

MIDLANDS STATE UNIVERSITY



FACULTY OF COMMERCIAL

DEPARTMENT OF ACCOUNTING

An investigation into the problems faced in construction project completion: Case of Department of Public Works Midlands province

By

TAWANDA CYNTHIA

R111428N

A research project submitted to the Department of Accounting in partial fulfillment of the requirements to the awarding of a Bachelor of Commerce Accounting Honours Degree.

APPROVAL FORM

The undersigned certify that they have supervised the student dissertation entitled: **An investigation into the challenges faced in construction project completion: case of Department of Public Works Midlands province.** Submitted in partial fulfilment of the requirements of Bachelor of Commerce Honour Degree in Accounting at Midlands State University

.....

SUPERVISOR

.....

DATE

.....

CHAIRPERSON

.....

DATE

.....

EXTERNAL EXAMINER

.....

DATE

RELEASE FORM

NAME OF STUDENT : Cynthia Tawanda

DISSERTATION TITTLE : An investigation into the challenges faced in construction
Project completion: case of Department of Public Works.

DEGREE TITTLE : Bachelor of Commerce Honour Degree in Accounting

YEAR DEGREE GRANTED : 2014

DECLARATION : Authority is hereby granted to MSU library to produce
copies of this dissertation. The copyright of this
dissertation rests with the author. Quotation from this is
Permitted provided that full acknowledgement is given.
This dissertation may not be reproduced without prior
written approval from the author

SIGNED

DATE

PERMANENT ADDRESS 5898 ZIMRE Park
Ruwa
Harare

DATE

DEDICATION

This work is dedicated to my late lovely mom and dad who saw the value of education and supported me unconditionally. Thank you for the support and love, I wish you were alive to witness my success

ACKNOWLEDGEMENTS

Firstly I would like to thank God the Almighty for the gift of life and the unconditional love that he showed me throughout my period of study.

I would like to acknowledge all those who helped me to make this project a success , many thanks goes to my supervisor Mr Kazembe , thank you very much for your valuable guidance ,may God continue to shower blessings in your life. I appreciate all respondents from the Department of Public Works who contributed greatly to this research project by responding to the questionnaires sent to them

Special note of appreciation also goes out to the following individuals for their unwavering support throughout the preparation of this project Mr T Tawanda and twin sister Beatrice Tawanda

ABSTRACT

Delay is one of the major problems in Zimbabwe construction industry. Delays lead to many negative effects such as disputes between clients and contractors, increased cost, loss of productivity and revenue and termination of contract. The aim of this research was to investigate the challenges faced in construction project completions and find ways to minimize the project delays. A case study method was adopted for this research through primary data and secondary data. The data collected was analyzed using the relative importance index to determine the most causes and effects of construction delays in construction projects.

However the results obtained from the ratings show that change in drawings, lack of effective communication and lack of finance rank high on the causes of delay. Reduced profit, wastages and underutilization of manpower and resources ranked high on the effects of delays. The researcher concluded that delays causes more harm than good in construction project. Therefore action should be taken to avoid such factors of delay in construction project in order to improve the efficiency and effectiveness of the industry

TABLE OF CONTENTS

CONTENTS	PAGE
Approval form	i
Release form	ii
Dedication	iii
Acknowledgements	iv
Abstract	v
TABLE OF CONTENTS	vi
LIST OF ACRONYMS	viii
LIST OF TABLES	ix
LIST OF APPENDICES	Xiii
LIST OF FIGURES	x
CHAPTER 1 INTRODUCTION	
1.0 Introduction	1
1.1 Background	1
1.2 Statement of the problem	1
1.3 Main research objective	3
1.4 Sub-research objective	4
1.5 Main research question	4
1.6 Sub-research questions	4
1.7 Significant of the study	5
1.8 Delimitation of the study	5
1.9 Assumptions	6
1.10 Limitations	6
1.11 Definition of terms	7
1.12 Summary	7
Chapter 2	
LITERATURE REVIEW	

2.0	Introduction	8
2.1	Definition of literature review	8
2.2	Funding of capital projects	8
2.3	Control of expenditure and issues of consolidation	9
2.4	Procuring of goods and services	10
2.4.1	Procurement process	10
2.5	Procurement fraud	11
2.6	Classification of delay	13
2.7	Risk in construction	14
2.7.1	Benefits of proper risk allocation	15
2.8	Challenges faced in the implementation of construction project	15

2.9	Effects of delays on the economy	18
2.10	Effects of construction delays on service delivery	21
2.11	Ways of minimising construction project delays	22
2.12	Summary	24
CHAPTER 3		
METHODOLOGY OF THE STUDY		
3.0	Introduction	25
3.1	Research design	25
3.2	Population and sample size	26
3.3	Data collection methods	26
3.3.1	Primary sources	27
3.3.2	Secondary sources	28
3.4	Research tools and schedule	28
3.4.1	Questionnaires	29
3.4.2	Interviews	29
3.5	Likert scale	29
3.6	Data presentation and analysis	30

3.7 Summary	30
CHAPTER 4	
DATA PRESENTATION AND ANALYSIS	
4.0 Introduction	32
4.1 Questionnaire analysis	32
4.2 Interview responses	47
4.3 Summary	49
CHAPTER 5	
CONCLUSION SUMMARY AND RECOMMENADTION	
5.0 Introduction	49
5.1 Summary	49
5.2 Overview of the major findings	50
5.2.1 Challenges faced in the implementation of capital projects	50
5.2.2 Effects of delays on the economy	50
5.2.3 Effects of delays on service delivery	51
5.2.4 Methods of minimising construction project delays	51
5.3 Conclusion	51
5.4 Recommendation	51
5.5 Areas of further research	51
Reference	53
	54

LIST OF ACRONYMS

MSU Midlands State University

PWD

Public Works department

RII

Relative importance index

DMO

District Managing Officer

LIST OF TABLES

TABLE	CONTENTS	PAGE
Table 1.1	Delays in the completion of projects	2
Table 2.1	Causes of delays in construction	16
Table 3.1	Population and sample size of the research	26
Table 3.2	Likert scale	30
Table 4.1	Questionnaire response rate	32
Table 4.2	Respondents' years of experience	33
Table 4.3	Categories of respondents	33
Table 4.4	Causes of delay	
Table4.5	Effects of delays	37
Table 4.6	Impacts of client understanding on design, procurement and service delivery	38
Table 4.8	Impacts of clients understanding	45

LIST OF FIGURES

FIGURES	CONTENTS	PAGE
Figure 2.1	Factors of delay	18
Figure 2.2	Effects of project delays on the economy	19
Figure 2.3	Relationship between economic growth rate and construction growth rate	20
Figure 4.1	Questionnaire responses	34
Figure 4.2	Gender responses	34
Figure 4.3	Respondents' capacity to supervise projects	36
Figure 4.4	Causes of delays	41
Figure 4.5	Effects of delays	44
Figure 4.6	Impacts of clients understanding on design, procurement and service delivery	45
Figure 4.7	Interview responses	47

LIST OF APPENDICES

		PAGE
APPEDIX A	Approval letter	xii
APPEDIX C	Questionnaire	xiv
APPEDIX D	Interview guide	xvii

CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter covers background of the study, statement of the problem, objectives of conducting the research, main research questions, significance of the study, the research delimitation, and limitations expected to be encountered in the course of the study, definitions of terms and the summary.

1.1 Background of the study

The construction industry is a key participant in the economy, generating both employment and wealth. However many construction projects experience extensive delays and thereby exceed the budgeted time. This is common for projects not to be accomplished on time and with original project budget. According to the Financial Gazette of 30 January 2014, Mukoshori noted that government is engaging to complete a number of significant public infrastructure projects that have been outstanding for many years. Many of these projects include the CID headquarters in Harare, the new Registrar General's headquarters in Harare, Marondera hospital and Harare central hospital.

The Herald on 28 February 2013 Public Works, then minister Joel Gumbo said "we have just about 400 projects at different stages of completion. Some of the projects have been idle for the past 14 years and material gets damaged". People were sent to projects where there was no funding.

The economic problem currently facing the Zimbabwean government weakens its ability to call for bids successfully and subsequently provide services. The government does not necessarily perform optimally even if resources are provided. Multifaceted system of government disturbs internal procurement process at district level. The need to act in agreement with the state government procurement board procedures has given rise to the construction of district hospital in Gokwe lagging behind schedule when government had already allocated \$600 000 for the project in time

There is inadequate management of construction project by the Public Works Department which gives rise to delays in the timeous completion of projects. As a result, intended

beneficiaries of the Central Registry project were disadvantaged of early solution to their accommodation problems (offices). The delays in construction contributed to the increase in the costs of the project which the government is incurring to finalise the project. The details of projects delays and the period of delays are summarized in table 1.1 below

Table 1.1 Delays in completion of projects

Project	Date of commence	intended date of completion	Expected period to completi on	Period of delay in years	%of completi on
CID	Sep 1999	Sept 2001	2 years	(7 years)	83%
Central registry	Jun 1997	Dec 2000	4 years	(8 years)	95%
Interpol	May 1998	May 2001	3 years	(7.5 years)	99%
Harare central hospital	Oct 2003	May 2005	3years	(3.5years)	35%
Marondera hospital	Aug 1997	Aug 1999	2years	(9 years)	80%
Meteorological Administration block	Feb 2001	May 2002	1 year	(3.5 years)	100%

[Source PWD project files – 2009]

The CID project commenced in September 1999 and was expected to be completed in two years' time. The project extended to nine years and it was 83% complete. The Central Registry took 8 years to reach 95 % completion and it was expected to be completed in four years' time. Similarly Harare central hospital was expected to be completed in May 2005 but at the end of 2011, the project had extended by 6 months and was 35% complete. Interpol project was about to be completed in 2011 yet it extended the expected period of completion by 7.5 years. Marondera hospital was expected to be completed in August 1999 and it was extended by 9years to be 85% complete. In 2011 the Meteorological Administration block was 100% complete after being extended for 3.5 years

From the above it can be seen that there are delays in construction projects , all of the projects failed to meet their scheduled time.

There are also delays in the imbursement of contractor's documents which are taking more than five months after issue of certificates for payment. This resulted in interest being charged on outstanding certificates at the rate of 35% per annum thereby increasing additional costs to the concerned project and had to be met by government.

1.2 Statement of the problem

Construction projects play an important role on building necessary infrastructure and in economic growth. . However, a large number of problems influence project delivery time performance, the delays in the completion of construction projects by the Public Works Department was mainly due to poor management, delays in payment of documents to contractors and non-timeous payment of contractors. This resulted in increases in project cost in terms of interest imposed on outstanding certificates

1.3 Main research objective

The main objective of the study is to investigate the causes of construction project delays in Zimbabwe's public sector and come up with strategies to minimize the problems identified.

1.4 Sub-objectives of the research

In order to comply with the main research objective the following objectives were pursued:

- To examine the challenges faced in implementing construction projects.
- To discuss the effects of project delays on the economy.
- To examine the effects of construction projects delays on service delivery.
- To suggest the methods of minimizing project delay.

1.5 Main research question

The main research question for this proposal can therefore be summarized as: What are the causes of construction project delays.?

1.6 Sub research questions

- What are the challenges faced in implementing construction projects?
- What are the effects of project delays on the economy?
- What are the effects of construction delay on service delivery?
- Which methods can be used to minimize project delays?

