



**“Factors Influencing delays and cost overruns on construction Projects in Nigeria;
propose mitigation strategy”.**

Dissertation Submitted in part fulfilment of the requirements

for the degree of

M.B.A. in Project Management.

FAITH O U OKAFOR

Registration Number:

10033328

Supervisor: Shaun Hayden

Word Counts: 21,035

August 2016

DECLARATION

I FAITH OKAFOR, declare that this research is my original work and that it has never been presented to any institution or university for the award of Degree or Diploma. In addition, I have referenced correctly all literature and sources used in this work and this work is fully compliant with the Dublin Business School's academic honesty policy.

Signed: _____ Faith U. Okafor _____

Date: _____ August 2016 _____

ACKNOWLEDGEMENT

Am eternally grateful to the Lord Almighty for the wisdom, knowledge and strength He gave me to write this dissertation; In His mercies He provided the things I needed. May His name be praised forever, Amen.

My unreserved gratitude goes to my able Supervisor Shaun Hayden, for his assistance, guidance and for always being there for me, throughout the research process. Thank you so much sir it was such a privilege working with you. I would like to appreciate my lecturers, particularly Paul Taaffe, for the knowledge they all impacted in me; God bless you all.

To my wonderful classmates, I am grateful to have studied with you all; I would love to do it with you guys over and over again. To My very good friend Mrs Rhoda Ebeleghe, thank you so much for your contribution in the course of this MBA, God bless you.

To my family, especially my beloved husband Obiora Okafor, Thank you so much for love, words of encouragement, your prayers, and financial support; all helped me in achieving this work. To all my well wishers, thank you so much for your wishes, I wish you all the best in Life!

ABSTRACT

Delay in the Construction Industry is a global phenomenon, which affects project completion and general performance, with regards to quality, time and cost. Delays are known to result to projects failures, increased cost, loss of productivity and revenue which in turn affects the economy of the Nation. The objective of this research work 1) To evaluate the rate and effect of delay and cost overrun in completion of construction projects in Nigeria. 2) To identify the factors that lead to project delays 3) To propose a mitigation strategy for improving and achieving Construction Project based on the outcomes of the study. A questionnaire was distributed among two construction companies in Nigeria, targeting the Contractors, Project Managers, Civil Engineers and Architects. The number distributed was 100 out of which only 95 were returned.

From this research work, it was gathered that the level of project delay and failures in Nigeria is very high which is majorily influenced by the incompetency and experience level of Contractors, compared to the project assigned to them. Some of the factors that lead to Project delays include, high level of Corruption within the Government and Construction Industry, Communication Barrier, Poor Contract Management, Changes in site condition, Shortage of material and improper planning. Some Mitigation Strategies were proposed; they include High level of stakeholders' influence, Effective Government Policies and increased Project Management awareness in the Nigeria Construction Industry. The Quantitative Research Method was used to analyze and interpret the research findings.

TABLE OF CONTENT

Declaration	2
Acknowledgement	3
Abstract	4
Table of Contents	5
List of Figures	9
List of Tables	12

Chapter 1: Introduction

1.1 Rationale for Topic	17
1.2 Research Question	17
1.3 Research Objectives	18
1.4 Research Hypotheses	18
1.5 New and Relevant Research	19
1.6 Recipient of the Research	20
1.7 Organisation of the Dissertation	20

Chapter 2: Literature Review

2.0 Introduction	22
2.1 Construction Industry	22
2.2 Construction in Nigeria	24
2.3 Construction Delays in Nigeria	25
2.4 Types of Delay Causes in Construction Projects	26
2.5 Causes of Construction Delay/Cost Overrun	27
2.6 Effects of Delay on Construction Projects	30
2.7 Mitigation Strategy	31

2.7.1 Earned Value Management	32
2.8 Conclusion	33
Chapter 3: Research Methodology	34
3.1 Research Design	35
3.1.1 Research Topic	35
3.1.2 Research Question and Research Hypotheses	35
3.2 Research Philosophy	36
3.3 Research Approach	37
3.3.1 Deductive	37
3.3.2 Inductive	38
3.4 Research Strategy	39
3.5 Research Choice	40
3.6 Data Collection	41
3.6.1 Primary Data Collection	41
3.6.2 Secondary Data Collection	42
3.7 Editing	42
3.8 Coding and Analysis	42
3.9 Time Horizon	43
3.10 Population and Sample	44
3.11 Ethical Issues	44
Chapter 4: Data Analysis and Findings	46
4.1 Quantitative Research Method	46

