

**EFFECTS OF DELAYS IN COMPLETION OF HEALTH FACILITIES FOR
LOCAL COMMUNITIES: A CASE OF THE NINGO PRAMPARAM DISTRICT**

By

Senyo Kodzo Andrew Buamah
(Bsc. Accounting)

A thesis submitted to the Department of Construction Technology and Management,
Kwame Nkrumah University of Science and Technology, Kumasi in partial
fulfillment of the requirement for the award degree of

MASTER OF SCIENCE IN PROJECT MANAGEMENT

November, 2019

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.

Senyo Kodzo Andrew Buamah
(PG 5323418)	Signature	Date

Certified by:

Prof. Bernard Kofi Baiden
Supervisor	Signature	Date

Certified by:

Prof. Bernard Kofi Baiden
Head of department	Signature	Date

ABSTRACT

The high rate of abandoned projects in Ghana have become topical in most intellectual discussions today. The rate at which health construction projects have been discontinued by new governments are alarming therefore, the aim of this research was to investigate the effects of delays in completion of health facilities for local communities in Ningo Prampram. The specific objective of the study includes; to identify the causes of delay in completion of health facilities in the Ningo Prampram District; to examine the effect of delay in completion of health facilities in the Ningo Prampram District and to provide measures on timely delivery in completion of health facilities in the Ningo Prampram District. The study adopted the quantitative approach to research with mainly a deductive and or descriptive research design. These designs helped the researcher to provide information and describe them using narrative of figures which represent the opinions expressed by the respondents. The study used purposive. These sampling techniques helped the researcher draw out samples of about 40 respondents who knew so much about health projects and their impacts on the Ningo Prampram District. In other to solicit information from the respondents without recording any form of bias, a closed ended questionnaire was used to draw out strict and coherent responses that were in line with the research objectives. The analysis of the study was conducted using descriptive statistics as well as inferential statistics in the form of regression analysis. The regression analysis was used to test the effect and significance of delay in completion of the health facilities at Ningo Prampram.

The study results showed from the regression analysis that there is a positive effect of delay in completion projects of health facilities in Ningo Prampram. Secondly the study accomplishes that, there is a significant association between delay in completion and the nature of health facilities in Ningo Prampram. Addressing financial issues in relation to project completion, hiring the right staff for the right job, and availability of the raw materials were the key measures for ensuring project completion.

Keywords: Delay of completion, health facilities, local communities

TABLE OF CONTENT

DECLARATION.....	ii
ABSTRACT.....	iii
TABLE OF CONTENT.....	iv
LIST OF TABLES	vii
ACKNOWLEDGEMENT	ix
DEDICATION	x
CHAPTER ONE.....	1
INTRODUCTION	1
1.1 BACKGROUND TO THE STUDY.....	1
1.2 PROBLEM STATEMENT	3
1.3.1 Aims	3
1.3.2 Objectives	4
1.4 RESEARCH QUESTIONS.....	4
1.5 SCOPE OF RESEARCH	4
1.6 RESEARCH METHODOLOGY	4
1.7 SIGNIFICANCE OF THE STUDY	5
1.8 STRUCTURE OF REPORT	5
CHAPTER TWO.....	7
LITERATURE REVIEW.....	7
2.1 INTRODUCTION	7
2.2 THE NATURE OF THE CONSTRUCTION INDUSTRY.....	7
2.3 OVERVIEW OF SCHEDULE DELAYS.....	9

2.4 DELAYS IN CONSTRUCTION INDUSTRY	11
2.5 CAUSES AND EFFECTS OF DELAYS IN CONSTRUCTION PROJECTS.	12
2.6 MINIMIZING CONSTRUCTION DELAYS	14
2.7 EMPIRICAL LITERATURE	15
CHAPTER THREE.....	21
RESEARCH METHODOLOGY	21
3.0 INTRODUCTION	21
3.1 RESEARCH DESIGN	21
3.2 POPULATION OF THE STUDY	21
3.3 SAMPLING TECHNIQUE.....	22
3.4 DATA COLLECTION	22
3.5 DATA ANALYSIS	22
3.6 CHAPTER SUMMARY	23
CHAPTER FOUR	24
DATA ANALYSIS AND DISCUSSION FOR FINDINGS	24
4.1 INTRODUCTION	24
4.1.1 Survey Respondents	24
4.2 DEMOGRAPHIC DATA ANALYSIS (RESPONDENT).....	24
4.2.1 Gender of Respondents	24
4.2.2 Respondents age.....	25
4.2.3 Educational Backgrounds	26
4.2.4 Nature of Health facilities in Ningo Prampram	26

4.3 THE CAUSES OF DELAY IN THE COMPLETIONS OF HEALTH FACILITIES AT NINGO PRAMPRAM	27
4.3.1 Discussion of the First Three Variable.....	29
4.4 THE EFFECTS OF DELAY IN THE COMPLETIONS OF HEALTH FACILITIES AT NINGO PRAMPRAM	30
4.5 MEASURES OF DELAY IN THE COMPLETIONS OF HEALTH FACILITIES AT NINGO PRAMPRAM.....	33
4.5.1 Discussion of the First Two Variables	35
CHAPTER FIVE	37
CONCLUSION AND RECOMMENDATION.....	37
5.1 INTRODUCTION	37
5.2 SUMMARY	37
5.3 CONCLUSION	39
5.4 RECOMMENDATION	40
5.5 FURTHER STUDIES.....	40
REFERENCES	41
APPENDIX	45

LIST OF TABLES

Table 4.1 Health facilities in the community at the completion stage	26
Table 4.2 Reliability Statistics	27
Table 4.3 Usage of Construction Debris.....	28
Table 4.4 Reliability Statistics	31
Table 4.5 Reliability Statistics	34
Table 4.6 Measures.....	34

LIST OF FIGURES

Figure 4.1: Gender of Respondents	25
Figure 4.2: Age of respondents	25
Figure 4.3: Educational Background	26

ACKNOWLEDGEMENT

I express my profound gratitude to my supervisor for his guidance and supervision. My profound gratitude is also extended to all respondents for taking time off their busy schedule to respond to the questionnaire.

My final appreciation goes to students and lecturers of the Department who in one way or another helped in fine-tuning the contents of this research.

DEDICATION

To my beloved wife Mrs. Marian Buamah for your support and encouragement and also friends and family for their immense contribution to my academic achievement, I dedicate this work to you.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

The importance of time on health project completion is almost inevitable as long as the health of individuals are concerned. According to Wang and Sun (2016) this is because of the specialty given to health projects and the fact that their construction timelines, style and uniqueness largely differs from all other kinds of projects.

Universally, projects are influenced by their activity timelines. Therefore, health project constructions are not alien to this rule. According to Sahoo and Dash (2010) health projects are unique in the way they are built and have huge risks attached to them compared to other projects. Sahoo and Dash (2010) also indicated that the process of putting up a health facility have its cost, time and risk components. Most often these risks and costs are not seen with the naked eye or recorded in the accounting books but are easily realizable with the amount of energy exerted in building such structures. Frimpong (2003) however added that, the project expectations of health projects in general are quite unrealistic and stakeholders as well as contractors are found cutting corners and not following the right path in constructing the health facility. According to Frimpong (2003) project completion is variously defined to mean the process of ensuring specific goals, objectives and scheduled timelines are adhered to within realizable time frame. According to Frimpong (2003) when projects are completed it means there are no more activities needed and that technical performance, budgetary cost and schedule have all been adhered to. In order that project completion is ensured many factors come to play including project management tools and raw materials. Project management includes but not limited to the importance of ensuring project

completion on schedule without any delays. Delay in project completion has major side effects and can affect a community's entire project. Most importantly delay in health projects can influence a community's ability to secure health care when the need be. Ghanaian scholars such as Frimpong (2003) have indicated that an effective project management is one that avoids delays in projects and includes the required tools and techniques required for the completion of projects. Project management involves the proper handling of resources workers, machines, money, materials and methods used.

Assessing construction projects delivery time is critical in today's market-driven economy. To improve the economy and maximize long-term return on this public investment, government agencies have recently started utilizing new types of contracting methods that are designed to achieve multiple project objectives, including minimizing construction cost and duration, while maximizing its quality.