1.7 Significant of the study

They are several valuable benefits expected by implementing this study

1 To the researcher

The study is in partial fulfilment of the requirements of the Bachelor of Commerce Accounting Honours degree at Midlands State University. The study develops the student's research skills.

2 To Midlands State University

If the research findings are accepted, the research can also be of benefit to other scholars for future research as it provides a basis for further arguments.

3 To the Department of Public Works

The significance of the study is that it would assist in the improvement of construction project process. The study will assist in providing recommendations to the department of Public Works on the ways of minimizing project delays.

1.8 Delimitations of the study

- Geographic

The study will focus on provincial Public Works Gweru.

- Period of study

The secondary sources and financial statements from 2011-2014 will be considered in the research.

- Organization

The research will focus on the department of Public Works Gweru

- The research focused on construction project delays by the Department of Public Works.

1.9 Assumptions

- The researcher will be as professional as possible to avoid the provision of biased information
- Responders will respond within reasonable time period to enable the researcher to carry out the research as scheduled
- Economic environment remain the same during research period.

1.10 Limitations

The research is going to be conducted under the following limitations.

- Time

Limited time frame within which the research is to be conducted. The respondents may not afford the researcher enough time to conduct interviews and respond to questionnaires.

- Finance

Financial constraints with regard to cost of gathering information and preparing the project for submission to the university

- Confidentiality

Some information may be withheld by the management and staff for the purpose of confidentiality.

1.11 Definition of Terms

- Delay

Is the time overrun either beyond completion date specified in the contract, or beyond the date that the parties agreed for delivery of the project.

- Public company

A company in which the state has controlling interest whether by virtue of holding or controlling share therein.

- Project delay

Is an unplanned and unexpected difference of the project because of some events that impedes the project's commencement

- Financial statements

Financial statements comprises of: Statement of Financial position, statement of comprehensive income, statement of cash flows, statement of changes in equity and the notes to the financial statements

1.12 Summary

The chapter encompassed the background of the study, statement of the problem, objectives of conducting the research, main research questions, significance of the study, the research delimitation, and limitations expected to be faced in the course of the study, definitions of terms and the summary. The next chapter will cover the literature review.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

Chapter One covered the introductory part of the research project. The purpose of this chapter is to critically review and analyse the applicability of past studies on determining the factors which led to delay on the current construction projects and the summary.

2.1 Definition of literature review

Bell (2013) defines literature review as a critical summary and an assessment of the current state of art in particular field of study. In his study he pointed out the benefits of literature review and purpose of literature review. Literature review gives understanding into the aspects of the research. It prevents the researcher from repeating previous errors and doing work that has been previously done by others. It provides the researcher with the background in which to place the research. The purpose of literature review is to summarize and discuss the major documents published in the topic over a period of time, to learn ways that other researchers constructed their own research and to equip the reader with current account and research findings in the research.

2.2 Funding of capital projects

According to the Public Financial Management Act (chapter 22:19) section 28, a budget circular is given out requesting the line ministries to submit their proposal. Line ministries prepare their budgets request and submit to the Ministry of Finance. They are to be reviewed by the Ministry of Finance. A budget ceiling is set for each ministry. The line ministries reviews work plans and prepares draft estimates. When approval of the budgets estimates are done the line ministries are advised of the financial allocation approved in the budget. Line ministries prepare annual work plans. Performance agreements are signed between line ministries and the Ministry of Finance. Revised budgets are reviewed and approved by the National Assembly in the parliament.

A capital investment plan is included by government in their budget documentary providing a detailed listing of capital projects that are included in the ministry's budgets. The capital investment plan includes: purpose of the project, total estimated costs of the project, spending schedule showing the actual spending in the years prior to the budget year ending, revised

estimates of the spending for the budget year just ending, estimated spending for the next year, forecast spending for the following years, any balance of spending required to complete the projects in the following financial year, the estimated recurrent savings result from project implementation which includes maintenance costs and staffing costs and the sources of funding the projects. Resources are allocated by government basing on its set of priorities and set objectives. Line ministry allocates their budgets basing on their set priorities

2.3 Control of expenditure and issues of consolidation

The Public Financial Management Act (chapter 22:19) section 11 and 17 pointed out that treasury has power over the control and management of public funds. Section 17 of the public sector financial management act (chapter 22:19) pointed out that no payment involving a charge upon the consolidated revenue fund must be made without the approval of the treasury. No expenses of public money shall be incurred without the approval of the treasury. The Constitution OF Zimbabwe Act (2013) section 302 (1), vests the power of control over public funds on the President.

Public Financial Management Act (chapter 22:19) section 17, Subsection 5 states that “whenever funds have being appropriated under a vote of parliament for a particular purpose, the treasury may authorize the application of an expected saving on that vote to meet an excess of expenditure on an existing subhead of that vote or expenditure of a new subhead of that vote”.

2.4 Procuring of goods and services

Bovis (2009) defined procurement as the process in which public sector institutions acquire goods and services. The state procurement board regulates the procurement process. Procurement is vital to any organization. In terms of the Procurement Regulation Instrument of 2002 all public entities follow the tender procedure in the procurement of goods and services.

Lewis and Roehrich (2009) pointed out that procurement is a crucial activity in supply chain management. Procurement process encompasses buying goods and services under conditions of scarcity.

2.4.1 The procurement process

The procurement process consists of bidding procedure which is known as tendering. A company may require some materials for construction. If the price of the materials exceed the budgeted amount that has being established by government then the product should be put on tender. The purchaser is to state what is required and make the contract open to the public. The concept of total costs also comes into play. At times, not just price but the factors such as quality, timing, Reliability and flexibility are considered at tendering (Lewis and Roehrich 2011)

A number of potential suppliers then submit proposal of what they will provide and at what price. Then the purchaser will generally select the lowest bidder. However if the lowest bidder is considered incompetent of what is required despite quoting the lowest price. Then the purchaser will usually select the next lowest bidder considered competent. Strict procedures of procurement must be followed by public entities with contract value threshold determining the process required (Lewis and Roehrich 20

2.5 Procurement fraud

Cadwel (2009) defines procurement frauds as dishonest or obtaining an advantage or avoiding an obligation or causing a loss to public property during the procurement process by public servants, contractors and any other people involved in procurement process. He identified the following procurement frauds.

Dividing requirements to qualify for small purchase procedures to avoid scrutiny for contract review procedures for large purchases, collusion among bidders to reduce competition, provide bidders with advance insight information. Use of 'sole source' contracts without proper justification, use of prequalified standard in specification to unnecessarily exclude otherwise qualified contractors, submission of false or inflated invoices for services and products that are not delivered or work that is not done.

Procurement fraud scheme are very common and includes corruption, billing scheme and conflict of interest (www.construction.com4/09/2014, 12.54). Corruption means bribes in the form of gifts, or other advantages of various types. It can occur at all stages of the procurement process. The best known forms of bribes include purchase terms personalised for a nominated vendor, avoidance of the bidding process (bid rotation, bid suppression, creation of complementary bids and disqualification of qualified applicants), poor quality goods delivered instead of the original contracted ones, improper billing. Billing schemes

occurs when the company purchases and pays for goods which do not exist, are overpriced or which company do not need at all and the misuse of company funds for any employee's private purposes. Fraud scheme involves conflict of interest include transferring the employee's customer base to one's own company, purchases of over priced goods from a company related to any employee of the affected company and the favouring of related companies within the bidding process .The reasons of committing this type of fraud include gaining funds for personal purposes, taking chance upon finding faults in a control system and taking advantage for related party and bribery of an employee by third party

Okpala (2009) pointed out the procurement fraud indicators, these includes ineffective introduction of control procedure in the purchase division, unknown vendors, high staff turnover in the purchase division, favouring of certain vendor for no reason, preferential relationships between persons from the company and persons from the tenders, vendors with poor quality goods and no competitive advantages winning the bidding process, frequently occurring reports and suspicious of misconduct by an employee and frequently missing documents (price list, contracts bills of delivery).

According to www.deloitte.com 5/ 09/2014 , 1.00 procurement fraud can be indicated by poor record keeping, higher price, poor quality goods, excessive entertaining of procurement member by supplier, deviation in communication between procurement members and suppliers such as calls and text messages to mobile phones, procurement members demanding extended periods of notice before they allow an audit to take place, inexperienced buyers dealing with overbearing suppliers.

Guile (2013) suggested ten ways to control procurement fraud:

- Segregation of duties is recognised procurement fraud barrier but is not always enforced. A two person system should be implemented to define who can either add or delete a supplier from the approved list or change the supplier bank account
- Implement a variation limit for cost or both contracts or projects so that if the cost exceed the set limits reasoning can be explained and investigated before it is too late
- The company should analyse the spend pattern of supplier to avoid overspending

- When auditing deliveries, the company auditors should identify sub-contractors to see if internal controls are being maintained basing on the contract terms.
- During job rotation the company must remove all other current permission and authorities and add the permission applicable to the new role.
- Ensure that the procurement process is followed, has an order been placed before the procurement papers has been raised
- Ensure the risk of procurement is recognised in the company's risk register and there is a risk owner who has overall responsibility of procurement fraud.
- Ensure that all members involved in financial decision are educated on how to identify procurement fraud
- Ensure three way match is carried out, so, do the amount documented on the requisition purchase order and the invoice all align , check the delivery note and the schedule.
- Carry proactive data set matches of your staff against supplier looking for shared bank accounts, address and telephone numbers. There is information that can be

gathered from this data apart from conflict of interest such as supplier sharing office building that the company was not aware of

2.6 Classification of delay

Trauner et al. (2009) classified delay into four main groups critical and non-critical, excusable and non-excusable, compensable and non-compensable, concurrent and non-concurrent. While other researchers such as Levy (2006) and Kelleher (2005) pointed out that there are three groups of delay compensable and non-compensable, concurrent and non-concurrent, excusable and non-excusable. Callahan et al (2009) and Trauner et al (2009) cited one more group of delay which is the critical and non-critical; they further argued that the primary focus in any study of delay in projects is to examine if the delay affects the progress of the entire project completion. Critical delays are delays that emulates from extended completion of projects. They also pointed out that the critical path analysis emerges from the critical path method (CPM) scheduling.

2.7 Risk in construction

Construction risk is an exposure to possible loss (www.suretylearn.org5/09/14, 13.00). There are two types of construction risk that is risk bottom line risk and performance risk bottom line risk is a risk that directly impact the profitability bottom line risks include changes in schedule, changes in cost and financial risk . Changes in cost affect the ability to secure future work as their relationship may be affected in the current economic climate with infrastructure facing serious funding limits, a company may be feeling increased pressure to improve client relationship for competitive reason. Public infrastructures projects are usually publicly funded which may create bigger hurdles with cost increases financial risk include factors such as inflation, devaluation and slow economic growth , if a project extend for more than one year the negative impacts on an owner's budget can be difficult to anticipate or plan (www.construction.com 5/9/14, 12.00).

(www.construction.com5/09/14, 15.00 defined performance risk as the risk that affect the performance of a company and these risk include construction risk labour risk, contractual risk and technical riskLabour risk energy work requires more specialised labour, making workforce availability more of a concern. Availability of labour is a common risk factor. Many expresses concern on how the contract document apportion risk, being asked to assume risk they believe it belong the owner which lead some firms to decide not to pursue a project (contractual agreement).