4.2 Structure of Data Analysis	46
4.3 Demographic Data and Interpretation	47
4.4 Data Findings and Interpretation	54
4.4.1 Presentation according to Research Objectives	54
4.5 Conclusion	79
Chapter 5: Discussion	80
5.1 Research Question 1	80
5.2 Research Question 2	81
5.3 Research Question 3	82
5.4 Research Qustion 4	83
5.5 Hypotheses Testing	84
5.6 General Conclusion	86
5.7 Limitation of the Research	87
5.8 Recommendations	88
Chapter 6: Reflection	90
6.1 Introduction	90
6.2 The Learning Style	90
6.3 Reflection on Process.....	91
6.4 Reflection on use of sources	93
6.5 Reflection on MBA.....	94
6.6 Conclusion.....	95
Bibliography	96-101

Appendices102-107

LIST OF FIGURES

Fig. 1: Research Onion	35
Fig. 2: Research Choice	41
Fig. 3: Pie Chart showing Gender Distribution of Respondents	48
Fig. 4: Pie Chart showing the Age Range Distribution of Repondents	49
Fig. 5: Pie Chart showing the Nationality of Respondents	50
Fig. 6: Pie Chart showing the Job Description of Respondents	51
Fig. 7: Pie Chart showing the Years of Experience of Respondents	52
Fig. 8: Pie Chart showing the number of Respondents that has managed Construction.. Project befor and those that have not	53
Fig. 9: Pie Cahrt showing the Competency of Contractors in Nigeria	55
Fig. 10: Pie Chart showing the Experience of Nigeria Contractors compared to the Project assigned to them	56
Fig. 11: Pie Chart showing the Delay Frequency on every 20 Construction Projects Execution in Nigeria	58
Fig. 12: Pie Chart showing the Delay Frequency of Project Execution in Nigeria	59
Fig. 13: Pie Chart showing the Level of Delay Frequency on Project Closing time in Nigeria	60
Fig. 14: Pie Chart howing Project Scpe creep influence on Construction Delay	61
Fig. 15: Pie Chart showing the Impact of Delay on Project Failures	62
Fig. 16: Pie Chart showing that Delay leads to disutes between Clients and Contractors	63
Fig. 17: Pie Chart showing Delay leads to Increase in Cost, Loss of Productivity and Revenue	64

Fig. 18: Pie Chart Showing Communication Barrier as a major factor in the cause of Nigeria Construction Delay	66
Fig. 19: Pie Chart showing impact of High level Corruption within the Government and Construction Industry	67
Fig. 20: Pie Chart showing there are major causes of Construction Delay in Nigeria	68
Fig. 21: Pie Chart showing the variables that influence time and cost overrun on Project Construction in Nigeria	70
Fig. 22: Pie Chart showing that price fluctuation is the most severe cause of Project Cost escalation in Nigeria Construction Industry.....	71
Fig. 23: Pie Chart showing Inaccurate work Schedule results to Uncertainty and Time Overrun of the Entire Project	72
Fig. 24: Pie Chart showing Project Management Awareness in Nigeria Construction Industry	74
Fig. 25: Pie Chart showing that increased Knowledge and Competency Level in project Management by Contractors helps prevent delays and Construction Failure in Nigeria	75
Fig. 26: Pie Chart showing that Government Policies could minimize Project Delays	76
Fig. 27: Pie Cahrt showing that High Level of Stakeholders' Influence prevents Delays in Construction Industry.....	77
Fig. 28: Pie Chart showing that Good Mitigation Strategies can lessen Delays and Failures when properly implemented.....	79
Fig. 29: kolb learning style	109

LIST OF TABLES

Table 1: Gender Distribution of Respondents	47
Table 2: The Age Range of Respondents	48
Table 3: The Nationality of Respondents	49
Table 4: The Job Description of Respondents	50
Table 5: The Years of Experience in Construction Industry	51
Table 6: Response on if the respondents have managed a Construction Project before	53
Table 7: Response on Competency rate of Contractors in Nigeria	54
Table 8: The Experience Level of Nigeria Contractors compared to Project Assigned to them	56
Table 9: The Delay Frequency in every 20 Construction Projects Execution in Nigeria	57
Table 10: The level of Delay frequency on Project Execution in Nigeria	58
Table 11: The Level of Delay Frequency on Project Closing time in Nigeria	59
Table 12: Responses on if Project Spe creep has influence on Construction Delay	60
Table 13: Responses on if Delay has great impact on the massive Project Failures in Nigeria	61
Table 14: Responses on if Delay leads to many negative effects such as disputes between Clients and Contractors	63
Table 15: Responses on Delay is believed to cause Increase in Cost, Loss of Productivity and Revenue.....	64