In recent years, many departments of transportation, in various states have started to apply new highway contracting methods, including: Bidding on time i.e., to encourage competition among contractors to minimize project duration. Incentive/ disincentive contract clauses that provide financial incentives to reduce construction duration, Night time construction that seeks to cut service disruption and project time by requiring contractors to work during off-peak night time hours, Warranty contracting that attempts to improve construction quality by making contractors liable for the performance of the facility after project completion. These new and emerging contracts place an increasing pressure on decision makers in the construction industry to search for an optimal/near-optimal resource utilization plan that minimizes construction time while maximizing its quality. This creates new and pressing needs for advanced

resource utilization models that are capable of optimizing the multiple and conflicting objectives of construction time, cost, and quality.

While the above research study seeks to provide significant contributions to the area of optimizing construction resource utilization, there has been little or no reported research focusing on multi objective models for optimizing construction time, cost, and quality.

1.2 PROBLEM STATEMENT

Misallocation and misperception of time factor in construction projects have resulted in the government of Ghana paying more than necessary for many projects. Improper time assessment can also cause additional costs in the form of delays which result in poor utilization, increasing social and economic costs. Frimpong (2003) identified five factors, out of a list of 26, as the major causes of delays to projects in Ghana as: monthly payment difficulties to contractors, poor contract management, material procurement difficulties, poor technical performance and material price escalations. They recommend effective and efficient management of projects as the ultimate solution to time overruns. More recently, Fugar and Agyakwah-Baah (2010) also reiterated that delays in construction projects are still endemic in Ghana. This study seeks to find answers to the following concerns such as; the major causes of delays? What effects do the delays have on the projects? Are there remedies to these situations? These are some of the situations that have prompted the researcher to go deep into the assessment of health projects.

1.3.1 Aims

The aim of the study is to explore the effects of Delays in Completion of Health Facilities in the Ningo Prampram District.

1.3.2 Objectives

1. To identify the causes of delays in completion of health facilities in the Ningo Prampram District.
2. To examine the effect of delays in completion of health facilities in the Ningo Prampram District.
3. To explore the measures on timely delivery of completion of health facilities in the Ningo Prampram District.

1.4 RESEARCH QUESTIONS

1. What is the causes of delay in completion of health facilities in the Ningo Prampram District?
2. What effect does the delay in completion of health facilities have on the Ningo Prampram District?
3. What measures are available on timely delivery of completion of health facilities in the Ningo Prampram District?

1.5 SCOPE OF RESEARCH

The study focus on identifying the effects of delays on completion of health facilities. A case study of Ningo Prampram District and to identify the measures on the timely delivery of completion of health facilities in the Ningo Prampram District. And the strategies needed to mitigate the challenges faced by construction managers. The geographical location for this research was Ningo prampram.

1.6 RESEARCH METHODOLOGY

Before the decision on a research strategy is made, the philosophical foundations of the different strategies have to be checked. Inductive research approach will be adopted as the study seeks to test existing theory emerging from data to be collected. The study

will employ quantitative research approach. Firstly, a literature review of existing literature will be adopted to collect data and information related to the research discipline. Based on previous study, a close-ended questionnaire will be formed. A time frame not exceeding one week will be allowed for the collection of the primary data while secondary data from both publish and unpublished sources will be collected over the entire period of the study. Statistical Package for Social Scientist version 25 will be used to code the questionnaire and Mean Score Ranking was used to analyse the data.

1.7 SIGNIFICANCE OF THE STUDY

This study is significant in several ways. This study will provide information on the successful completion as well as delay of health projects in Ghana. The study will provide information and new knowledge to researchers and or readers in the field of health construction. The study will outline the benefits of timely delivery of health projects and the challenges thereof.

1.8 STRUCTURE OF REPORT

The study will be up made of five (5) chapters. Chapter one (1) which is an introduction to the topic of study. It will contain a brief background to the topic. The motive behind the study and the objectives the study hope to achieve. Chapter two (2) will entail a literature review of past works that have been done on the topic and identify any knowledge gap that may have existed in the past work. Chapter three (3) will address the methodology that was employed to gather information on the subject. This will span from research design, population sampling technique, research instrument, data collection and data analysis. Chapter four (4) will delve into analysis of data gathered/ findings which will be analyzed by the appropriate Statistical Package for Social Sciences tool. Chapter five (5) will comprise of

summary of findings, conclusion and recommendation as well as suggestions for further study.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides the literature review in two major parts. The theoretical literature review and empirical literature are the key parts of this chapter. The theoretical literature explains the key theories needed while the empirical literature reviewed works that have been conducted by other scholars on similar subject.

2.2 THE NATURE OF THE CONSTRUCTION INDUSTRY

The construction industry is one of the important sectors in the economy of every country. Known for its complexity and multi - dimensional nature, the construction industry is controlled by physical infrastructure and asset based – lending as a development. The physical developments built through construction activity is the country's economic fortress as it forms the primary of facilitating productive activity by allowing goods and services to be distributed within the outside within and outside the country (Ofori, 2012). With a broad base for employment, capital formation and technological development, the construction industry holds an enormous future prospect (Nhabinde et al., 2012). The industry employs about 10% of the working population in addition to its 5% - 10% contribution to GDP in all countries (Ofori, 2012). It represents a large number of stakeholders (Dadzie et al., 2012), who are individuals or group of individuals who can be affected or is affected by the achievement of the objectives of an organization.

Contractors in the Ghanaian construction industry in Ghana have been classified into four categories and classes by the ministry of works and housing, Construction projects

up to \$75000 worth are handled by D4K4, projects within \$75000 - \$250000 are handled by D3K3, projects valued \$250000-\$500000 are handled by D2K2 and project valued \$500000 and beyond are handled by D1K1 (Frimpong and Kwesi, 2013). Majority of construction firms in the country are within the D4K4 and D3K3 classes (Oxford Business group, 2014). Most of the large firms in the country classified as D1K1 are foreign firms whereas the other classes are occupied by local Ghanaian businesses (Eyiah and Cook, 2003). The construction industry in Ghana is rigged with unprofessional practices even though it provides support to the economy and a means of development socially. This has resulted in a lot of long standing and serious problems such as time and cost overrun, waste generation, striking negative impact to the surrounding environment and excessive intake of resources. Some of these delays resulting from dispute litigation and time overrun mostly result in the complete abandonment of projects (Fugar and Agyakwah-Baah, 2010), these delays are a major problem facing the Ghanaian construction industry (Fugar Agyakwah-Baah, 2010).

Lack of proper planning by stakeholders in the industry have resulted in the wastage of energy and water, building materials and the inability to meet the needs of consumers, moreover stakeholder cooperation is disjointed.

Waste generation is a mark of construction activities, Forsberg and Saukkorrip (2007) explained that, the amount of waste generated is about 30-35% of the project production cost. And these wastes are generated as a result of poor planning and frequent design changes (Senaratne and Wijesiri 2008; Yupeng, 2011). Akadiri (2012) also explained that the industry is known for its major contribution to the environment pollution and its consumption of raw materials with about 3 billion tons consumed annually and 35% generation of waste (Solis-Guzan et al., 2009). Unsustainable design and construction

process with constant environment degradation continue to remain a problem in Ghana (Djokoto et al., 2014).

The industry with all its problem to the environment is required to meet the demand for housing and other structures nationally. Due to the industries rate of waste generation and resource consumption, it has however become a major target for environmental sustainability

2.3 OVERVIEW OF SCHEDULE DELAYS

The construction industry is a special, fractured, competitive and complex industry with all project risks and uncertainties (McCord et al, 2015). In the construction business, cost overruns and schedule delays are common problems (Hwang and Yang, 2014; McCord et al., 2015; Polat et al.,2014). The main goal for construction project managers is to complete construction projects within the expected time and budget (Al Haj and El-Sayegh, 2015). Over 55% of Malaysia's construction projects have cost overruns in which the project type affects overruns (Shehu et al., 2014). The public sector, for instance, has lower cost overruns than private firms, and almost all very large projects surpass the budget by less than 10 percent (Shehu et al., 2014). Some senior managers of property development projects are unable to control project time and cost appropriately (Elmualim and Gilder, 2014). Construction project managers lack effective coordination and communication among the stakeholders to establish shared project objectives (Elmualim and Gilder, 2014). Earlier schedule delay studies did not include effective recommendations for senior managers and practitioners because descriptive and explanatory studies were used by most researchers in similar studies (AlSehaimi et al., 2013). AlSehaimi et al. (2013) selected earlier studies on cost overruns and schedule delays and found that 87% included poor planning identification,

69% on procurement issues, and 56% on poor site management. The main factors influencing construction project management were the identified problems (AlSehaimi et al., 2013). AlSehaimi et al. (2013) found that 25% of the studies conducted did not include guidelines for approaches to minimize delays in schedules.