2.7.1 Benefits of proper risk allocation

A reasoned risk allocation strategy is a win- win proposition for all project players. It tries to allocate specific risk based on analysis of which party is best able to evaluate, control and assume the risk. Proper risk allocation frames project relationship there by reducing the conflicts. Risk allocation helps to avoid chances of misunderstanding and reduce uncertainties caused by failure to allocate risk. Contractors may avoid the addition of cost contingencies in the pricing of project bids and estimates and schedule contingencies (www.suretylearn.org 5/09/14; 15.23).

2.8 Challenges faced in implementing capital projects

Rahman (2010) pointed out that delay in the approval of application for payments by management may also led to late payments and delays in the construction process. He further argued that clients deliberately delay payments for their own financial benefits especially in releasing retention money to the contractors. Abel et al (2011) in their research pointed out

that changes made by the client during construction led to the delay of the project. Rider and Finnegan (2010) pointed out that from the perception of the owner the delays are mainly caused by the fines, interest charges and penalties exposed by government. Chan (2008) examines seven delay factors and are categorized as follows

Table 2.1: causes of delay in construction

Category	Causes
Engineering	Inaccurate drawing Incomplete drawing Late engineering
Contractor	Equipment breakdown Equipment delivery Improper equipment Shortage of equipment
Exterior delay	Environment issues Late planned start Permit approval
Management	Construction methods Quality assurance and quality control Schedule too optimistic Not working on critical task
Labour	Craft short shortages Labour productivity and labour strikes Rework
Material	Damaged goods Material quality Material delivery
Weather	Freezing Heat Rain

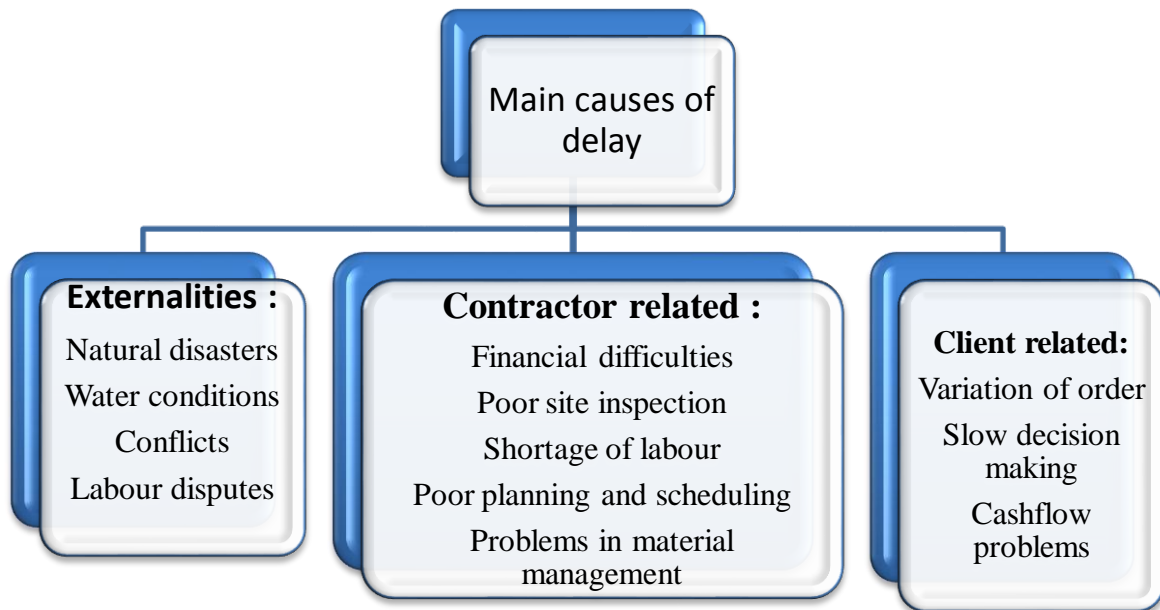
[Source: Chan (2008:78)]

Most construction delays are as a result of changes in the specifications of the orders, different interpretation between project stakeholders on project plans and specifications and lack of segregation of duties (Khalili and Ghafly 2009). Kongprasert (2009) argued that in balance between market forces that are demand and supply contribute to project delays and late payment of contractors. Sweis et al (2009) in their study argued that financial difficulties in were the main cause of project delay. As the construction increase more resources are required hence contractors will work beyond the financial capabilities

Dunkelberger (2009) in her research contended that the accomplishment or disappointment of the business is directly linked to the ability to communicate. Ineffective communication is therefore a major problem because of misinterpretation between personnel and suppliers will lead to earlier or late supply of materials to the site. Earlier distribution of materials might affect the quality of the materials while on the other hand; late distribution of materials will interrupt the work to be carried on the construction site. This will significantly delay the work as a result it delays the project. Rhee et al (2009) they found that late distribution of materials by the supplier disturbs the completion of the project

Odeyenka and Yusif (2010) pointed out the main factors of delay, which are grouped into three categories these are contractor related factors, externalities factors and client related factors. The factors are illustrated below

Fig 2.1: Factors of delay



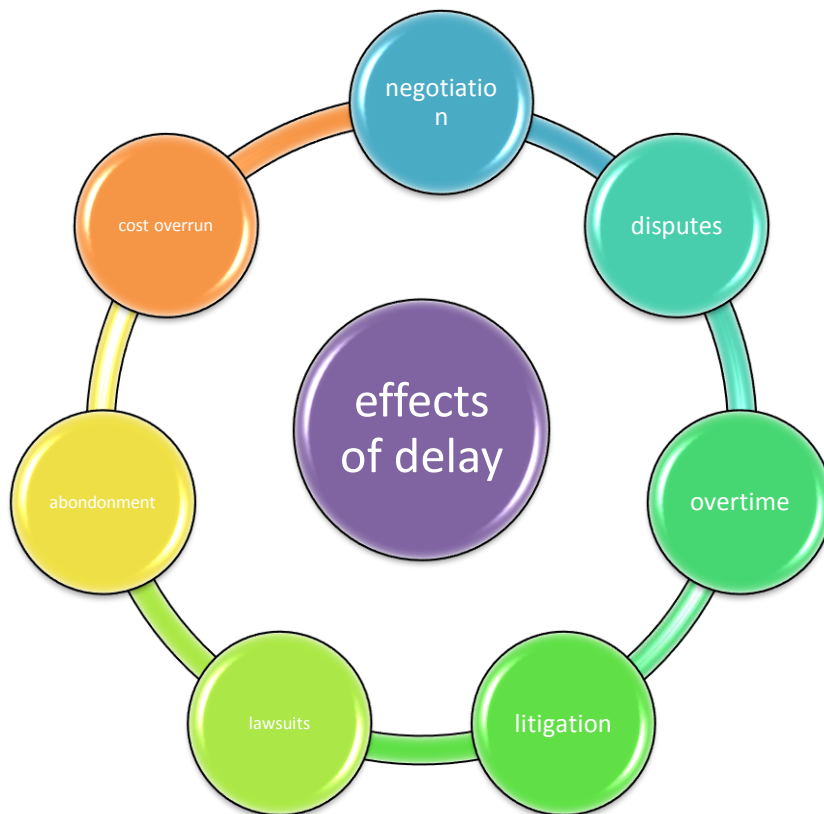
[Source: Odeyenka and Yusif (2010:45)]

Gerskup (2010) pointed that poor workmanship, carelessness; shortcuts are three key factors of delay that will contribute to defectives. Zanis (2010) also agreed that poor workmanship is the main contributor to defective works. Liu and shih (2010) pointed out that schedule updates are of importance in the construction industry. Based on the programme update postponed activities can be identified and usually rescheduling is required due to the delay work. Thus the rescheduling is one of the effects of delay in construction project

2.9 Effects of construction projects delay on the economy

Albino (2012) argued that project delay have six effects that is cost overrun, litigation, time overrun , abandonment , arbitration and dispute.

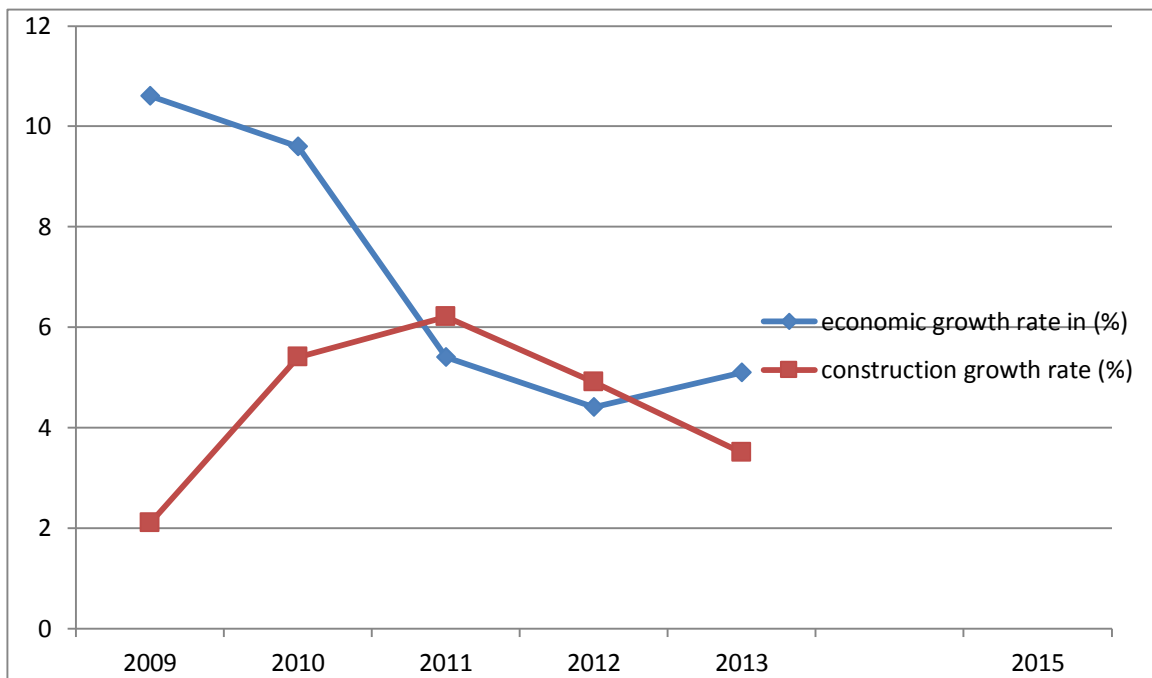
Fig 2.2: Effects of project delays on the economy



[Source: Albino (2012:21)]

Hesebel et al (2011) identified clash, claim, desertion and reduction of growth in the construction industry as the effects of project delays. Construction industry plays a major economic growth of a nation and occupies a pivotal position in the nation development plan. The construction industry employs a large population of workforce. It is viewed as service industry as it generates employment and enhances growth to other manufacturing sectors (www.construction.com 3/09/2014, 9.00). The graph below shows the relationship between the constructions growth rate and the economic growth rate

Fig 2.3: The relationship between economic growth and construction growth in Zimbabwe



[source: ZIMSTAT files 2013]

Zimbabwe economic growth performance weakened in 2012 following three consecutive years of acceleration of 5.4 %, 9.6% and 10.6 % experienced in 2009, 2010 and 2011 major sectors of the economy registered lower growth rate in 2012 and weighed down economic performance . The construction industry a lower growth rate of 4.9% compared to the 6.2% growth rate in 2011.

