the necessary processes were included, for instance, has the team conducted risk analysis or not? While vertical verification tests whether the said processes were implemented to sufficient extent, for instance, has our risk analysis been through enough? Do we need to do more? Or maybe less? The results of this exercise guide the future phases of the project.
 5. Conduct administrative closure of any and all procurements in that specific phase. Assuming an external party was contracted to develop or contribute to the design of a specific product, the phase-gate review is an opportunity for the project team to work with that contractor on closing out the contract.
 6. Conduct formal recognition of the completion of a phase. As a result of all the activities above, all stakeholders will recognize, formally, that a phase has been

completed. The project team is able to establish such consensus and hold the deliverables of the elapsed phase as part of the scope baseline.

7. Many projects continue to progress for months if not years expending organizational resources and effort only to end up with a result that is different from what was projected in the initial business case. The project management team can avoid such failure by ensuring that the project is still in alignment with the organization's strategic objectives. This can be achieved through the periodic validation of the project and its business case, during a phase-gate review.
8. Validate all the assumptions and constraints that planning was based on. It is of great importance to the project team to understand whether their assumptions (elements of uncertainty that were considered to be true for the purpose of planning) are still valid or not, as well as to understand whether certain constraints (elements of uncertainty that were considered to be true in limiting the project management team's options for the purpose of planning) are still applicable.
9. Capture lessons learned is another activity of great value to an organization that is conducted as part of project closing, and the benefit of which is maximized if also conducted during project phase-gate reviews.
10. Lessons-learned capturing is often excluded on the premise that it is an administrative burden of little value. The truth is that through capturing lessons learned, knowledge is documented and is an addition to the organization's wealth and assets.

11. Influence the management of the next phase. Once all the processes above are completed, the project management team will be in a position to comprehensively review its plans for the next phase, or phases of the project.

2.7 CHALLENGES WITH PROJECT CLOSURE

As published in Project Management Tips (2010), the challenges associated with project closure are:

2.7.1 Technical Challenges

1. Start-up issues with new designs or new products
2. Thorough agreement and identification on all remaining deliverables
3. Loss of command of the costs on the task as everything is cooling down individuals begin doing' whatever it takes' getting in the last push usually harming the venture budget
4. Hand-off problems in move to tech support

2.7.2 Project Team Challenges

1. Loss of staff functionality as a few participants finish the tasks of theirs
2. Project workers end up highly involved in startup activities on projects that are new
3. Loss of attention in projects like administrative work and documentation
4. Fear of no future work staff as well as consultants might drag the feet of theirs

2.7.3 Customer Challenges

1. Agreement on what outstanding commitments still exist
2. Absence of a clear hand-off strategy
3. Change of responsible personnel at critical transition points
4. Unavailability of key personnel
5. Difficulty agreeing on signoff on remaining punch-list issues

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter detailed the research methodology used in this study. The chapter focused on the philosophical stand and position of the research, the research approach and the strategy, data collection and analysis. It basically described how the study was done and why the types of methods used were used.

3.2 RESEARCH DESIGN

Based on Adi Bhat, Research style is described as a framework of strategies plus strategies have been picked by a researcher to blend different elements of investigation in a moderately rational way so that the analysis issue is well managed. It offers insights regarding "how" to conduct research utilizing a certain methodology. Every researcher has a summary of research questions which have to be assessed - you can do this with research design. Also according to Barbara, (2006), the performance of a research style is to make sure that the evidence obtained allows you to successfully address the research issue as unambiguously as you can. In social sciences research, obtaining proof applicable on the analysis issue typically involves specifying the kind of proof required to evaluate a concept, to assess an application, or even to effectively explain a phenomenon. Given this particular, the length as well as complexity of investigation designs is able to differ substantially, but some audio design will perform the following things:

1. Identify the research problem clearly and justify its selection,
2. Review previously published literature associated with the problem area,

3. Clearly and explicitly specify hypotheses [i.e., research questions] central to the problem selected,
4. Effectively describe the data which will be necessary for an adequate test of the hypotheses and explain how such data will be obtained, and
5. Describe the methods of analysis which will be applied to the data in determining whether or not the hypotheses are true or false.

Barbara, (2006) adds that there are four types of research designs which are:

1. Exploratory Research: Just like the term implies, it explores, that's finding out about something by responding to the question "what" or maybe "How" way.
2. Descriptive Research: This's more in depth research, which answered the question what and just how.
3. Explanatory Research: This seeks to describe the subject matter being explored and tries to reply to the question what, why and how.
4. Evaluation Research: This's rather considerable as it measures the usefulness of an application.