On average, small and medium-sized projects have reached 3 weeks from the planned completion date (Hwang et al., 2014). Hwang et al. (2014) found in the same report on average that 58 percent of Singapore's projects were affected by delays in construction rework, which is the most influential factor in scheduling delays. Love et al. (2013) measured the cost overruns of 276 building and engineering infrastructure and transportation projects and reported an average cost overrun of 12.22%. Scientists and practitioners have tried to increase the efficiency of projects time and cost in order to improve performance but have not been able to find a common solution to overruns and delays (Alinaitwe et al., 2013; Rosenfeld, 2014; Spalek, 2014). Senior managers need to address the root causes of overruns and delays rather than the problem-related symptoms (Rosenfeld, 2014).

Similar cost and time control practices are used by UK contractors and consultants (Olawale and Sun, 2015). The most common weakness is the lack of time and cost management of senior managers during the process of managing (Olawale and Sun, 2015). The resulting cost and time overruns are due to this gap in the integrated cost and time control process (Olawale and Sun, 2015). Arashpour et al. (2014) pointed out that the volume of construction rework has a major impact on cost overruns, regardless of whether the source of rework is from the customer's side (presented as a design change once construction has begun) or from the contractor's side (resulting from a

misinterpretation of design documents). Senior managers must avoid reworks in both design and construction.

Variation of the plan is a global business phenomenon that negatively affects the cost of development and the timeline of completion. The longer the duration of the task, the less the effect on productivity of the variation due to the possible balance between negative and positive variation in that activity (Lindhard, 2014). The supporting research phase (excavation and earthwork) is the stage subject to the highest portion of cost overruns due to the lack of accurate reporting and conditions of soil investigation (Azman et al., 2013). The data included in this review of the history of cost overruns and schedule delays provides evidence that the cost and time of any construction project is influenced by several factors.

2.4 DELAYS IN CONSTRUCTION INDUSTRY

Abdalla et al. (2002) averred that, in Jordan, contractors and labor productivity was the most important delaying factor. Delays are costly and often argument and claims, damages the feasibility for the project owners and progress of the construction industry. Sadi et al. 2006, also investigated causes of delay in large construction. In the search, seventy-three causes of delay were identified by field survey. Three parties were participated in it. The common causes of delay arose from all parties were;

- Change order by the owners during construction to avoid delay,
- Delay in progress payment,
- Ineffective planning and scheduling,
- Shortage of labors,
- Difficulties in financing on the part of the contractor.

Frank D. K Fugar and Adwoa B. Agyakwah-Baah (2010), conducted a survey on Ghana construction project and the relative importance that cause delays from that all the three parties namely owner, contractor and consultants are respondents for the questionnaire survey. From this important thirty-two (32) factors are identified and analyzed based on relative importance index (RII). This study showed the top ten factors that cause delay in construction are:

- Delay in honoring certificates
- Underestimation of the costs
- Underestimation of the complexity
- Difficulty in accessing bank credit
- Poor supervision
- Underestimation of time factor completion of projects by contractors
- Shortage of materials
- Poor professional management
- Rising cost of materials
- Poor site management.

In this study, 32 factors are categorized in nine groups. The results show that the financing group was the most influential factor causing delay and scheduling and controlling were considered as second most important factor and so on.

2.5 CAUSES AND EFFECTS OF DELAYS IN CONSTRUCTION PROJECTS

In the past, numerous articles were published to describe the causes of delay and the consequences of delay during building projects. Gündüz et al. (2013) and Hwang et al. (2013) define delays in construction projects as incapacity to achieve timetable targets, increased costs, work interruption, loss of productivity, backlog, disputes, third-party

claims, termination of contracts and primary stakeholder dissatisfaction. For many years, most construction projects have encountered budget overspending (2013), time delays (2011), and time overruns as expected in the contract and sometimes the date of completion of the construction schedule is double Akogbe et al. (2013). According to Abdul-Rahman et al. (2006), the majority of developing country construction project delays in the current fiscal year are due to lack of public funds.

Many previous studies were analyzed to determine causes and effects of delays in construction projects. For example, in Saudi Arabia, Assaf and Al-Hejji (2016) concluded that 70 percent of projects faced time overrun and observed that 45 out of 76 projects considered were delayed. Odeyinka and Yusif (1997) reported that seven out of ten construction projects surveyed in Nigeria had delays in their implementation. The Ministry of Statistics and Programme Implementation in India showed that, out of 951 construction projects monitored, 474 projects were behind schedule and 309 projects had cost overruns Doloi et al. (2012). Faridi and El-Sayegh (2006) reported that 50 percent of construction projects experienced delays in UAE construction industry.

In examining the delaying factors affecting construction projects in the construction and road project life-cycle process, Akogbe et al. (2013) analyzed the delay factors in a Benin construction project and recommended a managerial method that would be important for the success of new development projects. The paper concluded that the contractor's financial capacity and the owner's financial difficulties are the leading causes of delay on projects in Benin under the owner and contractor's responsibility. Kaliba et al. (2013) conducted a cost escalation analysis and scheduling delays in road construction projects in Zambia, and found that major delay factors were the responsibility of the customer, with the most significant factors being late payment, the

financial system and financial difficulties. A study by Mahamid et al. (2012) on the timing of road construction projects in the West Bank in Palestine explored contractors ' and consultants ' views on the causes of delays and revealed that contractors and consultants are suffering from many problems that have a negative impact on project performance. According to Larsen et al. (2015), the schedule, budget and quality of construction projects in Denmark's construction industry are significantly affected and the lack of project funding, consultant material omissions, and construction work omissions have been found to be the most critical factors affecting project time, cost, and quality. Odeh and Battaineh (2002) studied the main causes of construction delay and investigated the fact that extensive delays are the cause of costly disputes and claims between contractors and consultants. Manzoor and Sui (2005) investigated the potential effects of variation orders on Singapore's institutional building projects and the results revealed an increase in project costs, delays in scheduled payments, and rework and demolition were the most significant factors affecting institutional building variation orders.

2.6 MINIMIZING CONSTRUCTION DELAYS

The success of construction projects is critically significant for all project participants especially for clients as well as the country economy and in bigger picture it affects contributing to country development. A research by Abdelnaser et al., (2005) concluded that in order to avoid delays during construction stage, you should make proper planning. Nguyen et al., (2004) studied the project success factors in large construction projects in Vietnam. A questionnaire survey was used to collect data from construction professionals. There were sixteen success factors that can be applied as a method in order to minimize construction delays whereas the five most significant methods were as follows: availability of resources; multidisciplinary/competent project team;

competent project manager; accurate initial cost estimates and accurate initial time estimates.

Aibinu and Jagboro (2002) in their research identified two methods to minimize or if possible eliminate time overrun that were: acceleration of site activities and contingency allowance. According to Odeh and Battaineh (2002), they recommended on improving the situation of construction project that the major method were: enforcing liquidated damage clauses and offering incentives for early completion. The significant minimization methods from Koushki et al., (2005) that was identified in their study for the minimization of time delays and cost overruns would require: ensure adequate and available source of finance until project completion; select of a competent consultant and a reliable contractor to carry out the work.

2.7 EMPIRICAL LITERATURE

Construction delays have become endemic in Libya. It is imperative to create awareness of the extent to which such delays can adversely affect project delivery, especially with regard to road construction projects. It is clear that the Libyan road construction industry also faces the issue of not being able to complete projects within the allocated time. This paper identifies the effects of road construction delays, evaluates these through a questionnaire, and assesses them using an empirical method. A detailed review of related literature produced the secondary data, while the primary data was obtained via structured questionnaire which targeted the road construction projects owners, consultants and contractors. A 71% response rate was achieved; 256 out of the 360 questionnaires sent out were returned. Descriptive statistics were used to analyze the data received from the questionnaires. The findings of the study reveal that the major outcomes of road construction project schedule overruns in Tripoli, Libya

include cost overruns, time extensions, disputes, loss of profit, breaches of contract, poor quality of work and company's bad reputation. The study makes a contribution to knowledge of the subject of the outcomes of road construction project schedule overruns in Tripoli. Computation of the means and standard deviations, together with a structural equation model, have been used for the data analysis and inference. It is found that delays in road construction projects widely lead to cost overrun, time overrun, litigation and disputes. The findings of the study also provide significant insights into the construction industry, which will help it formulate strategies in order to avoid delays and their consequences. The most important effects identified were time overrun, cost overrun and obstruction of economic and country development. The recommendations and limitations are discussed in the concluding part of the study.