Abdul (2010) noted that rapid increase of the delay in closing of the final accounts, payments of contractors affects the good image of the construction industry. Delay in payments gives bad image to the contractor especially contractors with small capital base. It creates negative chain effects with the payments in the construction industry such as supplier, subcontractors and end users. A delay in payments also affects the contractor in obtaining cash flows to perform construction projects.

Lost productivity and efficiency of the labourers always occurs when delay occurs (Bramble and Callahan 2010). These happen due to acceleration of the schedule and also pressure to complete the work. In addition delays caused by construction faults will need redraft and this lead to a substantial rise in the amount of work as the labourers are required to complete the work. This directly diminishes the productivity and efficiency of working hours

Djordjevic and Djukic (2009) pointed out that business status is one of the most important intangible assets. Murray (2012) the reputation of a business is of significant for the reason that an unfavourably affected reputation can become a business risk. Strategic planning, cooperate governance and corporate code of conduct are the three factors that affect the company reputation. Ismail et al (2010) pointed that delay in construction will affect the business reputation.

2.10 Effects of delay on service delivery

Schwartz (2010) waiting is a complex phenomenon to which a consumer often reacts in an emotional way .Waiting may be costly. Graham (2010) pointed out that time is valuable to the consumer as a result waiting for a service can be annoying , frustrating and ultimately a determinate factor of consumer dissatisfaction . Lucey (2010) argues that an increase in the client's waiting has been shown to have a negative relationship with the overall service valuation. Having to wait can become not only an inconvenient that leads to frustration but it can drive future behaviour and decision.

Rioux (2010) argues that pre transaction wait have greatest impact on satisfaction as this contribute to clients dissatisfaction. The natural relationship between delay and increasing dissatisfaction might be exacerbated by natural tendency for a customer to overestimate time of delay (Feinberg and Smith 2009)

Having to wait for a service delivery is a common experience for virtually all customers and is general considered as part of the service experience (Maister 2009).Taylor and Fullerton (2009) in their study pointed out that the feeling and emotions people have towards the wait has been equated with anger frustration and anxiety in the service content. However the demand in the service industry is not always predictable because most of the products cannot be produced and invoiced in advance, waiting becomes inevitable.

2.11 Ways of minimizing construction projects delays

Cheung et al 2010 declare that the extent to which a construction project is dispute free from the clients determines the success of construction projects thus the need that is expected by the client should be known and be fulfilled

Phua(2009) pointed out that communication among construction firms and their clients is the main factor that influences the success of a project. Miller and Turner (2009) concludes from their study that the owner should give warnings ,if he intends to change the specifications in the project to reduce delays in the project process, Phua, F.(2009) further argued that good communication among project players play an important role in the performance of the project . Chan et al (2010) pointed out that the ability of clients to communicate changes and make contribution leads to the success of the project as it saves time and reduces errors. He also pointed out that clients' ability to make decision that have impact on construction projects helps in reducing project delay

Belout and Gauvreau (2011) agitated that during the planning phase it is of importance to define the mission of the project, to set the quality standards of the project that is expected, monitoring the clients, set the level of risk accepted and the project management methods to be adopted to reduce wastages and rework during construction process. The ability of clients communicate with the design team avoid changes in plans and rework

Khashak et al (2010) recommended that the client must clearly set the requirements of their project to reduce errors in project. Chan et al (2010) identify the client's ability to brief the design team as one of the human factor that affect the success of the construction project. The accuracy regarding of briefing of the design taken regarding to the purpose of the building is directly proportionate to the level of representation of the intension in the design

Mbachu and Nkando (2010) in their study argued that there is need to understand the needs of the clients and provide the services according to what is required. A satisfactory service reduces undesirable consequences such as negative word of mouth, redress, mistakes and possible divestment from the construction industry. He further argued that stability in decision making is of importance in the construction process as changing of decision may led to changing designs, plans, rework, and material loss. Blissmas et al (2010) contend that client's indecisiveness is the main that influence project delivery in their findings.

Trauner et al (2009) argued that the use of critical path analysis helps to reduce delays in construction. It helps to identify the tasks which are critical for the project schedule and by establishing the critical path one can determine the project completion time rather than estimating on the project duration.

Collaham et al (2010) defined planning as the process of selecting ways in which the order work can be accomplished among all varies methods and sequence in which the order cold

be done. Mubarack (2009) argued that project planning is of importance as it helps in project scheduling, safety management, and project control and cost estimation. The main purpose of planning is to establish the main responsibilities of the manager namely control and direction, organisation of relationships among different parties in the construction industry (Arikan and Dickens 2010). According to Smith (2012) planning helps in the realisation of forecasting through careful and continuous project planning. Planning helps in coordination of all the construction works to reach the set quality standards within the specified time (Oberlender 2010). He also argued that planning is an effective tool in preventing delays, cost overrun and decline in productivity.

Archid (2007) noted that use of the project life cycle helps to minimise project delays. Archid (2007) defines project life cycle as a series of activities which are necessary to fulfil project goals and objectives. He pointed out the benefits of using the project life cycle,

- The project life cycle helps all parties involved in the creation, execution of projects and planning to understand the process to be followed throughout the project life cycle. By doing so there is reduction in the occurrence of mistakes and errors in the construction process. It also helps in budgeting funds for the future use in the construction there by reducing delays in the payment of contractors.
- It helps to capture and document the best practice within the organisation so that the process within each phase can be improved continually and can be applied on future similar projects
- Enable effective application of project management software application system that is integrated with all appropriate corporate information system.

2.12 Summary

The chapter sought to establish what available literature has to say pertaining the topic under consideration. It also gives us the results and conclusion of those researches already conducted on the same area in different countries and environments from different aspects. The next chapter will unveil the methodology that will be used in gathering evidence

CHAPTER 3

RESEARCH METHODOLOGY

3.0 Introduction

The previous chapter looked at the related literature view about the area under study. This chapter looks at the research methodology within which the research was conducted and samples drawn therein, data collection methods used and sources of data. It outlines the data presentation and analysis of the research findings and ends with a summary

3.1 Research design

Yul (2009) defined a research design as a general plan that a researcher choose to incorporate the different components of the study in a rational and logical way thereby ensuring the researcher to effectively address the research problem. The research was carried out through the use of primary data obtained from questionnaire, interviews and examination of secondary data published by the Department of Public Works.

3.2 Case study

This research used a detailed case study to investigate the challenges faced in construction project delay .A case study is an approach to studying a social phenomenon through a thorough analysis of an individual case (Kummar 2005). Yul (2009) defines a case study as a detailed analysis and description of the activities of an area under study.

All gathered information is organised in terms of the case studies. A case study provides an opportunity for the intensive analysis of many specific details often looked by others methods. Yul (2009) pointed out that the approach rest on the assumption that the case being studied is a typical of cases of a certain type so that through intensive analysis may be made that must be applicable to other cases of the same time.

A case study is capable of exposing both quantitative and qualitative data about the research. A case study design can be designed to address just the specific problem to meet the study objective.

3.3 Population and sample

Sampling involves the process of selecting a sufficient number of elements from the population. Sample population is a subset of the population, Wegner (2013) defines

population as the collection of all observation of a random variable under the study. It is not practical to observe the whole population. The population for this research was drawn from contractors, engineers, consultants and workers from Public Works. Judgemental sampling was used as the main sampling technique. The survey targeted consultants, contractors and construction clients. They were identified to give their own opinion on the causes of project delays and the effect of construction delays on the economy, based on their experience. Table 3.1 below shows the population and sample size of the research.

Table 3.1 population and sample size of the research

Category	total population	sample size	Percentage
Accountants	6	5	83.33
Auditors	5	4	80
planning officer	2	2	100
DMO	3	3	100
Engineers	6	5	83
Contractors	6	6	100
Consultants	5	4	80
Architects	5	4	60
Director	2	2	100
Total	39	35	89.74

The researcher has a chance to interview representatives from contractors, engineers and architects. Declaration was given to all interviewees that information collected was to be used for academic purposes only. The criterion used for conducting interviews was dependent on time availability and the research expectations. Questionnaires were given to accountants, directors, DMO, planning officer and auditors

3.4 Data collection method

The research was carried out using both primary and secondary collection methods. According to Moser (2010) data collection methods are methods that allow the researcher to collect information about the object of study and about the setting in which they occur.

3.4.1 Primary data sources

Mozer (2010) defined primary data as first-hand information gathered by the researcher. Primary data can be collected through a number of techniques which includes interviews, discussions and questionnaires. Primary data means original data that has been collected specifically for the purpose in mind (Yul 2009). Primary data was gathered by way of personal interviews and as well as self-administered questionnaires. The researcher made appointments for interviews in advance.

Case studies can contain qualitative and quantitative data. This research aims to collect qualitative data from interviews and quantitative data from questionnaires. For this reason semi structured questions are used during data collection process as this allows the researcher to collect qualitative and quantitative data. Primary data is of an advantage as data collected is up to date and specific to the research, data is cheaper and fast to collect, data collected is considered to be up to date and has a close proximity to the reality. However, there is possibility for non-respondents and primary data is expensive to gather as it involves travelling costs

3.4.2 Secondary data

Secondary data is information used in research that has already been collected for another purposed rather than directly by the researcher (Chaleunvong 2009). Secondary data is of importance because it helps the researcher to substantiate and increase evidence from other sources therefore this project uses articles from newspapers, strategic plan,Public Works gazettes and minutes from management meetings. Data from secondary sources was relatively less expensive and less time consuming to collect..It broadens the base to which conclusion could be drawn, however the researcher has no control over secondary data and hence it may not be accurate and it may not be available in the required format.

3.5 Research tools and schedule

3.5.1 Questionnaires

Chaleunvong (2009) defined a questionnaire as a printed document that contains instructions and statements that are compiled to obtain answers from respondents. Questionnaires were sent to the respondent by hand delivery. The researcher designed structured questionnaires for use in conducting the survey that has a multiple and a free choice format.

Questionnaires provide a written confirmation of the respondent's view and feeling on the subject matter under consideration. Unlike the interview the questionnaire can cover a wide number of respondents at a lower cost, it also collects large quantity of data for consideration

from a considerable number of people over a reasonably short period of time and data is more reliable. Questionnaires permits secrecy .However the researcher observed that respondents were limited to think within predetermined limits and documentation and analysis was time consuming.

3.5.2 Interviews

Interview is a data collection technique that involves oral questioning of respondents either as an individual or as a group (Chaleunvong 2009). The criteria used for conducting interviews was depending upon the availability of time , the research expectation, level of involvement in the procedure and the research limitation as outlined in the first chapter.

The researcher observed that interviews were suitable for use by both knowledgeable and unqualified individual, permits clarification of questions and has a higher respond rate compared to written questionnaires. Interviews allow the researcher to explain questions in case the respondent requires the researcher to substantiate further. Interviews allow the researcher to ask more questions other than those on the questionnaire and there was instant feedback and limited bias as the researcher used semi structured questions

However the presence of the interviewer influenced responses and responses were less complete than information gathered through questionnaires.

3.5 Likert scale

Betram (2010) defined alikert scale as a psychometric response scale primarily used in question to obtain participants preference or degree of agreement with set statements. Responders were asked to indicate their level of agreement with the given statement by way of ordinal scale. The researcher used a likert scale because it is a powerful way to communicate and it helps the researcher to capture attention of the target audience and engage them. A numerical value was assigned to each potential choice and mean figures for all responses were computed at the end of the evaluation of survey. The researcher used the following likert scale:

Table 3.2 Likert scale

Likert scale	
Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

3.6 Data presentation and analysis

The researcher carried out a data analysis process to prepare data for analysis and to ensure that data was reasonably good. After the data had been received from interviews, questionnaires and secondary sources, the researcher edited data. Data entry and presentation were done. Information received in a hurry from interviews and respondents from questionnaire was arranged in order so that data can be clearly be coded systematically.