3.3 RESEARCH APPROACH

Chetty (2016) indicated that analysis strategy is a scheme as well as process which include the actions of wide assumptions to comprehensive technique of information collection, interpretation and analysis, that is based on the dynamics of re-search issue being resolved. Research approach is basically split into 2 categories:

1. approach of data collection and
2. approach of data analysis or reasoning.

3.3.1 Deductive Approach

According to Wilson (2010), deductive strategy is about creating a hypothesis (or maybe hypotheses) based on current theory, and then developing a research technique to evaluate the hypothesis. It's been stated that deductive signifies reasoning from the specific to the common. If a causal link or relationship appears to be implied by a specific case or theory example, it may be accurate in cases that are many. A deductive style may try to determine if this particular link or relationship did get on much more basic conditions, (Gulati, 2009). Deductive strategy could be describe using hypotheses, which could be produced from the propositions of the principle. Put simply, deductive strategy is about deducting conclusions from propositions or premises. Babbie, (2010) explained that deduction begins with an expected pattern “that is tested against observations, whereas induction begins with observations and seeks to find a pattern within them.

3.3.2 Inductive Approach

Inductive method, likewise recognized in inductive reasoning, begins with the observations as well as theories are suggested towards the conclusion of the research activity as an outcome of observations (Melville and Goddard, 2004). Inductive investigation entails the hunt for design from observation and also the improvement of explanations - theories - for all those patterns through sequence of hypotheses (Bernard, 2011). No theories or perhaps hypotheses would implement in inductive scientific studies in the start of the researcher and the research is free in conditions of changing the path for the research after the study process had commenced. It's essential to worry that inductive method doesn't indicate disregarding theories when formulating investigation questions as well as goals. This approach seeks to produce meanings from the information set collected in an effort to recognize relationships and patterns to create

an idea; however, inductive method doesn't stop the researcher from using existing concept to produce re-search question to be investigated. Saunders et. al. (2012) asserted that inductive thought is grounded on understanding from practical experience. Patterns, regularities and resemblances in expertise (premises) are found in order in order to achieve conclusions (or to produce theory).

3.3.3 Research Approach Adopted

Based on the understanding from Section 3.3.1 and 3.3.2 and in line with the set research objectives, this study adopts an inductive approach.

3.4 RESEARCH STRATEGY

According to ([Dinnen, 2014](#)), an Research Strategy is a step-by-step plan of activity that provides guidance to your efforts and thoughts, helping you to do investigation systematically and on schedule to create quality benefits and detailed reporting. This enables one to remain focused, minimize frustration, improve quality and above all, save resources and time. The study Strategy is the nuts as well as bolts of the application of yours, describing the explanation for the research of yours as well as the experiments you are going to do to achieve your desired objectives.

According to (Saunders *et al*, 2009), research strategy assumes as the “*general plan of how the researcher will go about answering the research questions*”. The study classified Research strategy into seven as follows:

1. experiments,

2. surveys,

3. case studies,

4. ethnography,

5. grounded theory,
6. action research and
7. archival research.

3.4.1 Quantitative

Quantitative Research is utilized to quantify the issue through generating numerical data or data which may be converted into functional statistics. It's utilized to quantify attitudes, behaviors, opinions, along with other defined variables - and also generalize results from a bigger test population. Quantitative Research utilizes measurable details to formulate facts and also uncover patterns in investigation. Quantitative data collection techniques are a lot more structured compared to Qualitative data collection techniques. Quantitative data collection techniques incorporate different types of surveys - online surveys, paper surveys, mobile kiosk and surveys, online polls, website interceptors, longitudinal studies, telephone interviews, face-to-face interviews, and systematic observations.

3.4.2 Qualitative

According to DeFranz (2011), qualitative analysis is mainly exploratory research. It's utilized to get an understanding of underlying reasons, motivations, and opinions. It offers insights to the issue or maybe helps to create hypotheses or ideas for potential quantitative investigation. Qualitative Research is likewise used-to uncover trends in opinions and thoughts, and dive more deeply into the issue. Qualitative data collection techniques vary utilizing semi-structured or unstructured methods. A few typical strategies consist of focus organizations (group discussions), participation/observations, and individual interviews. The sample size is normally little, along with respondents are selected to fulfil a certain quota.