Chirwa (2017) investigated the completion of construction projects in a timely manner is often a critical factor and measure of project success. However, in many cases, delays plague the delivery of construction projects in many parts of the world. The purpose of the paper is to critically evaluate the performance of the UK-funded Education Sector Support Programme (ESSP) infrastructure projects in Malawi, with respect to timely completion. The research uses a case study approach, which critically evaluates the extent of schedule overruns through the collation and analysis of secondary data from the portfolio of projects administered by Malawi's Education Infrastructure Management Unit (EIMU) between 2003 and 2008. A significant number of the educational projects administered under the ESSP have been plagued by delays, and other project management and delivery problems. Out of 184 contracts administered between 2003 and 2008, less than a third of them achieved timely completion and yet the liquidated damages clause was only enforced in 29% of the 111 delayed projects, leaving contractors to complete at their own time. Furthermore, the mitigation measures

put in place to prevent poor project performance do not seem to have the desired effect. The scope of the research is limited to the construction programme directly administered by the Education.

Fugah and Baah (2010) investigates the causes of delay of building construction projects in Ghana to determine the most important according to the key project participants; clients, consultants, and contractors. Thirty-two possible causes of delay were identified from the literature and semi-structured interviews of 15 key players in the implementation process. These delay factors were further categorized into nine major groups. The list of delay causes was subjected to a questionnaire survey for the identification of the most important causes of delay. The field survey included 130 respondents made up of 39 contractors, 37 clients and 54 consultants. The relative importance of the individual causes and the groups were calculated and ranked by their relative importance index. The overall results of the study indicate that the respondents generally agree that financial group factors ranked highest among the major factors causing delay in construction projects in Ghana. The financial group factors were delay in honouring payment certificates, difficulty in accessing credit and fluctuation in prices. Materials group factors are second followed by scheduling and controlling factors.

A number of studies have been carried out to determine the causes of delay in construction projects. Sweis et al. (2008) studied the causes of delay in residential projects in Jordan and concluded that financial difficulties faced by the contractor and too many change orders by the owner are the leading causes of construction delay. Abd El-Razek et al. (2008) in a similar study in Egypt found that the most important causes of delay are financing by contractor during construction, delays in contractor's payment

by owner, design changes by owner or his agent during construction, partial payments during construction, and non-utilization of professional construction/contractual management.

Assaf and AlHejji (2006) conducted a time performance survey of different types of construction projects in Saudi Arabia to determine the causes of delay and their importance according to each project participant (owner, consultant, and contractor). They identified seventy-three (73) causes of delays during the research. The most common cause of delay identified by all three parties was “change order.” About a decade earlier, Assaf et al. (1995) studied the causes of delay in large building projects in Saudi Arabia and their relative importance and reported that among the fifty-six (56) causes of delay included in the survey, the contractors, owners and architects/engineers interviewed all ranked financing group delay factors the highest. According to the contractors, the most important delay factors were preparation and approval of shop drawings, delays in contractors’ progress payment by owners, and design changes by owners. In the opinion of architects and engineers, the most important causes of delay were cash flow problems during construction, the relationship between different subcontractors’ schedules in the execution of the project, and the slowness of the owners’ decision-making process. Owners, on the other hand, attributed delays in construction projects to design errors, excessive bureaucracy in project-owner organization, labour shortages, and inadequate labour skills.

Furthermore, Assaf et al, in a review of the literature, reported that studies by Chalabi and Camp (1984) had established that in developing countries where workers are relatively unskilled, adequate planning at the very early stages of the project was important for minimizing delay and cost overruns in most projects. It is however,

interesting to note that financial difficulty as a factor in the delay of projects in Saudi Arabia was not reported as a major factor again in the Assaf et al. (2006) study. Ayman (2000) investigated the causes of delays on 130 public projects in Jordan. The projects included residential, office and administration buildings, school buildings, medical centres, and communication facilities. The results indicated that the main causes of delay in construction of public projects relate to designers, user changes, weather, site conditions, late deliveries, economic conditions, and increase in quantity.

Odeh and Battaineth (2001) reported that among the top ten most important causes of delays in construction projects with traditional type contracts in Jordan were, from the view point of contractors and consultants: owner interference, inadequate contractor experience, financing and payments, labour productivity, slow decision making, improper planning, and subcontractors.

Scholars across the globe have investigated to some extent misappropriation of road funds. According to Manelele and Muya (2008) rehabilitation of road projects are mostly expensive than newly developed roads. Manelele and Muya (2008) also indicated that funding for rehabilitation is most often easier to come by compared with new projects.

Odeyinka and Yusuf, (1997) cited that inflation rates and delay in monthly payment of vital projects are major causes of road fund misappropriation.

Frimpong et al. (2003) and Berko, (2007) as well as Agyakwa-Baah (2009) have indicated that Project disputes, schedule completion slippage and government interference are some major causes of road fund misappropriation.

Also, Enshassi, Al-Najjar, and Kumaraswamy (2009) within the Gaza strip underlined rehabilitation to be the pivot of rebuilding a new Gaza with very low financial muscle.

Kaming, Olomolaiye, Holt, and Harris, (1997) indicated that effect of government interference has heightened to the point of leading all road activities into corrupt acts. This point is further highlighted by Both Merewitz (1973) and Flyvberg, Skamris Holm, and Buhl (2003) where it was suggested that government be isolated from road construction.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

This chapter presents the methods and procedures employed in the study. It includes the type of research, the population and sampling technique, data-gathering procedure and statistical analysis of data.

3.1 RESEARCH DESIGN

The researcher used quantitative (descriptive) form of research to the effect of delays on the completion of health facilities. A descriptive study defines a subject by constructing a profile of people, groups or events through tabulation and the collection of data on the frequencies on study variables (Cooper and Schindler, 2007). A descriptive design ensures absolute explanation of the state of affairs and makes sure that there is no bias in data collection, and enables data collection from a significant target population at a cost-effective manner. Therefore, a descriptive design helped to establish the effect of Delay of completion on health facilities in the Ningo Prampram community.

3.2 POPULATION OF THE STUDY

Population is a set of people or items with similar characteristics that a researcher intends to study and to draw statistical inferences or conclusions (Gall et al., 2006). Population of this study comprised of all officials of the Ningo Prampram District Assembly, contractors and consultants on construction projects in the locality. The total population size was unknown due to the composition of the population for the study.

3.3 SAMPLING TECHNIQUE

The persons selected in this study meet a set criterion. The criteria include any licensed persons (contractors, staff and consultants) who are well informed about health facilities in the Municipality. Therefore 20 staff, 10 contractors and 10 consultants were available for information gathering. The convenience sampling technique was used to draw out this set sample.

3.4 DATA COLLECTION

Primary and Secondary data was obtained from persons and published documents respectively. Primary data helped to gather information from contractors, staff and consultants. Data from annual reports were considered reliable since it provides standardized principles in the construction industry.

3.5 DATA ANALYSIS

Data analysis entails examining the data collected and making deductions and inferences. The data collected was edited, sorted for completeness and then analyzed using the statistical package for social sciences.

Data analysis deals with the ways by which answers are found by means of interpreting the gathered data (Strydom et al., 2005). For this study, information from respondent was gathered, grouped and enter into an analytical software called, Statistical Packages for Social Sciences (SPSS version 21). The analytical tool used for the analysis were Descriptive statistics and Relative Importance Index, where the mean and medians of the various variables were determined. The variables are ranked in order of importance and data presented on graph, charts and tables using MS Excel. A good table must help the public to find and assimilate the numbers within the table; and both the layout and

labelling must be straightforward and unobtrusive in order to draw substantive attention to the data which is conveying information to audience (Miller, 2004).