Data was presented in the form of frequency distribution tables, bar charts, pie charts, graphs, percentages for easy interpretation. And figures will be used to show relationship between variables. The collected data through questionnaire was analysed using the relative importance index technique from (Long et al 2008), the aim of the analysis was to establish the relative importance of various causes and effects identified as responsible for construction delay.

The scores for each cause and effects were collected by summing up the scores given to it by respondents. The relative importance index (RII) was calculated using the following formula

$$RII (\%) = \frac{5N_5 + 4N_4 + 3N_3 + 2N_2 + 1N_1}{5[5N_5 + 4N_4 + 3N_3 + 2N_2 + 1N_1]}$$

Where N1= Number of respondents answered strongly disagree

N2= Number of respondents answered disagree

N3= Number of respondents answered undecided

N4= Number of respondents answered agree

N5= Number of respondents answered strongly agree

3.8 Summary

This chapter covered the research design, sample size and composition of the sample. Secondary and primary sources of data were discussed including the strength and weaknesses of interview, questionnaires and secondary data and their suitability to the research. Lastly the methods of data presentation and analysis procedures were described.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

The proceeding chapter covered the research methodology. This chapter seeks to present and analyse data and interpretation of key research findings. Views from different respondents were considered and presented in this chapter and ends with a summary

4.1 Questionnaire Responses

Table 4.1 Shows percentages of questionnaire distributed and response received

Respondent	questionnaires distributed	Response returned	Percentage of response rate
Accountants	5	4	80
auditors	4	3	75
Planning officers	2	2	100
DMO	3	3	100
Engineers	5	4	80
contractors	6	5	83.33
consultants	4	4	100
Architects	4	3	75
Directors	2	2	100
Total	35	30	85.71

Of the thirty-five respondents who received the questionnaire, the researcher managed to get thirty returns representing 86% of the total population sample. The respondents' rate shows that respondents were enthusiastic and supportive in responding the questionnaire given to them.

4.1.2 Questionnaire analysis

4.1.2.1 Question 1: For how long have you been working for Department of Public Works?

Table 4.2 shows respondents' years of experience in the construction industry

Years of experience	Number of respondents	percentage
less than 5 years	2	7
6-10 years	3	10
11- 20 years	10	33
20 years and above	15	50
Total	30	100

As highlighted in table 4.2 more than 83 % of the respondents have at least more than ten years of experience in the Department of Public Works , this shows that respondents' overall responses contributed to the quality of the responses received and reliability of conclusion to be drawn by the researcher from the findings. This further implies that the respondents are experienced and they are able to answer the questionnaire regarding to construction industry. Therefore data collected from the respondents can be considered to be reliable.

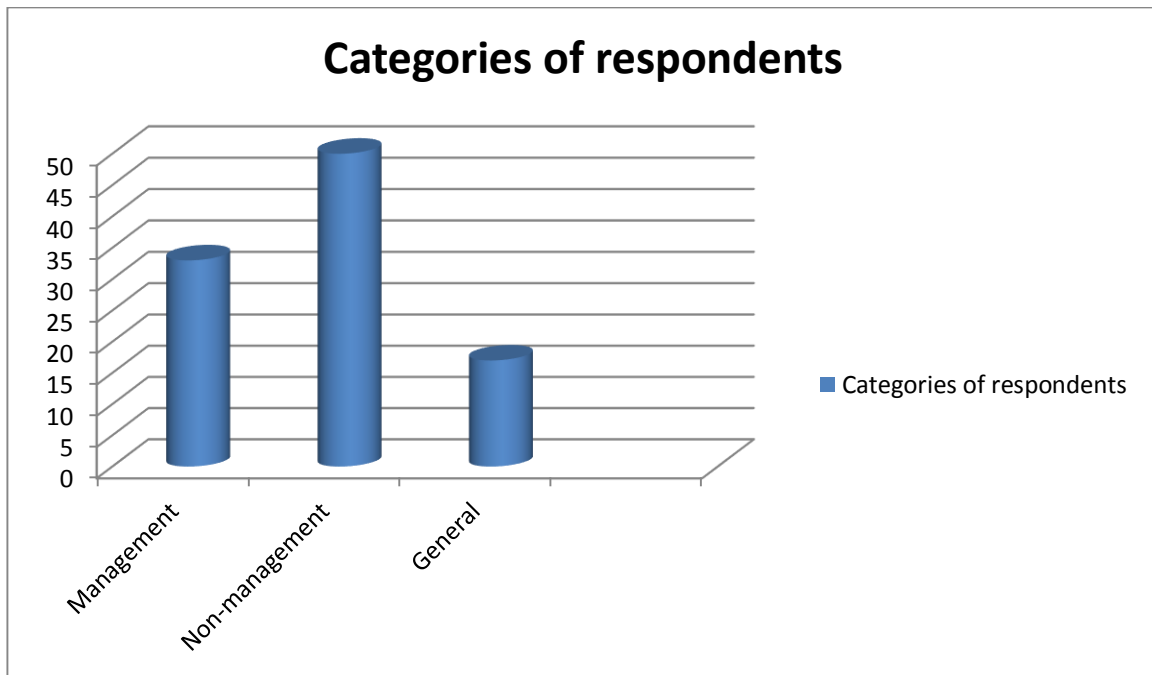
4.1.2.2 Question two: Which category do you belong in the Department of Public Works?

Table 4.3 Shows categories within which respondents fall into within the organisation

category	number of respondents
Management	10
Non-management	15
General	5
Total	30

Table 4.3 shows that 33% of the respondents fall under management team and 50% of respondents are non-management personnel and general employees contributed 17% of the sample population. This information is highlighted in fig 4.1 below

Fig 4.1 shows categories of the respondents.



4.1.2.3 Question 3

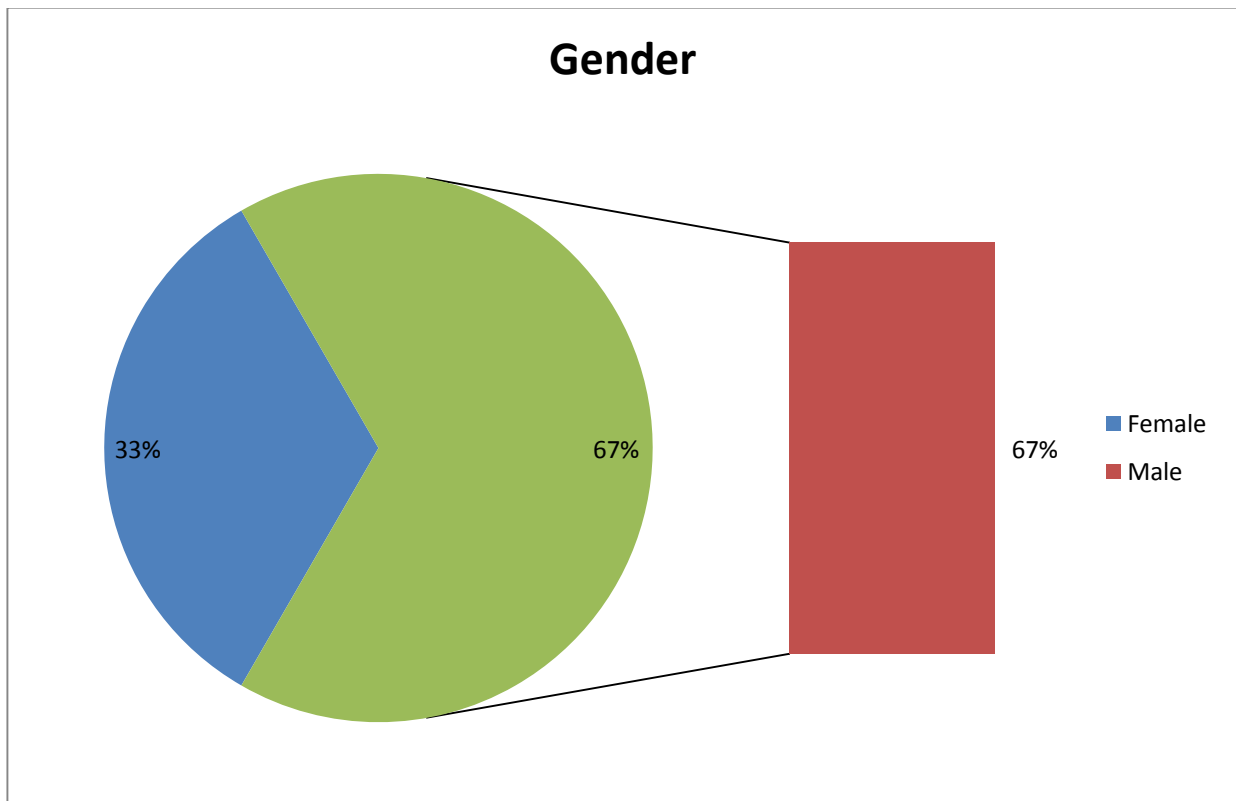
Please indicate your gender

Table 4.4 Distribution of respondents by gender

Gender	Number of respondents
Male	20
Female	10
Total	30

Table 4.4 Indicates that out of 30 respondents, ten were female and twenty were male therefore the results indicated an inequity in favour of men. The information is diagrammatically represented in fig 4.2

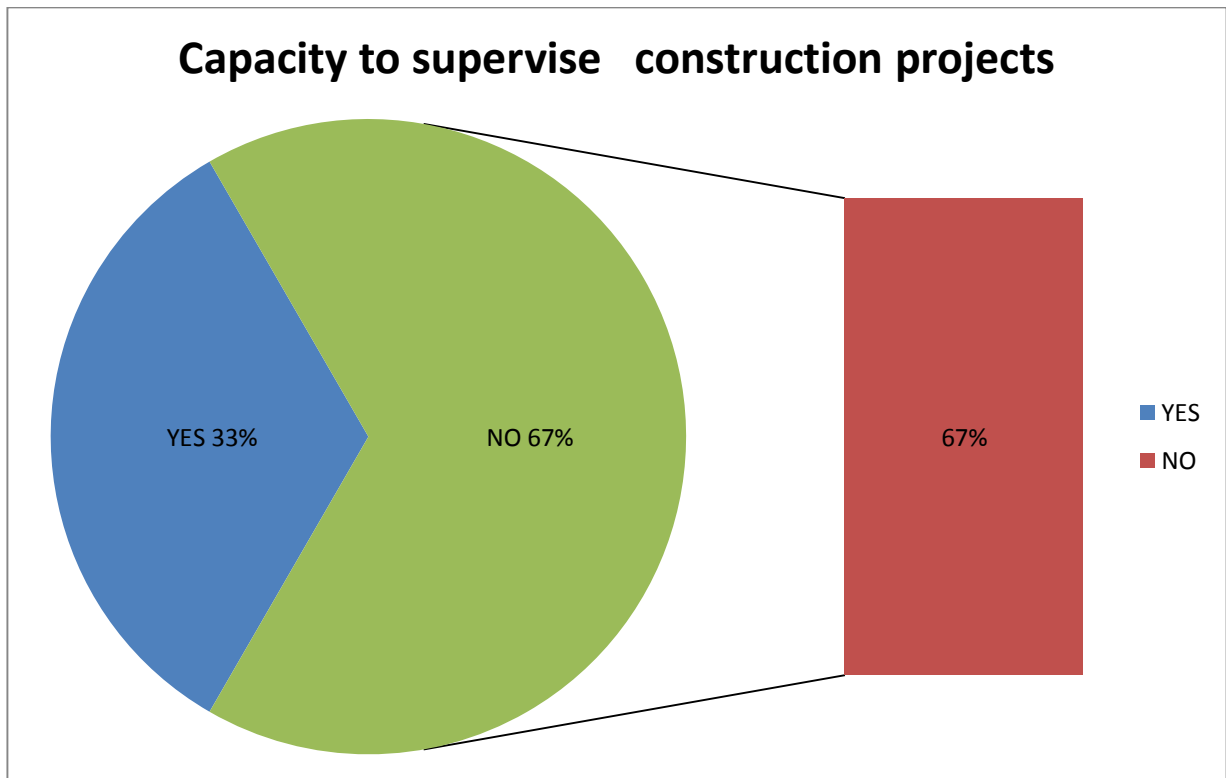
Fig 4.2 Percentage distribution of respondents by gender



4.1.2.4 Question 4

Do you have the capacity to supervise the implementation of capital projects?