3.4.3 Mixed or Triangulated

Kennedy (2009) defined triangulation as the act of combining several research methods to study one thing. The advantages of using mixed methods for social science research have been argued and evidenced by a number of researchers (Creswell, 2003; Miles & Huberman, 1994; Newman & Benz, 1998; Tashakkori & Teddlie, 2003). Among these, the convergent view is that the two methods are complementary and compatible.

There are different ways of combining or mixing qualitative and quantitative research. Kohtamäki et. al. (2018) with reference to (Creswell 2003; Johnson & Onwuegbuzie 2004; Leech & Onwuegbuzie 2009; Onwuegbuzie, Slate, Leech & Collins 2007; Tashakkori & Teddlie 1998; Tashakkori & Teddlie 2003; Teddlie & Tashakkori, 2006) explained that the mixed methods literature presents a variety of typologies of mixed methods design. For example , in Tashakkori and Teddlie (1998) typology, three dimensions are used: the nature of the research (confirmatory/exploratory), data collection and operation (qualitative/quantitative), and data analysis (statistical/qualitative). For Johnson and Onwuegbuzie (2004), a mixed methods design is determined by two primary decisions by the researcher: (a) whether one wants to operate largely dominant paradigm or not, and (b) whether one wants to conduct the phases concurrently or sequentially.

3.4.4 Research Strategy Adopted

This study adopts a qualitative research strategy as explained in section 3.4.2.

3.5 RESEARCH STYLE

According to Virginia Tech (2018), research style has to do with the decision about precisely how to gather data. Most often used options include observation /participant

observation, surveys, interviews, focus groups, experiments, survey, case study, secondary data evaluation or archival analysis, diverse Methods (combination of several of the above). One specific technique might be much better suited to a research objective compared to others, as the information collected from various methods is going to be completely different in quantity and quality.

3.5.1 Experimental research

It's a really systematic procedure that demands a regular scientific approach. For starters, the researcher identifies an issue, forms a question, does the investigation, after which predicts a solution to the issue in the kind of a hypothesis. Then, we performed several experiments which caused us to evaluate the information to find out if it backed up the claim of ours. This specific analysis entails comparisons of variables below manipulated problems in controlled environment or lab. Example: physics, chemistry, engineering these self-discipline entails applied experimental investigation, Uzzal (2017).

3.5.2 Action Research

Action Research is a consistent, systematic and cyclical practice of reflecting, analyzing, and also enhancing the quality of commercial methods as well as methodologies which are particular to immediate environment or a field (Mertler, 2013). Action Research, seeks localized techniques for particular problems, providing answers which effect and improve all of the individuals active in the analysis. Action Research seeks to close the lifestyle gap and close the distance between practitioner and scientist (Walker, 2018). The levels or stages in action analysis are as follows: determining a typical issue or concern, reflecting, evaluating, implementing, action planning, and self-evaluating. Example: Used in training, organization, teacher's

responsibility, employee's motivation, pupil's commitment etc. (DocBonBon, 2014).

3.5.3 Case Study Research

It's an empirical inquiry which investigates a contemporary occurrence within its real life context; once the boundaries between phenomenon as well as context aren't clearly evident; and where several energy sources of proof are used. Case study analysis design has developed in the last several years like a helpful tool for examining specific situations and trends in numerous medical disciplines e.g. social science, psychology, ecology and anthropology. In performing case study analysis, the "case" getting studied might be a private, or action, event, organization, present in a particular place and time. Whenever the case study is all about a team, it talks about the actions of the number as an entire, not the behavior of every person in the team. Nevertheless, when "case" is utilized in an abstract sense, as in a case, a proposition, or maybe an argument, these kinds of a situation is often the topic of countless investigation techniques, not only case study analysis. Case studies could involve both quantitative and qualitative research methods. Example: impact of drug or medicine on a person Or a segment or a group; effect of a policy on a particular part of population etc.

3.5.4 Survey Research

Survey research is a method of collecting information by asking questions. Sometimes interviews are done face-to-face with people at home, in school, or at work. Other times questions are sent in the mail for people to answer and mail back. Increasingly, surveys are conducted by telephone.

3.5.5 Research Style Adopted

This study is a survey because it is designed to collect information on the subject matter from the project management team of the GPHA by asking questions.