Table 16: Responses on Communication barrier is one of the major factors in the cause of Nigeria Construction Delay	65
Table 17: Responses on High Level of Corruption within the Government and Construction Industry in Nigeria can be considered to have great impact on Construction Project Delay	67
Table 18: Responses on some major causes of Construction Delays in Nigeria	68
Table 19: Responses on the problems that influence time and cost overrun on Project Construction in Nigeria	69
Table 20: .Price Fluctuation is the most severe caue of Project Cost escalation or Cost Overrun in Nigeria Construction Industry.	70
Table 21: Responses on the Problem of Inaccurate work schedule in many Construction Projects in Nigeria have resulted to Uncertainty and time Overrun of the entir Project	71
Table 22: Responses on the Level of Project Management Awareness in Nigeria Construction Industry.....	73
Table 23: Responses on Increased Knowledge and Competency Level in Project Management by Contractors would help prevent delays and Construction Failures in Nigeria	74
Table 24: Responses on Causes of Construction Delays in Nigeria can be avoided to the barest minimum through Effective Government Policies.....	75
Table 25: Responses on High Level of Stakeholders’ influence could prevent delays and failures in Construction Industry.....	76
Table 26: Responses on Good Mitigattion Strategies can lessen Construction Delays and Failures when properly implemented throughtout	

the Construction Project Life Cycle in Nigeria.....78

Abbreviations

PM- Project Management

EVM- End Value Management

EVA- End Value Analysis

CHAPTER ONE

INTRODUCTION

The Construction Industry is of crucial importance to the economy and national development of a nation, particularly in Nigeria. It plays an essential role in the socioeconomic development of a nation, and its nature is a cyclical industry aligned with economic performance generally. There cannot be much progress in national development without the provision of basic infrastructure and amenities. The Construction sector is a crucial factor of competitiveness in the economy, it provides the infrastructure and buildings on which every other sectors relies on. In economic terms, the importance can be assessed by the rate of investment. In Nigeria's third national development plan, the planned expenditure on construction activities accounts for about 40 % of the 30 billion earmarked for the whole plan period.

Mogbo (2004) noted that construction is being used to control the economies of nations. It is always strongly related to politics, economics, sociology and the legal framework. Political contribution in construction planning is obligatory in the current world democracies. Construction cannot grow in a weak and docile economy. It cannot feature where there is social distress and social instability. Hillebrandt, (1985) stated that in developed countries, construction is considered unique hence it can stimulate the growth of other industrial sectors. However, looking at the growth of the Construction Industry in terms of its contribution to GDP in isolation is somewhat misleading because of the crucial roles played by the industry. Therefore, improving construction efficiency by means of cost effectiveness and timeliness would certainly contribute to cost saving for the country as a whole.

The Construction Industry in Nigeria is faced with lots of problems, among which is delay in project execution. It has been researched that delay is a major setback in Nigeria Construction Industry. It was observed that the performance of the industry in terms of time was poor. Odeyinka and Yusif (1997) has shown that seven out of ten projects surveyed in Nigeria suffered delays in their execution. Mogbo (2004) stated that, construction is being used to control the economy of nations; it is always strongly related to politics, economics, sociology and the legal framework. Over the years, several emphases were made concerning the high rate of project delays and abandoned in different parts of Nigeria after enormous fiscal mobilizations.

Furthermore, Kumaraswamy and Chan (1998) studied delays in Hong Kong Construction Industry. They emphasized that timely delivery of projects within budget and to the level of quality standard specified by the client is an index of successful project delivery. Failure to achieve targeted time, budgeted cost and specified quality result in various unexpected negative effects on the projects. Normally, when the projects are delayed, they are either extended or accelerated and therefore, incur additional cost. The normal practices usually allow a percentage of the project cost as a contingency allowance in the contract price and this allowance is usually based on judgment. Although the contract parties agreed upon the extra time and cost associated with delay, in many cases there were problems between the owner and contractor as to whether the contractor was entitled to claim the extra cost. Such situations, usually involved questioning the facts, causal factors and contract interpretation. Therefore, delays in construction projects give rise to dissatisfaction to all the parties involved and the main role of the project manager is to make sure that the projects are completed within the budgeted time and cost.