Fig 4.3 capacity to supervise construction projects



As highlighted in fig 4.3 more than 60 % of the respondents have no authority to supervise the implementation of construction projects however a smaller percentage (33%) have the capacity to supervise the implementation of capital projects. This supports the statement that authority should not be entrusted to all workers

4.1.2.5 Question 5:

How are construction projects under the Department of Public Works funded?

Table 4.5 Financing of construction projects

Sources of finance	Number of respondents	Number of respondents	Total	Response rate (%)
	yes	no		
Internal sources	30	-	30	100
External sources	-	-	-	
Donor funded	-	-	-	
Others	-	-	-	
TOTAL	30	-	30	100

Table 4.5 shows that 100% of respondents agreed that the projects are funded using is internal sources of finance. This indicates that it is easy to account for the money spent and is easy to budget and control cost

4.1.2.5 Question 5:

Causes of construction delays

Table 4.6 causes of delay as listed in the questionnaire

Causes of delay		Number of respondents					Relative Importance index	
	Causes of delay	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree	RII (%)	Rank
1	Changes in drawings	20	10	0	0	0	94.29%	1
2	Lack of communication among parties involved	20	5	5	0	0	92.6%	2
3	Lack of funds to finance the project	20	4	4	2	0	92%	3
4	Lack of adequate information from consultants	15	4	4	5	2	86.43%	4
5	Fluctuations of building materials	12	9	2	3	4	85.66%	5
6	Slow decision making by clients	10	15	5	0	0	85.6 %	6
7	Project management problems	10	14	1	2	3	85.17%	7
8	Variations	12	5	7	3	3	83.27%	8
9	Equipment availability and failure	10	10	5	3	2	83%	9
10	Labour strikes	11	5	8	6	0	81.26 %	10
11	Bad weather	8	10	5	3	4	80.19%	11
12	Contractor insolvency	9	10	7	3	1	63.9%	12
13	Mistakes and discrepancies in contract documents	12	9	6	3	0	63.33%	13

[Source: primary data]

Table 4.5 lists the total responses per factor causing delay in public construction projects. Changes in drawings were ranked as the most prime cause of construction delay with a Relative Importance Index (RII) equal to 94.29%. This has been supported by Abel et al (2011) in their research, which pointed out that changes made by clients during construction projects lead to delays. This is closely followed by lack of communication among parties involved in the project with a Relative Importance Index of 92.6%, which was also supported by the interviewees and then lack of funds to finance the project with an RII of 92%.

Furthermore, lack of adequate information from consultants having an RII of 86.43% is ranked as the 4th. Changes in drawings is ranked as the most vital factor for a project to be accomplished properly within scheduled time. Changes in drawings can increase the final cost of the project and also cause delays in the accomplishment of work. It could also cause slow decision making, which is ranked as the 6th factor causing delay with a Relative Importance Index of 85.6%. For a project to be finished within scheduled time, funds should be available in time.

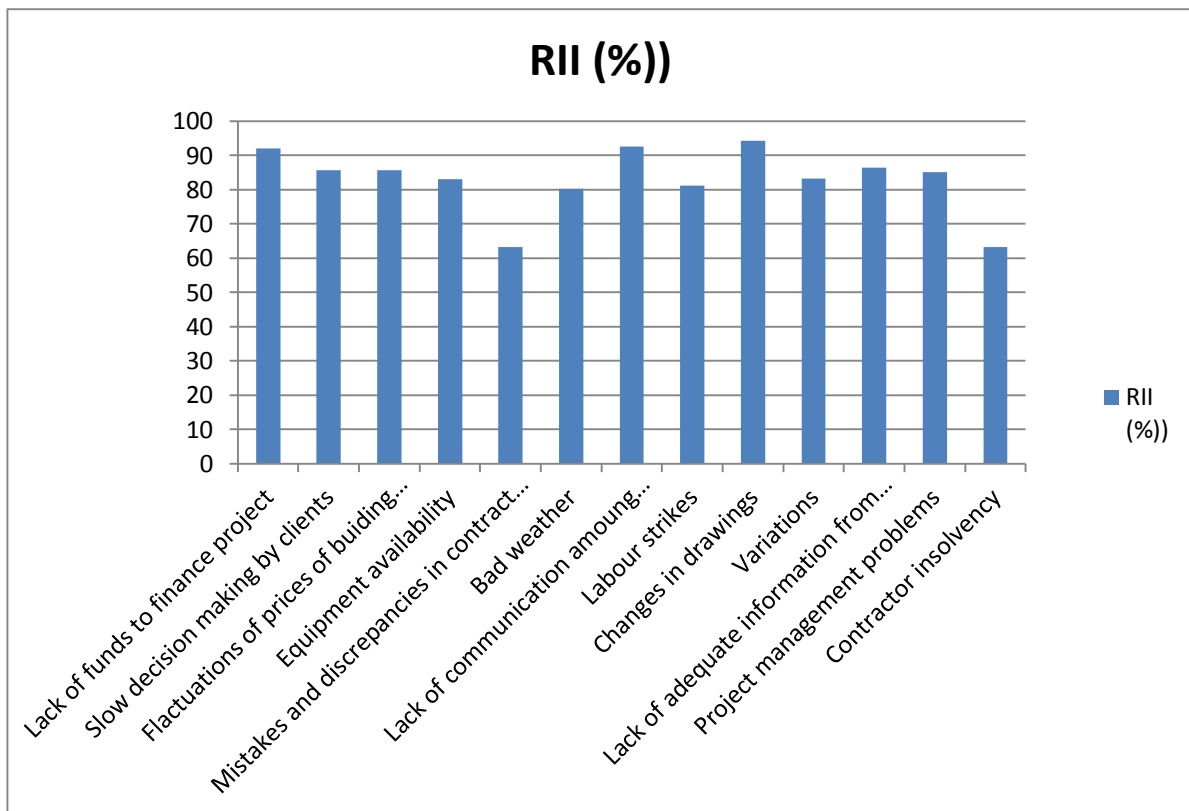
Fluctuations of building material is ranked as the 5th factor causing delay with a Relative Importance Index of 85.66%. This could either decrease or increase the final cost of the project depending on the market forces, that is, demand and supply on the market. Project management problems are ranked as the 7th factor causing delay with a Relative Importance Index of 85.17%, followed by variation with a Relative Importance Index of 83.27%. Equipment availability and failure ranked as the 9th factor causing delay with a Relative Importance Index of 83%. Equipment failure can lead to mismanagement of manpower, which is followed by labour strikes with a Relative Importance Index of 81.26%. This shows that labour strikes irregularly happen. Bad weather with a Relative Importance Index of 80.19% ranked as the 11th factor causing delay in construction projects. Bad weather affects work to be carried out on the site.

Contractor insolvency is ranked as the 12th factor causing delays in construction projects, having a Relative Importance Index of 63.9%. Insolvency of a contractor can lead to an increase in the time to be spent on the project and may run into debt, causing there to be variations. Mistakes and discrepancies are ranked as having an insignificant effect on delay, having a Relative Importance Index of 63.33%. This factor can cause collapse of the whole building and increase cost. The findings are dramatically represented in Fig. 4.4 below.

Contractors, consultants and engineers were also interviewed on the challenges faced in the implementation of construction projects. All the four interviewed indicated that the key challenges faced in the implementation of capital projects were changes in drawings by clients, lack of effective communication among parties involved in the project management process and inadequate funding of projects

From the minutes of the management meetings on the 13 December 2013, the researcher observed that lack of adequate funding was the main challenge faced by the organisation in the implementation of construction projects

Fig 4.4 Causes of delay



4.1.2.6 Question six:

Table 4.7 Effects of construction delay

Effects of delays		Number of respondents					Relative importance index	
	Effects of delays	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	RII (%)	Rank
1	Reduced profit	25	4	1	0	0	96.94	1
2	Wastages and underutilisation of manpower and resources	23	4	1	1	1	95.33	2
3	Arbitration	23	2	0	5	0	94.29	3
4	Abandonment of building projects	20	5	3	1	1	92.73	4
5	Litigation	17	5	2	1	5	90.17	5
6	Tying down of client capital due to non-completion of projects	15	1	3	4	5	86.93	6
7	Disputes between parties involved in the construction process	12	9	0	6	3	84.86	7
8	Time overrun	12	7	6	3	2	84.21	8
9	Increase in the final cost of the project	10	8	4	6	2	81.48	9

The effects of construction delays are presented in table 4 above, these effects are analysed using the relative importance index. It can be noted that all the above effects of delays have relative importance index greater than 80%. Reduced profit was ranked as the most prime effect of construction delays with a relative importance index of 96.94%. This is closely followed by wastages and underutilisation of manpower and resources with a relative importance index of 95.33%. Arbitration was ranked as the third significant effect of delay

with a relative importance index of 94.29%, this was followed by abandonment of building projects with a relative importance index of 92.73% and litigation with a Relative importance index of 90.17.