3.6 CHAPTER SUMMARY

The main purpose of this chapter was to describe the research methodology involved in the gathering and collection of data for analysis. This chapter gives detailed information on the type of research strategy chosen and a description of the type of questionnaire which was used for the data collection. Analytical software used is the SPSS for data analysis with descriptive statistics as the analytical tool where the emphasis was on the measure of central tendency.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION FOR FINDINGS

4.1 INTRODUCTION

The chapter basically focuses on the analysis of data collected from target respondents. The collected data is analyzed and interpreted using tables to address the key objectives and research questions stated in the chapter one. The analytical tool adopted for the study was descriptive statistic specially mean score ranking which deals the various objectives and the respondent profile. The analytical results have been shown in tables and interpreted accordingly. Other analyses such as Cronbach's Alpha coefficient test were used to check the validity the scale.

4.1.1 Survey Respondents

A questionnaire of 60 were distributed to Assembly officials, contractors and consultants in the study locality. Out of the distributed number, 40 were retrieved. Using purposive sampling technique, the 60 questionnaires were distributed to targeted respondents. Questionnaires were however self-administered and retrieved from the targeted respondents.

4.2 DEMOGRAPHIC DATA ANALYSIS (RESPONDENT)

4.2.1 Gender of Respondents

Figure 1 provides information on the gender of respondents. Out of 40 respondents 70% were male while 30% were females. This finding reaffirms the domination of men in the construction sector. Therefore, the responses showed a male dominant view in this study.

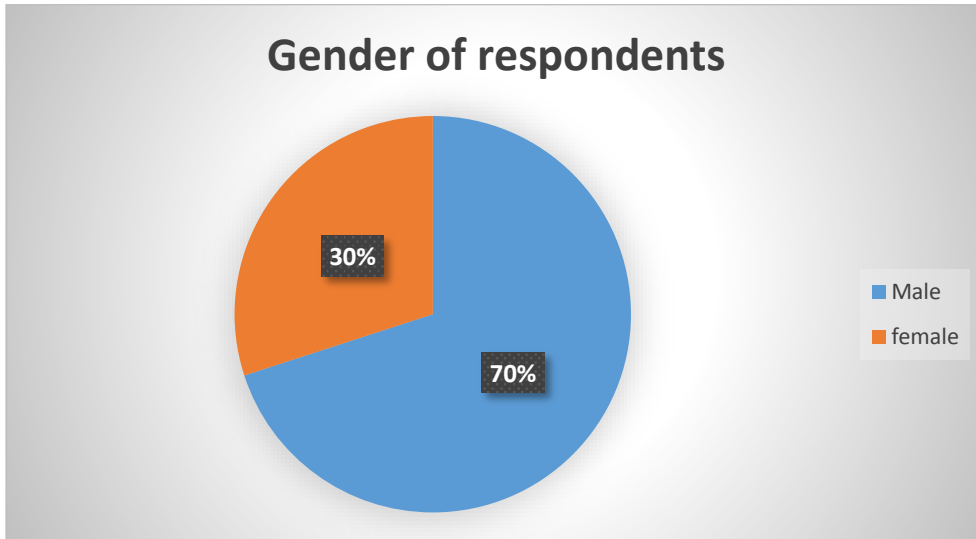


Figure 4.1: Gender of Respondents

Source: Field Survey, 2019

4.2.2 Respondents age

Figure 2 demonstrates the age category of respondents from local communities in Ningo Prampram. From the graph it is shown that 22 out of 40 respondents were above the age of 45years. However, 11 respondents were between the ages of 26-35years. Meanwhile only 7 respondents were between the ages of 36-45years.

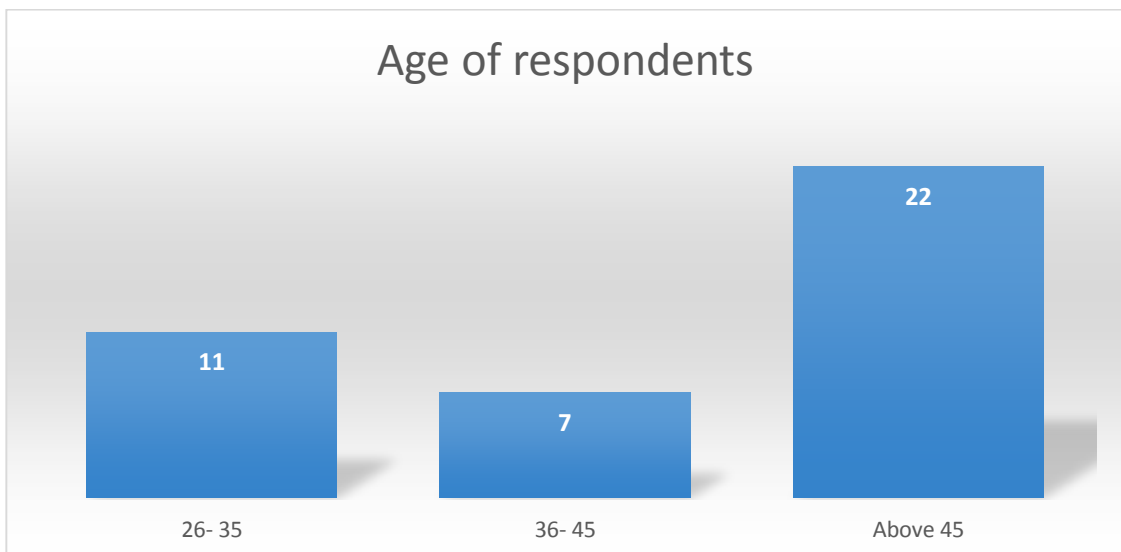


Figure 4.2: Age of respondents

Source: Field Survey, 2019

4.2.3 Educational Backgrounds

Figure 3 showed the educational background of respondents gathered for this research. Out of 40 respondents 78% obtained tertiary education while 22% obtained secondary/technical level education. Therefore, the views expressed in this research are predominantly professionals who have obtained tertiary education.

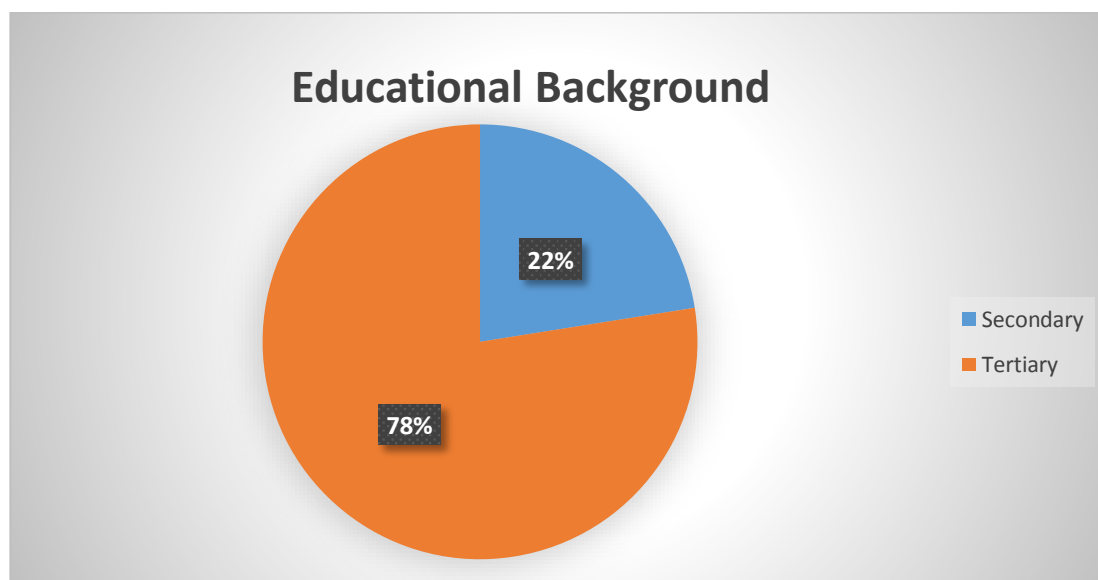


Figure 4.3: Educational Background

Source: Field Survey, 2019

4.2.4 Nature of Health facilities in Ningo Prampram

This section tends to investigate the nature or true state of many health facilities currently under construction within the Ningo Prampram District.

Table 4.1 Health facilities in the community at the completion stage

Responses	Frequency	Percent
Neutral	27	67.5
Agree	13	32.5
Total	40	100.0

Source: Field Survey, (2019)

Table 7 provide responses from experts within the Ningo Prampram district regarding the true state of health facilities under construction. From the responses it is quite clear that most of the health facilities are neither at their completion stage nor starting stage. About 67.5% of respondents are neutral on this subject. However only 32.5% of respondents agree that some health facilities in the community are at their completion stage.