3.6 DATA COLLECTION

Rouse (2014) defined data collection as an organized method of gathering and measuring info coming from an assortment of resources to get an accurate and complete image of a space of interest. Information compilation enables an individual or maybe group to answer questions that are relevant, assess results and make predictions about succeeding trends and probabilities. Investigation Methodology (2019) further discussed information collection as procedure for obtaining info from all of the pertinent options to uncover solutions to the analysis issue, test the hypothesis and assess the results.

Data collection techniques could be split into 2 categories: secondary techniques of primary methods and data collection of data collection. Secondary information is a kind of data which has already been printed in books, journals, magazines, newspapers, internet portals etc. Primary data collection methods could be split into two groups: qualitative and quantitative. Quantitative data collection methods are derived from mathematical calculations in different formats. Techniques of quantitative data collection along with analysis include questionnaires with closed ended questions, methods of regression and correlation, mean, mode as well as others and median. Qualitative study strategies, on the contrary, doesn't entail numbers or perhaps mathematical calculations. Qualitative research is directly connected with words, emotions, feelings, sounds, colors along with other elements which are non-quantifiable.

3.6.1 Sources of Data

There are two sources of data collection techniques. Primary and Secondary data collection techniques, (Manu, 2013).

3.6.1.1 Primary Data

A primary data source is an original data source, that is, one in which the data are collected firsthand by the researcher for a specific research purpose or project (Salkind, 2010). Primary data is data that is collected by a researcher from first-hand sources, using methods like surveys, interviews, or experiments. It is collected with the research project in mind, directly from primary sources (Stephanie, 2018). There are different types of primary data and they are used according to the type of study. Some of the most prominently used methods of primary data collection include observation, interview, questionnaire and experiments (Sahifa, 2013).

The research instrument for this study would be interview.

3.6.1.2 Secondary Data

Secondary details are the data which have been previously collected by and being sold from some other sources. Such data are more and cheaper quickly possible than the main data and in addition might be available when primary data can't be obtained at all.

3.7 POPULATION OF THE STUDY

The scope and target respondents for this research comprise staff of the project engineering department comprising the project engineer and four assistants, heads of engineering department and their deputies and the estate manager.

3.7.1 Sampling Technique

This study adopts a purposive sampling technique. A purposive sample is a non-probability sample that is selected based on the characteristics of a population and the objective of the study. Purposive sampling is also known as judgmental, selective, or subjective sampling (Crossman, 2018). Foley (2018) also explained purposive sampling as a form of non-probability sampling in which researchers rely on their own

judgment when choosing members of the population to participate in their study. One can also say that purposive sampling is when researchers thoroughly think through how they will establish a sample population, even if it is not statistically representative of the greater population at hand. Purposeful sampling is popular in qualitative exploration for the identification as well as choice of information rich cases associated with the trend of interest.

While there are many different purposeful sampling methods, criterion sampling seems to be used most often in implementation analysis. Nevertheless, combining sampling techniques might be better on the aims of implementation investigation plus more in line with the latest advancements in quantitative methods (Palinkas 2015) According to Stephanie (2015) an advantage of this type of sampling is that it's easier to make generalizations about your sample compared to, say, a random sample where not all participants have the characteristic you are studying. A disadvantage of purposive sampling is that there is simply no planned bias in purposive sampling. Nevertheless, as a result of an absence of arbitrary sampling, purposive sampling is often ready to accept selection bias and error. Even in case you attempted to eliminate selection bias on the very best of the ability of yours, it could be hard to protect the choices of yours for participants. Kinds of purposive sampling includes:

1. Critical Case Sampling: collecting cases which are prone to provide you with almost all info regarding the trend you are learning.
2. Expert Sampling: Sampling to eat just those with expertise in a particular region.
3. Extreme Case Sampling: this method focuses on participants with special or unique attributes.
4. Homogeneous Sampling: collecting an extremely particular set of individuals. For

instance, college educated, age 20-24, male.

5. Maximum Variation Sampling: collecting a broad range of individuals with various viewpoints to learn a particular occurrence. Could uncover usual themes.

6. Total Population Sampling: the whole public, who discuss common qualities, is studied.

7. Typical Case Sampling: enables the researcher to get a profile about what's average or normal for a specific occurrence.