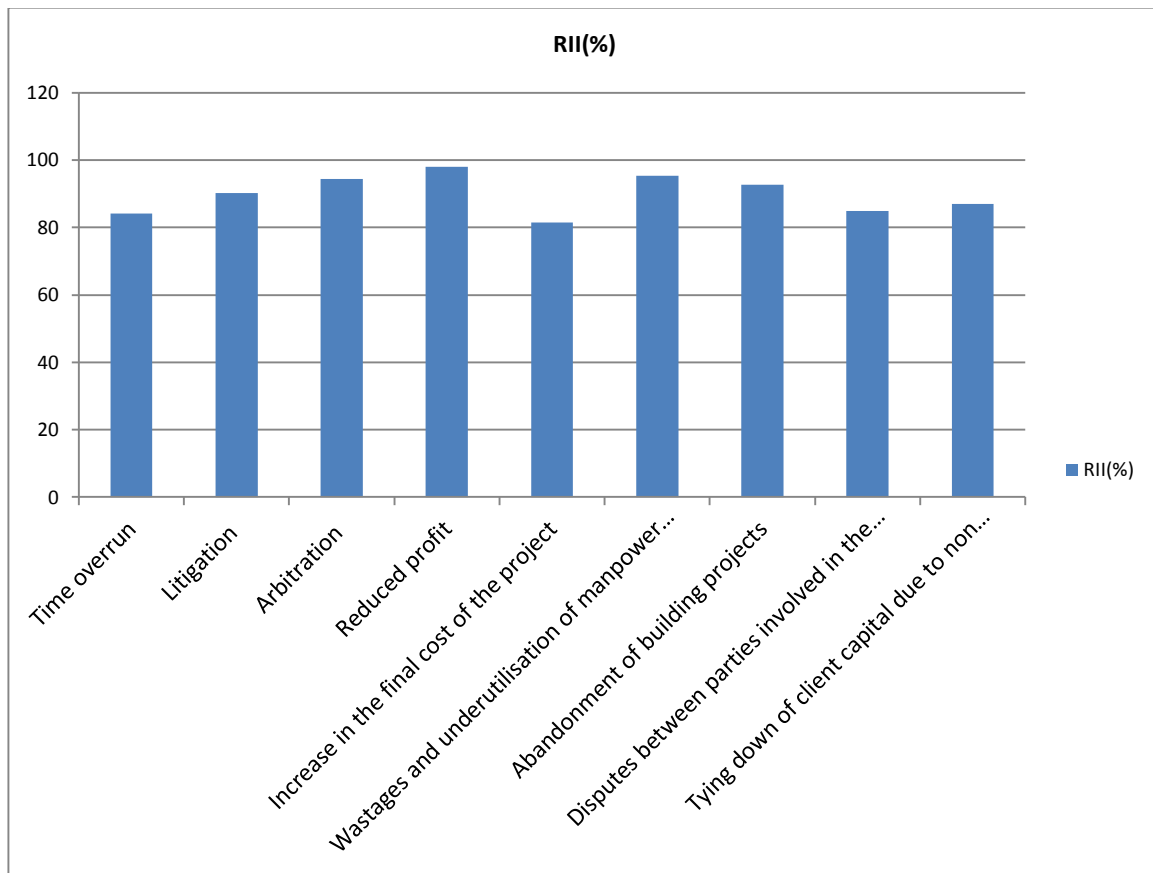
Tying down of client capital due to non-completion of projects was ranked as the 6th effect of delay with a relative importance index of 86.93 % this was due to the fact that the client cannot be refunded his money back if the project is not finished in time.

Disputes among parties involved in construction was ranked as the 7th effect of delay with a relative importance index of 84,86% this was followed by time overrun with relative importance index of 84.21% and Increase in the final cost of the project ranked as the last effect of delay compared to others with a relative importance index of 81.48%.

Time in every phase of life is really essential, when a contract is done and a date is given, the effect of delay really affects time. Time affect other factors, the increase in the final cost and more money to be spent than the budgeted amounts. Delays will also cause wastages and underutilisation of manpower and resources. Disputes among parties involved, litigation and arbitration have a close link. Disputes among parties involved can encourage litigation and arbitration. If the decision of the arbitration board is not favourable to either of the parties involved this can lead big time fight which cut the progress of work. This information is diagrammatically represented on the bar chart below

Consultants, contractors and engineers were also interviewed on the effects of delays on construction projects. Of all the four interviewed gave an outline on what they see as the effects of delays. They pointed out that delays in construction reduce company profits and wastages of delays lead to wastages of manpower especially when workers are paid using time rate system. Delays can also lead to conflict within the organisation. From the minute's management meeting on 5 February 2012 the researcher observed that the company have no adequate finance to finance the project and hence suppliers were not willing to supply goods and services on credit

Fig 4.5 Effects of delays



4.1.2.7 Question 7

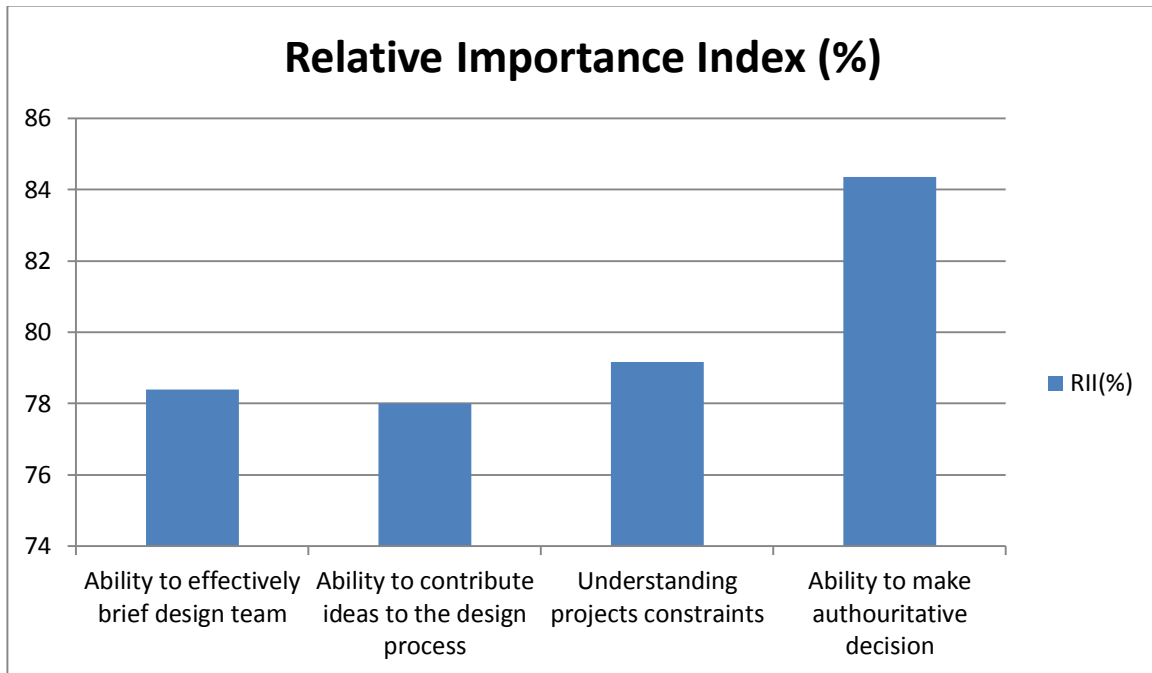
The impacts of clients understanding on design, procurement and delivery time

Table 4.8 Influence of clients understanding on design, procurement and delivery time

Influence of clients understanding		Number of respondents					Relative Importance Index	
	Influence of clients	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	RII (%)	Rank
1	Ability to make authoritative decision	12	10	8	2	0	84.96	1
2	Understanding project constraints	10	4	4	6	6	79.16	2
3	Ability to effectively brief design team	8	8	4	6	4	78.4	3
4	Ability to contribute to ideas to the design process	9	5	6	7	3	78	4

Basing on relative importance index ranking criteria on the impact of client understanding on design, procurement and delivery time shown in table 4.6. Ability to make authorities decision was ranked as the most significant influence of clients with a relative importance index of 84.36 %. This was followed by understanding projects constraints with a relative importance index of 79.16 %. Ability to contribute ideas to the design team was ranked as the last influence of clients understanding to be considered with a relative importance index of 78 %.. From the above it can be seen that client understanding have great impact on the project implementation process. This information is diagrammatically shown in fig 4.6 below

Fig 4.6 Influence of client understanding on design, procurement and service delivery



4.1.2.8 Question 8,

Do you have any general comments regarding ways of reducing or eliminating delays on projects?

The respondents pointed out the following ways of reducing project delays

Long bureaucratic levels involved in honouring payments process of contractors especially government project should be minimised to reduce delays in the payments of contractor .The respondents pointed out that during the planning phase appropriate funding levels should be determined and formulation of budgets should be initiated. .

The respondents pointed out that there should be effective internal controls within the organisation and management should ensure implementation of these controls to avoid bias during the procurement process. They also argued that the project mission should be clear to all project team player as there are of significant to all stages of the project.

They also pointed out the following Clients should minimises changes in designs to avoid delays, payments should be made within scheduled time to improve the contractor’s ability to finance the project. There should be incentives awarded to contractors who deliver projects

within stipulated time and penalties should be given to contractors, who fail to deliver projects within stipulated time,

4.2 Interview response

The table 4.9 below shows the planned interviews which were successfully planned

Category	Planned interview	Successful interview	% of response rate
contractors	2	2	50
consultants	2	1	25
engineers	1	1	25
TOTAL	5	4	100

Out of five scheduled interviews four were successful representing 80% response rate. This shows that interviewees were enthusiastic and cooperate in responding the interview questions Appendix E shows the question asked during the interviews.

4.2.2 Responses to interviews

From the interview question used the following findings were found

4.2.2.1 The following are the effects of delay on service delivery from respondents' opinions

Delay can lead to loss of interest by stakeholder, waste of money and time, blacklist by authorities and reduced client's goodwill. Delays affect consumer's perception on waiting as waiting may be costly. Time is valuable to clients waiting for a service can be annoying frustrating and ultimately a determinate factor of consumer dissatisfaction. Waiting time have a negative relationship with overall service valuation and it can adversely affect future behaviours and decision

4.3.2.2 The following are possible solutions to the implementation of challenges.

Team members must be involved in decision making through discussion of work. The organisation should seek concerns and opinion of team players and try to work on them. The organisation should understand project constraints. The mission of the project must be clearly established so that team players could have direction of what should be accomplished. The

team players should analyse work sequence and develop appropriate organisational structure to achieve and maintain work flow.

Plans should be monitored and updated to approximately reflect work status. Payments should be made in time by clients to enable contractors to procure materials in time. There should be opportunities to extend skills and experience of project team players

Long bureaucratic process involved in the payments of contractors should be minimised and funds must be available before projects commences. Their organisation should have a well organised cohesive facility team to manage, plan and design the project process

From the secondary data the respondents observed that the company was willing to retrain most of their workers on the implementation of construction projects and the company was planning to recruit more skilled workers in the field of project management

4.4.2.3Secondary data

From the minutes of the management meetings on the 13 December 2013, the researcher observed that lack of adequate funding was the main challenge faced by the organisation in the implementation of construction projects

4.4 Summary

This chapter highlighted the data analysis, presentation as well as findings of the research. It also shows responses from questionnaire and interview. The next chapter will look at the summary of findings, recommendation and conclusion

CHAPTER 5

SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.0 Introduction

The previous chapter covered data presentation and analysis as well as discussion of the findings. This chapter is the final chapter of the research. It covered summary of the research and conclusion based on the findings presented in the data presentation and analysis and recommendation

5.1 Summary

The study was carried out to investigate the challenges faced in construction project completion.

In a nutshell the research began with chapter one which introduced the subject matter of the study by clearly outlining its key areas. The chapter aimed at highlighting the background of the study, statement of the problem, research objectives, the research main questions, justification of the research. The chapter also identified the delimitation of the study, limitations and definition of terms

Literature review was carried out in Chapter 2, to critically review and analyse the applicability of past studies on determining the factors which led to delay on the current construction projects. Chan, Archid and Phua were the most prominent authors in chapter two

Chapter 3 gives an evaluation of the data gathered to be employed in this research. It gave a detailed analysis of the study's research design, population, sampling, sampling techniques, data collection methods to be used in the gathering data for the research and data presentation procedures to be employed in the analysis of the gathered data. The data was analysed using the Relative importance index. A case study was used to analyse the challenges faced in construction project completion. Chapter three discussed the implementation of capital projects, funding of capital projects, procurement fraud and control of expenditure and issues of consolidation

Chapter 4 analysed and presented the research findings. The data findings were analysed using the Relative Importance model Index and interpreted as they relate to the theory that

underlines the study. Data was analysed from the findings obtained from the interviews, questionnaires and secondary data. In chapter four data was presented and analysed through pie charts, graphs, percentages and tables

5.2 Overview of major findings

5.2.1 To examine the challenges faced in the implementation of construction projects

It was established that changes in drawings, inadequate funding and lack of effective communication were the main challenges faced in the implementation of construction projects

5.2.2 Effects of project delays on the economy

It was established that delays negatively affect the growth of the economy as a whole and increase the final cost of the project and it may also contribute to time overrun, litigation, arbitration and abandonment of projects. It was also established delays significantly affect the company profits there by affecting the growth of the economy.