4.3 THE CAUSES OF DELAY IN THE COMPLETIONS OF HEALTH FACILITIES AT NINGO PRAMPRAM

Respondent were asked to give their opinion by indicating on the causes of delay in the completions of health facilities. This was done by ticking the appropriate variable provided. The adopted scale was: 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree. Mean score ranking and Standard deviation was used in the analysis of the data. However, Cronbach reliability test was first test too check the internal reliability of scale.

Table 4.2 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.886	13

Source: Field survey 2019

The reliability score is 0.886 which is above the stipulated threshold of 0.700. This indicate that, the internal consistency of the scale.

After the reliability test, the identified variables in literature are analyzed, tabulated and interpreted as found below.

Table 4.3 Usage of Construction Debris

	Mean	Std. Deviation	Ranking
Financial difficulties	3.77	.717	1st
Poor planning and scheduling	3.74	.893	2nd
Variations	3.71	1.101	3rd
Improper site management	3.65	.877	4th
Delays in progress payment by owners	3.55	1.179	5th
Improper planning for procurement of materials	3.52	.851	6th
Design problems	3.00	1.291	7th
Unanticipated weather and natural disaster	3.00	1.438	8th
Delivery of construction materials	2.77	1.023	9th
Poor Supervision	2.77	1.257	10th
Late in reviewing and approving of design documentation	2.68	.909	11th
Unqualified work force	2.65	.798	12th
Shortage of manpower	2.61	1.256	13th

Source: Field Survey 2019

Out of the 13 variable identified, 8 variables were ranked significant by respondents. That is to say, mean score between the range of 4-3 are considered important and most common practices. Variables such as; Financial difficulties were ranked first with a mean score of 3.77 and a standard deviation of 0.717. This was followed by Poor planning and scheduling with a recorded mean score of 3.74 and a standard deviation of 0.893. Variation was ranked third with a mean score ranking of 3.71 and a standard deviation of 1.101. Delays in progress payment by owners and this variable was ranked fourth with a mean score of 3.65 and a standard deviation of 0.877. Improper site

management were ranked fifth with a mean score of 3.55 and a standard deviation of 1.179. Improper planning for procurement of materials was ranked sixth with a mean score of 3.51 and a standard deviation of 0.851. Design problems and Unanticipated weather and natural disaster both had a mean score of 3.00 and a standard deviation of 1.438 and 1.291 respectively. Factors such as Delivery of construction materials, Poor Supervision, Late in reviewing and approving of design documentation, Unqualified work force and Shortage of manpower had mean scores of 2.77, 2.68, 2.65 and 2.61.

4.3.1 Discussion of the First Three Variable.

Financial Difficulties

Difficulties in meeting the financial needs of the projects was noted by respondents as one of the major factor contributing intensively to the delay of the completions of health facilities in the study locality. Respondents were of the view that, one major factors resulting in delays of completion of social amenities such as health facilities in the locality is as a result of the inadequate capital to finance the project at a certain stage of the project construction. Most projects according funded by the government of Ghana according to respondents ends up being abandon due too many factors of which financial difficulty is one. The delay in the completion of health facility is not an exception in this regards. This results in delay in payment of certificates and hence difficulty of contractor to finance the project. This variable was captured under causes of delay by contractor in a study conducted by Theodore (2009)

Variations

Respondents were identified variations as one of the major causes of delay in the completions of health facilities at the study area. Variations are simply explained as the changes made to the design of the project due the cause of construction. Respondents

were of the view that, one of the key causes of delays in the completions of construction projects in the study locality was as a result of the rate of variation of architectural designs. Variation as a cause of delay has been generally noted for most construction projects. Theodore (2009) in his study identified some cause of delays affecting construction projects and grouped them into 8 groups. Variations was however identified as one of the causes of delay by clients.

Poor Planning and Scheduling

Again, respondent identified the poor planning and scheduling as one of the major causes of delays on the completions of health facilities in the stated locality. Respondents were of the view that, delays in the completions of health facilities were as a result of the lack of proper planning and scheduling of activities in construction sites. The absence of adequate planning and scheduling according to respondents is one of the major causes of delays on the completion of health facilities. This variable was also captured as one of the major causes of delay in the construction of project in general and was classified under delays caused by the contractor (Theodora, 2009)

4.4 THE EFFECTS OF DELAY IN THE COMPLETIONS OF HEALTH FACILITIES AT NINGO PRAMPAM

Respondent were asked to give their opinion by indicating on the effects of delay in the completions of health facilities. This was done by ticking the appropriate variable provided. The adopted scale was: 1= Not at all, 2=Slightly True, 3=Moderately True, 4=Mostly True, 5= Completely True. Mean score ranking and Standard deviation was used in the analysis of the data. However, Cronbach reliability test was first test too check the internal reliability of scale.

Table 4.4 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.800	10

Source: Field survey (2019)

The reliability score is 0.886 which is above the stipulated threshold of 0.700. This indicate that, the internal consistency of the scale.

After the reliability test, the identified variables in literature are analyzed, tabulated and interpreted as found below.

Table 4.4 effects of delays

	Mean	Std. Deviation	Ranking
Increasing pressure on existing health facilities	4.56	.641	1st
Delay in health care	4.37	.839	2nd
Decreased in the quality of health care facility	4.26	.656	3rd
Inadequate health care facilities	4.22	.847	4th
Increased in the rate chronic disease	4.15	.907	5th
Increased in mortality	3.78	.751	6th
Increase in work load of health practitioners	3.74	.984	7th
Increased in the cost of maintenance	3.74	.764	8th
The increase in the level of stress on workers	3.70	.993	9th
Increased in the cost of construction due to the extension of time	3.70	.953	10th

Source: Field Study (2019)

From the table above, the influenced identified has been ranked in order of the effect with the aid of the respondents. The variable ranked first is the Increasing pressure on

existing health facilities with a mean of 4.56 and a standard deviation of 0.641. This was followed by Delay in health care with a mean score of 4.37 and a standard deviation of 0.839. The third ranked variable was the decreased in the quality of health care facility with a mean score of 4.26 and 0.656. Inadequate health care facilities were ranked fourth with a mean score of 4.22 and a standard deviation of 0.907. The fifth ranked variable is increased in the rate chronic disease with a mean score 4.15 and a standard deviation of 0.907. Increased in mortality, Increase in work load of health practitioners, increased in the cost of maintenance, the increase in the level of stress on workers and Increased in the cost of construction due to the extension of time were ranked 6th,7th,8th,9th and 10th with a mean score of 3.78, 3.74,3.70 and a standard deviation of 0.751, 0.984, 0.764, 0.993 and 0.953 respectively.

4.4.1 Discussion of First Three Variables

Pressure On Existing Health Facilities

Increased pressure of health facilities was one of the major variables identified by respondents as an effect on the delay in the completion of health facilities in the study locality. According to respondents, the inability of contractors to complete the construction health facilities results in the increased pressure on existing health facilities. The number of people in the locality increases with time hence affecting the existing health facilities. Limited resources due to increase number of people in the locality pose as a serious challenge. The expansions of health facilities or the constructions of new facilities will help mitigate this challenge. However, respondent was of the view that, the impact of delay in the completion of new health facilities affect the rate of customer satisfactions due to the rate of limited resources. Ness et al. (2001) supported this argument by stating that, it is mostly better to retain customers than to attract new ones.

Delays in Health Care

Respondents noted the delay in health care as one of the major effects of delay in the completions of health facilities in the study area. According to respondents, due to limited available resources due and pressure on existing resources, there are delays in delivery of health care to customers. Patients are not attended to early because of limited available resources

Decreased in the Quality of Health Care

Respondents were of the view that, pressure exerted on health facilities affect the quality of services provided by the available resources at their disposal. Lee et al. (2014) defined quality as the ability to meet or exceed customer expectations. Respondents were of the view that Customers expectations are not met in the provision of health care at the stated locality due to delays in the completions of health facilities and the mounted pressure on existing ones.