3.7.2 Sample Size

The sample size of a survey generally describes the quantity of devices which were selected from which information have been gathered. There's the designated sample size, and that is the variety of sample devices selected for contact or maybe information compilation. There's additionally the last sample size, and that is the amount of completed units or interviews for which data are in fact collected. The last sample size might be much lesser compared to specified sample size when there's a lot of nonresponse, ineligibility, or perhaps both (Lavrakas, 2008). According to (Bartlett, et al. (2001); Israel, (n.d.)), sample size can be determined in the following ways:

Conduct a census for a small population. A "small" population is going to depend on your time and budget constraints. For instance, it might take one day to have a census of a pupil body in a tiny personal faculty of 1,000 pupils however the researcher might not have enough time to survey 10,000 pupils in a big state faculty.

The proposed sample size for this study is seventeen (17) by conducting census considering the population size and time constraints.

3.8 DATA ANALYSIS

Data Analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data. According to Shamoo and Resnik (2003) various analytic procedures “provide a way of drawing inductive inferences from data and distinguishing the signal (the phenomenon of interest) from the noise (statistical fluctuations) present in the data”.

While data analysis in qualitative study is able to consist of statistical methods, many times examination becomes a continuing iterative procedure whereby information is continually collected as well as examined almost concurrently. Certainly, researchers usually evaluate for patterns in observations with the whole information collection stage (Savenye, Robinson, 2004). The kind of the evaluation is driven by the particular qualitative strategy taken (field learn, ethnography content analysis, oral history, biography, inconspicuous research) as well as the type of the information (field notes, audiotape, documents, videotape). This study applies both descriptive and inferential statistics. Descriptive figures are short descriptive coefficients which summarize a certain data set, which could be sometimes a representation of the whole or maybe a test of a population. Descriptive figures are divided into actions of main measures and tendency of variability (spread). Measures of main tendency are the mean, median, and also function, while methods of variability are the regular deviation, variance, the bare minimum as well as maximum variables, as well as the kurtosis and skewness (Kenton, 2019). With inferential statistics, the researcher is trying to reach conclusions that extend beyond the immediate data alone. For instance, the researcher uses inferential statistics to try to infer from the sample data what the population might think. The majority of the main inferential figures are derived from a broad household of statistical designs generally known as the General Linear Model. This consists of the t test,

Analysis of Variance (ANOVA), Analysis of Covariance (ANCOVA), regression analysis, and lots of the multivariate techniques as component analysis, multidimensional scaling, cluster analysis, discriminant functionality analysis, etc. (Trochim, 2006).

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

This section of the study explain data collected through interview. The findings are the deduced data together with the thoughts and interpretations from the researchers. Table 4.2 shows the number of respondents interviewed and their designation.

Table 4.2: Table of interviewees and their designation (Personal interview of project engineers and supervisors at GPHA)

No.	Name	Designation
1	Eugene Ofori	Project Supervisor
2	Elorm Agbagbe	Project Engineer
3	Kofi Inkoom	Project Engineer
4	Stanley Annor	Project Engineer
5	Adams Goka	Project Supervisor
6	Joseph Seripenah	HOD and Project Engineer
7	John Baidoo	Project Supervisor
8	Anthony Koomson	Project Engineer
9	Edmund Badu Mensah	Asst. HOD and Project Engineer
10	Stephen Arthur	Asst. HOD and Project Engineer
11	Benjamin Narh	Project Engineer
12	Gordon Arthur	Project Supervisor
13.	Rexford Asante	Project Supervisor
14	Cephas Agbagbe	Project Supervisor
15	Brown Yakah	Project Supervisor
16	ING Francis Anani	Asst. HOD and Project Engineer

17	Michael Annan	Project Supervisor
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4.3 FINDINGS FROM INTERVIEWEES

This section summarizes the findings section in our thoughts. The data from the interviews along with the framework, stated earlier in the thesis, are the platform for what has been presented below. We have applied the findings on the theoretical framework to see if the theories correspond to reality. We also intend to answer the research questions we have been investigating throughout the whole research period.

4.3.1 What are the major challenges with project closing procedures adopted by GPHA?

From the interview discussions the researcher found that GPHA has over the years encountered a number of major challenges with closing projects. Documentation requirements; Complete drawings; Final report; Provision of people trained on operating product of facility; Customer training; Project audit; Update risk and work registers; Settle all invoices; Equipment and hire returns; Warranties and guarantees settled; Update financial systems; Document lessons learned.

4.3.2 What Project Closing Procedures will be most appropriate for closing projects at GPHA?

The discussion highlighted the procedures most appropriate for closing projects in GPHA. (Interviewee 2, see Appendix II). The communication between the different parts of the project like steering committee, managers, developers and analysts. The better the planning is done, the better the outcome is in most cases. It is a matter of being well prepared for what will be done in stages. Conflicts within the project team, interaction with the maintenance team, motivation, and bringing the problems to surface

emerged as key factors during the discussions.