5.2.3 Effects of construction delays on service delivery

It was established that waiting led to frustration of client, dissatisfaction, anger and anxiety. Waiting also affect future decisions of clients when selecting contractors

5.2.4 To suggest the methods of minimising project delays

It was established that clients should minimise changes in project designs, and clients must clearly set requirements of their projects to reduce errors in projects. There should be effective communication within the organisation and the client should be able to brief the design team and project goals should be clearly stated to all project players.

5.3 Conclusion

The main challenges faced in the implementation of capital projects are changes in drawings and inadequate funding of projects. Delays negatively affect the growth of the economy and increase the final cost of the project. To eliminate delays project mission should be clearly defined at the planning stage.

Despite various constraints that the researcher faced, the research was a success because the researcher managed to obtain all the objectives stated in chapter one.

5.4 Recommendations

According to the above mentioned findings, the following point can be recommended in order to minimise and control delay in construction

Effective communication should be implemented between project players involved in the implementation of construction projects. This was supported by Phua (2009) in his study pointed out that communication among construction firms and their client is the main factor that influences the success of a project. Miller and Turner conclude from their study that the owner should give warnings if he intends to change specifications in the project to reduce delays in project management process. Phua (2009) further argued that good communication among project players play an important role in the performance of a project. This was also supported by Chan et al (2010) in his study pointed out that ability of clients to effectively communicate changes and make contributions leads to the success of the project as it saves time and reduces construction errors

At the planning stage appropriate funding level should be determined taking into consideration changes in the price of materials. This helps the organisation to make payments to contractors in time, to improve the contractor's ability to finance the project and to motivate the contractor thereby maintaining their goodwill. This was supported by Mubarak (2010) in his studies pointed out that project planning is of importance as it helps in project scheduling, safety management, project control and costs estimation. Smith (2012) further supported that planning helps in realisation of focusing through carefully and continuous project planning. In support of project planning Oberlender (2010) pointed out that planning is an effective tool in preventing delays, cost overrun and decline in productivity.

The organisation should make use of project life cycle in the implementation of construction projects this was supported by Archid (2007) in his study pointed out that project life cycles helps to minimise project delays. He further pointed out that a project life cycle help all the parties in the creation, execution of projects and planning to understand the process to be followed throughout the project life cycle. It also helps in budgeting funds for the future use in the construction process there by reducing delays in the payment of contractors. Archid (2007) pointed out that project life cycle enable effective application of project management

software application system that is integrated with all appropriate information system. It helps to capture and document the best practice within the organisation so that the process within each phase can be improved continually and can be applied on future similar projects.

5.5 Recommendation for further studies

Construction is a dynamic, competitive, ever changing and challenging industry. More researches on construction delays should be done to develop methods of minimizing the effects of construction delays in Zimbabwe. Furthermore, similar studies should be performed in various provinces in order to provide reliable information.

REFERENCES

Books

Blissmas, N.G, Sherw, D, Tharpe, A and Baldwin, A. N (2009) Factors influencing project delivery within construction clients Multi project environment

Brabble, B.B and Callahan, M.T (2010) Construction delay claims 4th edition

Cadwel, N.D (2009) Procurement fraud, BPP Publishing, London,

Callahan, M.T, Quackenbush.D.G and Rowing, J.E (2009) Construction project scheduling

Chaleunvang,K (2009) Data collection techniques BPP Publishing, London,

Chan .D.W and Kumaraswamy. A (2008) Comparative studies of causes of time overrun in construction projects

Journals

Abinu, A.A and Jagbroo,G.O (2012) Effects of construction delays on project delivery in Nigeria construction industry, BPP Publishing, London,

Abdul.R.H and Berawi. F (2010) Project management techniques in planning and controlling construction projects 2nd edition, New York

Bell, R (2013) Reviewing the literature, The MacMillan Press LTD, London,

Gambuza, G.(2013) The Herald

Graham, D (2010) Managing residential construction projects: strategies and solutions. BPP Publishing, London,

Guile .J. (2013) Supply management chain , The MacMillan Press LTD, London,

Constitution of Zimbabwe Acts 2013

Haseeb, M, Xinhai-lu and Aneesa, B (2011) Problems and effects of delays in construction industry , The MacMillan Press LTD, London,

Ismail, S and Zacharia, Z (2010) Causes and impacts of disputes and delay the closing of final accounts in Malaysia construction industry , The MacMillan Press LTD, London,

Khalil, A. and Al Ghafly, M.A. (2009) Delay in public utility projects in Saudi Arabia Addison-Wesley Publishing Company,

Kongpasen.T (2009) Thailand and Hamburger construction crisis Pearson Addison Wesley, USA,

Kummer, J.R (2005) Project implementation review and fruition , The MacMillan Press LTD, London,

Liu, S and Shih, K (2010) A framework of critical resource chain for project schedule analysis, The MacMillan Press LTD, London,

Lucey, T. (2010) Supply management and completion of petroleum projects in Nigeria

Mbachu, J.and Nkando, R. (2009) Conceptual framework for assessment of client needs and satisfaction in building development process

Moser, C.A (2010) Survey methods in social investigation ,Jai Press Inc, Greenwich,

Miller and Turner (2010) Causes and effects of construction delays, Pearson Addison Wesley, USA,

Mukoshori (2014) Financial gazette

Murray, M and Seif ,M (2013) Causes of project delays in Nigeria construction industry

Odenyika and Yusuf (2010) The causes and effects of construction delay of housing projects in Nigeria, Addison-Wesley Publishing Company,

Okapala, D.C and Aniekwu, A.N (2009) Causes of high costs of construction in Nigeria, Chapman & Hall, London,

Phua, F.T.T (2009) Analysing the effects of construction delays, The MacMillan Press LTD, London,

Public Financial Management Act (Chapter22:19) print flow Zimbabwe

Schwartz,R (2010) Bidding disputes and construction delay Addison-Wesley Publishing Company,

Sweis, G., Sweis, R, Hammad, A and Shaboul, A. (2009) Delays in construction projects

Taylor, R.and Fullerton R (2010) Causes of delays in Iranian construction project:
international journal of construction management volume 10, issue 10 (2010)

Trauner. J.T, Maginelli, W.A. Lowe.J.S and Nagat .M (2009) Delay –Understanding them
clearly and delay analysis in construction and analysing them correctly Addison-Wesley
Publishing Company,

Yin, R.K(2009) Case study research design and methods 4th edition,Los Angels

websites

www.construction.com 3/9/2014

www.deloitte.com 5/9/14

www.suretylearn.com 5/9/2014

APPENDIX A: Approval letter



Midlands State University

Faculty of commerce Department of

Accounting

P. Bag 9055

Gweru

10 / 09 / 2014

To the Director

Re: Application for authority to carry out an academic research with your organisation.

I am a student at Midlands State University pursuing a Bachelor of Commerce Accounting Honours degree. It is a prerequisite that I carry out a research study in the fulfilment of the requirements of my degree. My research is entitled “**An investigation into the challenges faced in construction project completion?**” A case of department of Public Works Gweru. I hereby apply for authority to carry out this study in your organisation. All information to be given will be used for academic purposes only and a high degree of confidentiality will be exercised.

Your time and cooperation is greatly appreciated

Yours faithfully

Cynthia Tawanda

R111428N



Midlands State University
Faculty of Commerce Department of Accounting
P. Box 9055
Gweru

10/09 / 2014

Dear Respondent

Re: Request to respond to questionnaires

I am a student studying towards the completion of Bachelor of Commerce Accounting Honours degree at Midlands State University. It is a pre-condition to carry out a research during the final semester. My research is entitled “**An investigation on the challenges faced construction project completion**” A case of department of Public Works Gweru

I kindly ask you to assist me by filling the questionnaire attached to this letter. The questions are designed to study the research question. The information provided is for academic purposes only and will go a long way in helping me analyse the problem in question. Please note that all your responses will be kept strictly confidential

Yours sincerely
Tawanda Cynthia
R111428N

APPENIX B
QUESTIONNAIRE

Please respond by putting a tick in the boxes corresponding to the possible responses to be given question or by writing on the space provided. Do not write your name.

1 For how long have you been working for Department Public Works?

Less than 5 years	<input type="checkbox"/>	11-20 years	<input type="checkbox"/>
6-10 years	<input type="checkbox"/>	20years and above	<input type="checkbox"/>

2 Which category do you belong to in the Department of Public Works?

Management	<input type="checkbox"/>	Non-management	<input type="checkbox"/>
General	<input type="checkbox"/>		

3 Please indicate your gender

Female	<input type="checkbox"/>	Male	<input type="checkbox"/>
--------	--------------------------	------	--------------------------

4 Do you have the capacity to supervise the implementation of the project?

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

5 How are construction projects under the department of Public Works funded?

Internal sources	<input type="checkbox"/>	External sources	<input type="checkbox"/>
Donor funded	<input type="checkbox"/>	Others	<input type="checkbox"/>

Specify

5 Causes of construction delays in my own opinion:

	causes of delay	strongly agree	agree	strongly disagree	disagree	undecided
1	Lack of funds to finance the project					
2	Slow decision making by clients					
3	Fluctuations of prices of building material					
4	Equipment availability and failure					
5	mistakes and discrepancies in contract documents					
6	Bad weather					
7	Lack of communication among parties involved					
8	Labour strikes					
9	changes in drawing					
10	Variations					
11	Lack of adequate information from consultants					
12	Project management problems					
13	Contractor's insolvency					

6. Effects of delay on construction projects that I have noted

	Effect of delay	strongly agree	Agree	strongly disagree	disagree	undecided
1	Time overrun					
2	Increase in final cost of project					
3	Wastages and underutilisation of manpower and resources					
4	Abandonment of building project					
5	Disputes between parties					

	involved in the construction process					
6	Litigation					
7	Arbitration					
8	Reduced profit					
9	Tying down of client capital due to non-completion of project					

7 The following are the impact of clients understanding on design, procurement process and project delivery time. Tick the ones which are correct.

	influence of clients	Strongly agree	Agree	Strongly disagree	Disagree	Undecided
1	Ability to effectively brief the design team					
2	Ability to contribute ideas to the design process					
3	understanding project constraints					
4	Ability to make authoritative decisions					
5	ability to contribute ideas to the design process					

8 Do you have any general comments regarding ways of reducing or eliminating delays on projects?

.....

.....

.....

.....

.....

INTERVIEW GUIDE

- 1 What are the main challenges faced in the implementation of capital projects?
- 2 What are the effects of delays on the economy?
- 3 What are the effects of construction delays on service delivery?
- 4 What do you suggest as the possible solutions to the implementation challenges?