4.5 MEASURES OF DELAY IN THE COMPLETIONS OF HEALTH FACILITIES AT NINGO PRAMPRAM

Target respondents were asked to indicate their opinion on this objective by ticking these variable identified in literature in accordance to their degree of significance on a five point Likert scale. The scale is as follows: 1=Strongly disagree, 2= Disagree, 3=Neutral, 4=Agree, 5= Strongly agree. These result were analyzed using mean score ranking. However, the reliability of the internal scale is first checked using Cronbach Alpha.

Table 4.5 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.758	12

Source: Field Survey 2019

From the reliability statistics, it could be seen that, the value gotten is above the threshold of 0.700. Hence, the scale is internally consistent.

After the reliability test, the identified variables are analyzed and tabulated for interpretation.

Table 4.6 Measures

	Mean	Std. Deviation	Ranking
Properly planning and manage construction site	4.48	.508	1st
Frequent coordination between the parties involved	4.42	.886	2nd
Complete and proper design at the right time	4.26	.631	3rd
Allocating available resources to projects	4.19	.910	4th
Frequent progress meeting	4.06	.680	5th
Use appropriate construction methods	4.06	.814	7th
Training of workers on waste productive procurement	4.03	.657	8th
Select trained worker force for construction projects	4.00	.730	9th
Analysis of project specification in details	3.97	.605	10th
Proper supervision on construction site	3.97	.875	11th
Use innovative technologies	3.84	1.214	12th

Source: Field survey 2019

The result from the table revealed that, properly planning and manage construction site with a mean score of 4.48 and a standard deviation 0.508. The remaining variable were ranked in order of significance that is: Frequent coordination between the parties involved, Complete and proper design at the right time, allocating available resources to projects, Frequent progress meeting, Training of workers on waste productive procurement, Analysis of project specification in details, Proper supervision on construction site, proper supervision on construction site, Use innovative technologies.

4.5.1 Discussion of the First Two Variables

Properly Planning and Manage Construction Site

Respondents were of the view that, proper planning and management of construction sites would help greatly in controlling the rate of delays on construction site. Proper planning of activities on site using efficient and effective software's and indicating critical activities according to respondents will help in the proper management of site hence reducing the delays on construction site. Effective project management and control through proper planning of activities will help in controlling and reducing delays on construction site. Baar (2002) equally added that, interactive planning is not a onetime occurrence and that it involves a constant interaction between all parties at the various stages of the project. Planning of a project involves the resources management alongside it activities.

Frequent Coordination Between the Parties Involved

Respondent again identified that frequent coordination between parties involved in a project could help in reducing delays on construction projects. Frequent coordination between parties can simply be explained as stakeholders of the project working hand in hand can contribute in helping to reduce the rate of delays on construction projects. In

construction, it is now recognized that good collaboration does not result from the implementation of information technology solutions alone the organization and people issues, which are not readily solved by pure technical system, need also t be solved (Shelbourn et al., 2007)

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This chapter provides final presentation on the research study. This chapter enumerates the summary of the research study in a chronological order; this section also states the conclusion as they have been deduced from the research analysis. This chapter provides practical recommendations which will seek to address the problems identified in this research. Perspectives on further studies are presented as well.

5.2 SUMMARY

The main aim of this research was to investigate the effects of delays in completion of health facilities for local communities in Ningo Prampram. This research topic has attracted much attention because of the reported cases of abandoned facilities in Ghana. Some public commentators have mostly attributed the lack of completion of projects to political ills in the society. It is therefore important to subject some of these ideas to proper scientific scrutiny and to be able to uncover what effect these abandoned 2or uncompleted projects are having on communities. The study then mapped out specific realizable objectives that can be achieved within a specific time frame since the research study is time bound. The specific objective of the study includes; to identify the causes of delay in completion of health facilities in the Ningo Prampram District. Under this objective, variables such as financial difficulty, Poor planning and scheduling and variations were identified as the three major causes of delays on the completions of health facilities

The second objective was to examine the effects of delay in completion of health facilities in the Ningo Prampram District. Under this objective, variables such as Increasing pressure on existing health facilities, delay in health care and decreased in the quality of health care facility were the three major effect of delays identified by respondents. The third objective was to explore measures on timely delivery of completion of health facilities in the Ningo Prampram District. Variables such as Properly planning and manage construction site, frequent coordination between the parties involved and complete and proper design at the right time were also the key measures identified by respondents to help mitigate the identified effects.

These objectives were backed by research studies that have been conducted in the past. The study provided literature in two parts, namely theoretical and empirical literature where the ideals of project completion were well discussed in details. The empirical studies involved works that have been conducted by other scholars in similar fields. The study adopted the quantitative approach to research mainly, a deductive and or descriptive research design. These designs helped the researcher to provide information and describe them using narrative of figures which represent the opinions expressed by the respondents. The study used purposive. These sampling techniques helped the researcher draw out samples of about 40 respondents who knew so much about health projects and their impacts in the Ningo Prampram district. In other to solicit information from the respondents without recording any form of bias, a closed ended questionnaire was used to draw out strict and coherent responses that were in line with the research objectives. The analysis of the study was conducted using descriptive statistics as well as inferential statistics in the form of regression analysis. In this study, measures of how to curb these delays and avoid these effects have been outlined. The study further

provides an outline of conclusion based on the research findings as well as recommendations.

5.3 CONCLUSION

The conclusion of this study is based on the research findings made in the previous chapter. The following represent the research conclusion of the study;

The study concludes from the analysis that there is an effect of delay in completion projects of health facilities in Ningo Prampram especially pressure on existing health facilities. This analysis showed that health facilities will thrive properly if there are minimal delays as opposed to more delays which can affect the general functionality of the health facility in the locality.

Secondly the study concludes that there are effects association between delay in completion and the nature of health facilities in Ningo Prampram. This result means that once health projects are not completed, the rate of incompleteness have contributed a certain level of significance to the nature of the health facilities present at Ningo Prampram.

From the views expressed by scholars in project management several measures have been put in place to improve the timely completion of health facilities. It is generally indicative that three important measures are vital for the completion of projects. Major factors identified by respondents are the proper planning and management of site followed by frequent coordination between parties involved and complete and proper designs at the right time were. Others indicated hiring the right staff for the right job and availability of the materials remain the concluding measures in avoiding delay in project completion.

5.4 RECOMMENDATION

The recommendation of the study is provided based on the conclusions drawn from the research findings. The following represent the recommendations for this study;

It is recommended that financial facilities should be secured for every health project in Ningo Prampram since it was found that, delay in completion affects the standard and nature of health facilities in the district.

It is recommended that project contractors should not be left to complete the project per their own timing but rather given strict supervision and encouraged to adhere strictly to the project schedule and activity timelines as indicated in the project contract.

Since the study found that completing project is vital for societal development it is important that a comprehensive communal bye law is instituted to ensure that no matter the change in government projects that are at a stand-still are completed.

5.5 FURTHER STUDIES

For further studies, it is vital that other parts of municipal assemblies in Greater Accra are included in order to have a holistic view and approach towards resolving the problem of delays in health projects completions.

REFERENCES

- Abd El-Razek, F., Afis, E. & Gaza, T. (2008). Government Projects in Egypt and the rate of project success. *Journal of Project Management*, 1-17.
- Abdalla M. Odeh & Hussien T. Battaineh (2002), "Causes of construction delay: Traditional contracts". *International Journal of Project Management*
- Abdalla M. Odeh and Hussien T. Battaineh (2002), "Causes of construction delay: Traditional contracts". *International Journal of Project Management*.
- Abdul-Rahman, H.; Berawi, M.A.; Berawi, A.R.; Mohamed, O.; Othman, M (2006).; Yahya, I.A. Delay Mitigation in the Malaysian Construction Industry. *J. Constr. Eng. Manag.*, 132, 125–133.
- Abobakir, H. & Khoiry, F. (2018). Effects of delays in Road construction projects in Lybia. *Journal of Development studies*, 23-116.
- Agyakwa-Baah, G. (2009). The Impact of Contractors' Attributes on Construction Project Success: A Post Construction Evaluation. *International Journal of Project Management*, 33-56.
- Akogbe, R.-K.T.M.; Feng, X.; Zhou, J (2013). Importance and Ranking Evaluation of Delay Factors for Development Construction Projects in Benin. *KSCE J. Civ. Eng.*, 17, 1213–1222
- Assaf, H. & AlHejji, R. (2006). Government Spending, Growth and Poverty in Rural India. *Journal of International Management studies*, 22-79.
- Assaf, S.A.; Al-Hejji, S(2006.) Causes of Delay in Large Construction Projects. *Int. J. Proj. Manag.* 24, 349–357.
- Ayman, E. (2000). Infrastructure and Economic Development in Sub-Saharan Africa. *Journal of African economics*, 23-27.