4.3.3 How do project closing procedures of the GPHA compare with best practices?

In order to achieve this objective, the researcher considered this five aspects: project, finances, project documentation, personnel, and resources. With respect to project, the following questions were asked:

1. Have all activities in the project plan been completed?
2. Have all work orders been completed?
3. Have all contracts been completed?
4. Have all outstanding commitments been resolved?
5. Has the client or customer accepted the final product(s)?
6. Are all deliverables completed?
7. Has agreement been reached with the contractor on the disposition of any remaining deliverables?
8. Have external certifications and authorizations been signed and approved?
9. Have all audits been completed and issues resolved?
10. Have ongoing maintenance procedures been activated?

All respondents answered yes to each of the questions as can be seen in Appendix II. This is an indication that GPHA meet best practices in closing project looking at this specific aspect.

With respect to finances, the following questions were asked:

1. Have all payments been made to vendors and contractors?

2. Have all costs been charged to the project?
3. Have project accounts been closed?
4. Have remaining project funds been returned?

To the questions asked to know whether issues with closing of projects with regards to finance, but for interviewee 4 (Appendix II) who responded thus: “*No. The projects are fine tune to the smallest detail and payment is made strictly as per the contract*” the dominating response from all other respondents was “yes”.

In checking to find out whether a project has been closed properly, it was seen from literature that project documentation is key. With respect to this particular aspect, the researcher asked the following four questions:

1. Have project plans and supporting documentation been revised to reflect the “as-built” condition?
2. Have final project reports been prepared and distributed?
3. Has the project plan been achieved with supporting data?
4. Have “lessons learned” been documented, shared with appropriate people, and archived with the project plans?

Similarly, the responses to each of the questions asked about project documentation were similar. The respondents indicated “yes”. In an attempt to justify why the final project report has to be prepared and distributed, interviewee 4 explained:

“In all cases to ensure that the contractor does not make claims through any other department especially finance unknown to the civil Engineering Department.”

Regarding personnel as part of the checklist for project closure, the following questions were asked:

1. Are all parties aware of the pending closeout?
2. Have efforts been recognized and rewarded?
3. Have project personnel been reassigned?

The respondents indicated ‘yes’, but with varying follow-up responses. For instance, about whether all parties are aware of the pending closeout, interviewee 9 responded thus:

“Yes. Through an email letter to all stakeholders at least a week before project closure.”

However, on the question of personnel being recognized and rewarded, Ing. Anthony Koomson replied thus:

“No. You are here to work, when you do it all, Good! But when it goes bad, you have a query.”

Eugene Ofosu responded. *“No. It is assumed in GPHA that, it is your job and hence no need.”*

4.2 LESSONS LEARNT FROM INTERVIEW

4.2.1 Start with the end in mind

It emerged from the discussions that it is important to keep project closure in mind while starting the project.

“Project starts from inception to completion. If a project is not closed, it means it is

still running and you have not run a successful project. The project is void.”

A number of respondents stressed the need to think about project closing procedure from the beginning of the project. That is at the planning stage.

“For me, I usually think about how the project will be closed right from the onset of the project. It is good to know where you are going before you even set off for a journey. By so doing it keeps you on track.”

All the tasks that need to be done during project closure must be defined, planned and accounted for while preparing the project plan. As far as possible, adequate time should be given to closure phase so that the project members are not rushed and none of the activities get missed out.

“... right from the beginning of the projects, we usually do a lot of planning at this stage.”

4.2.2 Start preparing for project closure well in advance

All the respondents talked about starting the preparations for project closure in advance.

“We mostly plan for project closure for a couple of weeks or may be sometimes months in advance.”

For short term projects it might be easier to do so since the project is small and closure phase is not too far in the time plan. But for long term projects it is important to plan for closure phase in advance.

“For the smaller projects it is not normally a problem because they are small and their teams are really small. So in that case I usually get in touch with the project manager two weeks before the project should end and ask how you are going to wrap thing up.

For the larger projects I talk to project managers approximately two months before the end date.”

4.2.3 Pay attention to documentation

The importance of documentation was brought up during the discussions. Document everything that needs to be documented. Since the project team gets dismantled once - the project gets over it becomes necessary to document all events during the project execution from which you can extract information necessary for project closure

“Write a project closing report... Try to document the system, may be hopefully part of the system before if not in the last phase, make sure that every document that needs to be written is written.”