- Azman, M. A., Abdul-Samad, Z. and Ismail, S. (2013). The accuracy of preliminary cost estimates in Public Works Department (PWD) of Peninsular Malaysia. *International Journal of Project Management*, 31, 994-1005.
- Chalabi, H. & Camp, E. (1984). The Contribution of Hospitals to Local Economy: A Case Study in Iowa and Illinois. *Health Care Management Journal*, 23-56.
- Chirwa, T. (2017). Project Completion and Success in Malawi. *Journal of Technical Management*, 45-78.
- Doloi, H.; Sawhney, A.; Iyer, K.C.; Rentala, S (2012). Analysing Factors Affecting Delays in Indian Construction Projects. *Int. J. Proj. Manag.*, 30, 479–489.
- Faridi, A. and El-Sayegh, S (2006) .Significant Factors Causing Delay in the UAE Construction Industry. *Constr. Manag. Econ.*, 24, 1167–1176
- Frimpong, J., Lami, E. & Soon-Li, G. (2003). Transportation Infrastructure and Rural Development in China. *Journal of Structural design*, 12-90.
- Fugar, H. & Agyakwaah-Baah, G. (2010). The Effect of Distance and Road Quality on Food Collection, Marketing Margins, and Traders' Wages: Evidence from Ghana. *Journal of Development Economics*, 5-18.
- Gündüz, M.; Nielsen, Y.; Özdemir, M (2013) . Quantification of Delay Factors Using the Relative Importance Index Method for Construction Projects in Turkey. *J. Manag. Eng.*, 29, 133–139.
- Hamzah, N.; Khoiry, M.A.; Arshad, I.; Tawil, N.M.; Che Ani, A.I. Cause of Construction Delay-Theoretical Framework. *Procedia Eng.* 2011, 20, 490–495.
- Hwang, B.; Zhao, X.; Yi, S (2013). Identifying the Critical Factors Affecting Schedule Performance of Public Housing Projects. *Habitat Int.* 2013, 38, 214–221
- Kaliba, C.; Muya, M.; Mumba, K (2009). Cost Escalation and Schedule Delays in Road Construction Projects in Zambia. *Int. J. Proj. Manag.*, 27, 522–531

- Larsen, J.K.; Shen, G.Q.; Lindhard, S.M.; Brunoe, T.D (2015). Factors Affecting Schedule Delay, Cost Overrun, and Quality Level in Public Construction Projects. *J. Manag. Eng.*
- Lindhard, S. (2014). Understanding the effect of variation in a production system. *Journal of Construction Engineering and Management*, 140(11), 1-8.
- Mahamid, I.; Bruland, A.; Dmaid, N (2012). Causes of Delay in Road Construction Projects. *J.Manag. Eng.*, 28, 300–310
- Manelele, D. & Muya, H. (2008). *Effect of Road Infrastructure on Agricultural Output and Income of Rural Households in Delta State, Nigeria.*
- Manzoor Arain, F.; Sui Pheng, L (2005). The Potential Effects of Variation Orders on Institutional Building Projects. *Facilities*, 23, 496–510
- McCord, J., McCord, M., Davis, P. T., Haran, M. and Rodgers, W. J. (2015). Understanding delays in housing construction: Evidence from Northern Ireland. 125 *Journal of Financial Management of Property and Construction*, 20, 286-319.
- Odeh, A.M. and Battaineh, H.T (2002). Causes of Construction Delay: Traditional Contracts. *Int. J.Proj. Manag.* 20, 67–73
- Odeh, Q. & Battaineth, W. (2001). The Potential Effects of Variation Orders on Institutional Building Projects. *Journal of Construction works*, 55-63.
- Odeyinka, H.A.; Yusif, A. The Causes and Effects of Construction Delays on Completion Cost of Housing Projects in Nigeria. *J. Financ. Manag. Prop. Constr.* 1997, 2, 31–44
- Olawale, Y.; Sun, M (2013). PCIM: A Project Control and Inhibiting-Factors Management Model. *J. Manag. Eng.*, 29, 60–70.
- Sahoo, R. & Dash, F. (2010). Critical Assessment Indicators for Measuring Benefits of Rural Infrastructure Investment in China. *Journal of Management studies*, 15-19.

Sweis, T., Humz, E. & Fera, P. (2008). Factors Affecting Schedule Delay, Cost Overrun, and Quality Level in Public Construction Projects. *Journal of Management and Engineering*, 15-19.

Wang, B. & Sun, E. (2016). *Road Infrastructure and Economic Development: Some Diagnostic Indicators*. World Bank Publications: Washington, DC, USA.

APPENDIX

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

(KNUST)

**QUESTIONNAIRE FOR STAFF, CONTRACTORS AND CONSULTANTS IN
NINGO PRAMPARAM DISTRICT**

**TOPIC: EFFECTS OF DELAYS IN COMPLETION OF HEALTH
FACILITIES FOR LOCAL COMMUNITIES - A CASE OF THE NINGO
PRAMPARAM DISTRICT**

I would be most grateful if you could answer the following questions on effects of delays in completion of health facilities for local communities in Ningo Prampram district. You are assured that any information you provide will be used for academic purposes only.

Please, tick the correct answer where applicable.

SECTION A: PERSONAL DETAILS OF RESPONDENTS

- 1) Gender..... a) Male b) Female
- 2) Age..... a) 18- 25 b) 26- 35 c) 36- 45
d) above 45
- 3) Educational status..... a) Primary b) Secondary c) Tertiary
- 4) Work status..... a) Consultant b) Staff c) Contractor

PART TWO

A. TO IDENTIFY THE CAUSES OF THE DELAY IN THE COMPLETIONS HEALTH FACILITIES

The table below shows some factors identified in literature as causes of delays in the completion of health facilities. Select from the various factor the ones in your opinion are practiced on construction project in Ghana. A rating scale of 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree is adopted. Please answer by ticking in the corresponding boxes.

No	Causes	1	2	3	4	5
1	Design problems					
2	Variations					
3	Improper planning for procurement of materials					
4	Unanticipated weather and natural disaster					
5	Delivery of construction materials					
6	Poor planning and scheduling					
7	Improper site management					
8	Shortage of manpower					
9	Unqualified work force					
10	Late in reviewing and approving of design documentation					
11	Delays in progress payment by owners					
12	Poor supervision					
13	Financial difficulties					
	<i>If any other, please state and rank</i>					

B. TO EXAMINE THE EFFECT OF DELAYS ON THE COMPLETIONS OF HEALTH FACILITIES

The table below shows some factors identified in literature as effects of delays in the completion of health facilities. Select from the various factor the ones in your opinion are practiced on construction project in Ghana. A rating scale of 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree is adopted. Please answer by ticking in the corresponding boxes.

No	Effects	1	2	3	4	5
1	Inadequate health care facilities					
2	Increasing pressure on existing health facilities					
3	Increased in mortality					
4	Delay in health care					
5	Increased in the rate chronic disease					
6	Decreased in the quality of health care facility					
7	Increase in work load of health practitioners					
8	The increase in the level of stress on workers					
9	Increased in the cost of maintenance					
10	Increased in the cost of construction due to the extension of time					
	<i>If any other, please state and rank</i>					

C. TO EXPLORE THE MEASURES OF DELAYS ON THE COMPLETIONS OF HEALTH FACILITIES

The table below shows some factors identified in literature as measures to delays in the completion of health facilities. Select from the various factor the ones in your opinion are practiced on construction project in Ghana. A rating scale of 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree is adopted. Please answer by ticking in the corresponding boxes.

No	Measures	1	2	3	4	5
1	Analysis of project specification in details					
2	Allocating available resources to projects					
3	Proper Supervision of Construction site					
4	Select trained worker force for construction projects					
5	Properly planning and manage construction site					
6	Proper materials procurement					
7	Frequent progress meeting					
8	Use proper and modern construction equipment					
9	Complete and proper design at the right time					
10	Frequent coordination between the parties involved					
11	Use appropriate construction methods					
12	Use innovative technologies					
	<i>If any other, please state and rank</i>					