Project closing report is one of the important documents that needs to be prepared in project closure phase.

4.2.4 Learn the lessons well

An important part of project closure is to reflect on what went well in the project and what could be done better. It helps to conduct post mortem of the project and document the lessons. These lessons can be, and should be, used for upcoming projects. It would be extremely disconcerting if similar mistakes are repeated over and over in different projects.

“Try to summarize the project, to learn what has been good and what can be done better next time.”

4.2.5 Communication is the key

The importance of communication was brought up during the interviews. Clear and good quality communication among all project personnel is important.

“...there is a need to keep all in the project informed about progress of work and expectations ahead...if you like, you can say that people need to know what is happening, how things are going, where we are in the project...”

The project manager needs to ensure that the team members know what is happening in the project. Communication can help to resolve the conflicts that emerge during the closure phase. At the beginning of the project, preparing a communication plan can help to reach the right people.

“...having seen the need to keep all involved in the project informed, make a communication plan on how to inform these people, then the important documentation of what plans you may have should be written down in the project documentation. Just to see when a deadline comes you can also see which people to talk to.”

4.2.6 Check the checklist

Two of the managers stressed upon the importance of having a well-maintained checklist and consulting it while closing the project.

“...should go through a checklist of the requirements to see that everything has been going as it should.”

It helps to have regular meetings with project team members to exchange information, to address the problems and their resolutions, to discuss the status of the activities and share upcoming changes in the situation of the project.

“Yes sort of, something that I feel is important as well is to have a meeting each morning with the project team and go through the tasks for every individual and also state if there are any problems inside the group that can be handled by all team members instead of keeping the problem for you. This you can do to check everyone and it builds

a team.”

It emerged from the discussion that checklists help to ensure that the tasks are not missed out while rushing to make it to the scheduled time and help to keep track of the personnel who should be involved with the activities.

“if you don't plan the handover from the start then there is no one to receive result. So that's al- ways the problem. ...You need to have decided at the start who receives this and how shall this be done.”

4.2.7 Engage the maintenance team & customer early in project life cycle

The importance of liaising with the maintenance team early in the project life cycle was highlighted by the managers. There are situations when the maintenance team is not ready to accept the deliverables and the situation becomes problematic.

‘Through experience there is a problem when the maintenance team says no to the deliverable. That's why we want to have the maintenance team in the early stages so they can see and be part of the building process and therefore have an understanding if something is missing’

Similarly, the significance of engaging with the customer was stressed upon to ensure that the outcomes match with the planned requirements.

‘We feel that what we deliver in the end becomes better when customer has been involved as much as possible.’

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This section discusses the main findings of this study in relation to proposed research questions. The implications of this study and suggestions for further research are also discussed in this section.

5.2 Results discussion

The purpose of this study was to investigate the practical aspects of project closure handling in Ghana public sector organizations. The semi-structured interviews with project managers helped to delve deeper into the practicalities of project closure.

It was observed that comprehensive planning is the key to be well prepared for handling project closure and for any surprises that come up during the closing phase. The project manager needs to determine the factors that could affect the project closure. Although the lessons from earlier projects can be drawn to execute project closure, it is worthwhile to mention that same practices might not be applicable for each project closure.

It emerged from the discussions that regular meetings with the project team & project stakeholders and checklists are good aids for project manager to keep track of the closing phase. During the project closure the project manager needs to ensure that reviews are conducted and documented.

Although the findings lean towards managerial perspective, but the answers do help to address practical aspects of project closure. Though it is possible that not all the findings can be generalized for project closures across all the public sectors.

5.3 Methods discussion

This study takes a descriptive approach to the problem as indicated by the research questions. The responses from the interviews, leveraged by the theoretical understanding, have been used to gain a deeper understanding of project closure from a managerial perspective. This study is a qualitative one as we conducted semi-structured interviews to collect data.

The primary method of data collection for our investigation was limited to interviewing method. Consequently, the findings have been drawn from the inputs provided by the project managers. The usage of only one method for collecting the data can be seen as a limitation. Using the observation method or case study could have been another approach to get a detailed insight in the closing of the project. But we didn't observe in reality how project closure is carried out. There might be a different set of data which could be available from those first-hand observations.

Another aspect of the investigation is that the research concentrates on the viewpoints of project managers. It is probable that the project members and project stakeholders might have different viewpoints on project closure.

The decision to do semi-structured interviews with project managers was consciously done since the timeframe didn't allow us to approach the investigation by combining different methods and broadening our perspectives.

5.4 Implications for research

This study contributes to project management literature as it tries to bind slightly odd couple – project management and public-sector. Instead of focusing on the premises of project closure, this study provides a view on how project closure is actually handled and executed by project managers. Additionally, the study revealed that project

maturity and IT governance need to be considered for their role in project closure.

5.5 Implications for practice

The findings of this research orientated towards managerial aspects of project closure in Ghana public sector organizations. Furthermore, the findings concentrate on the practical aspects of project closure. The study shows that project closure merits meticulous planning from the very start of the project. In addition to planning the closure phase, the project manager needs to implement certain mechanisms to check the progress of project closure and ascertain that the project closes successfully. The study brings out an interesting point that it is not enough to just handover projects or any other projects for that matter, but it is important to involve everyone that should play a significant role in ensuring that the project closes successfully from the onset.

5.6 CONCLUSION

This particular thesis concentrates on project closure - a crucial stage in each and every project's life cycle. Furthermore, it explores designed IT and civil engineering challenge closure in Ghana public sector. Of the study conducted in this research you will find numerous very good points which are explained more. The project closure stage is generally not given a lot of interest in contrast to the civil engineering tasks when preparing and planning for task closure.

In this particular study the semi structured interviews were the main information source and provided soil for our results and understanding in the analysis area. The project managers, interviewed from the GPHA have furnished the inputs and also have really helped making this research helpful.

We discovered that project closure isn't a hard phase to deal with if properly managed in the first stages. Preparation and planning on the closure stage are as vital as executing

the venture. Apart from considering there needs to become a closing procedure that everybody knows and it is knowledgeable about.

5.7 Further research

This study shows how planned project closures are managed. Furthermore, the research concentrated on two Ghana public sector organizations. There are some limitations which could be tackled in later studies. The future scientific studies are able to investigate handling of task closures in various other public sector organizations. The additional public sector organizations may possess an alternative perspective on managing task closures due to the earth those organizations work in.

Additionally, this particular study has devoted to planned IT and civil engineering challenge closures. The study scope may be broadened to learn unplanned project closures in various places. The study of task closure handling in outsourced tasks could be tackled in later studies. This research concentrated on project manager's perspective. For future research the respondents can include the project team members, stakeholders, and the maintenance team.

As an additional suggestion for future work, a comparative evaluation of project closures in public sector as well as private sector companies, could be performed. The comparative study could be performed in organizations in various countries and just how an organization 's culture impacts project closure.

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APPENDIX I: INTERVIEW QUESTIONS GUIDE

SECTION A: Demographics

Ask questions to provide a background of your interviewee.

SECTION B: Project closing procedures

In your opinion, is project closure formally taken up?

At what stage of project management do you start preparing for project closure?

How do you determine that it is time to start the project closure task?

With which activities do you start with the project closure?

SECTION C: Challenges with closing projects

What are the challenges you face during project closure?

What reasons account for these challenges?

SECTION D: Comparison of project closing procedures with best practices (Ask the following questions based on a specific project undertaken by the GPHA).

1. Project

Have all activities in the project plan been completed?

Have all work orders been completed?

Have all contracts been completed?

Have all outstanding commitments been resolved?

Has the client or customer accepted the final product(s)?

Are all deliverables completed?

Has agreement reached with the client on the disposition of any remaining deliverables?

Have external certifications and authorizations been signed and approved?

Have all audits been completed and issues resolved?

Have ongoing maintenance procedures been activated?

2. Finances

Have all payments been made to vendors and contractors?

Have all costs been charged to the project?

Have project accounts been closed?

Have remaining project funds been returned?

3. Project documentation

Have project plans and supporting documentation been revised to reflect the “as-built” condition?

Have final project reports been prepared and distributed?

Has the project plan been archived with supporting data?

Have “lessons learned” been documented, shared with appropriate people, and archived with the project plans?

4. Personnel

Are all parties aware of the pending closeout?

Have efforts been recognized and rewarded?

Have project personnel been reassigned?

5. Resources

Has excess project material been dealt with?

Have project facilities, equipment, and other resources been reallocated?

SECTION E: Procedures more appropriate for closing GPHA projects

In your opinion, what procedures do you think will be more appropriate for closing projects undertaken by GPHA?

Do you have reasons to support your opinion?