Among the major economic sectors, the importance of the Construction Industry is unique regardless of whether the country is underdeveloped, developing or developed. For instance, the Construction Industry is subjected to quarterly and annual statements of national accounts. This appears more than once in the national accounts: GDP, GNI and GFCF. The outputs are measured by gross output, capital formation and added value. More than half of GFCF consists of construction outputs. The homes, offices, roads, factories and shopping malls are all part of the outputs of the Construction Industry, among other capital or investment goods. The following can be said to be some of the major uses of the Construction Industry:

- ❖ Strategic tool to achieving sustainable development
- ❖ Construction output as growth initiating and growth dependent
- ❖ Contributes significantly to the economy; GDP, GNI
- ❖ Contributes to Gross Fixed Capital Formation (GFCF)
- ❖ Provide outputs to most industries and utilises the outputs of many industries
- ❖ Contributes significantly to the informal sector
- ❖ Income generation and re-distribution
- ❖ Employment generation, etc.

1.1 RATIONALE FOR TOPIC

The Nigerian Construction Industry is fast growing and it continues to occupy an important position in the Nation's economy, even though it contributes less than the manufacturing or other service industries. It's also yet to realize its full potentials despite Nigeria's deficit in infrastructures. The study on Construction Project delays in Nigeria has received increased attention over the past years with the main focus given to the effect of abandoned projects. Most studies on construction project delay based mainly in identifying the causes and effect, without developing a mitigation plan for project delays which often leads to project failures or abandonment in Nigeria. It has been researched and confirmed by numerous researchers that construction failure is on the increase in Nigeria based on delay. These delays represent an area of leakages in the construction project. In Nigeria, the problem of delay is severe especially when one considers the present economic condition of the country. According to Kasimu (2012), Construction delay is a universal evident reality not only in Nigeria but all countries across the globe. Delay in projects varies from one project to another.

Delay has an adverse effect on the project success in terms of timed, cost and quality. Many projects experience extensive delays and thereby exceed initial cost estimate. In addition to impacting the economic feasibility of projects capital baseline, extensive delays could cause a ground for disputes or lawsuits between owners and contractors, increased costs, loss of productivity and revenue, and contract termination. However, with the rapid increase in construction failures and delays in Nigeria, this research becomes necessary so as to have a basis for weighing the causes and factors influencing delays and cost overruns on construction projects in Nigeria and more importantly propose a mitigation strategy.

1.2 RESEARCH QUESTION

Research question is the most critical part of any research. It is essential to develop a research question that the researcher is interested in so as to enable him focus completely on the research. According to Eriksson & Kovalainen (2008, p. 37-39) the purpose of the Research question is to acquire and develop new information and knowledge from existing information on the topic of study with the objective of formulating your findings to enable you complete your study on the topic. Choosing the appropriate question is important, questions that are neither too broad nor too narrow.

In this research work, the researcher intends to focus on the following Research Question:

- ❖ What are the major factors responsible for delays and subsequent desertion of construction projects in Nigeria? This question seeks to provide information on factors responsible for failures, delays and neglecting of construction projects and then drawing attention to the most compelling factor.
- ❖ What variables influence time and cost overruns in construction projects?
- ❖ What is the rate and influence of delay in construction project in Nigeria?
- ❖ What are the proposed solutions for project delays and failure in Nigeria Construction Industry?

1.3 RESEARCH OBJECTIVES

The research objectives are derived from the research question allowing the researcher to gain insight into specific information of the topic in question. Saunders et al (2009) defines research objectives as clear, specific statements that identify what the researcher wishes to accomplish as a result of doing the research. Objectives are more generally acceptable to the research community as an evidence of the researcher's clear sense of purpose and direction. The purpose of this research work is

- ❖ To evaluate the rate and effect of delay and cost overrun in completion of construction projects in Nigeria.
- ❖ To identify the factors that lead to project delays
- ❖ To propose a mitigation strategy for improving and achieving construction project based on the outcomes of the study.

1.4 RESEARCH HYPOTHESES

Hypotheses are testable propositions about the relationship between two or more variables in a specified population (Saunders et al, 2009). The hypothesis translates the problem and purpose of the research into a clear explanation or prediction of the expected results or outcomes of the study. To facilitate the investigation justifying the research objectives and to answer the research question, certain assumptions have to be considered initially. The hypotheses that need to be proved or disapproved are as follows:

H1: Delay and cost overrun has a great impact on the massive project failures in Nigeria.

H2: Well-developed mitigation strategy could help minimise delay and failure in Construction Projects in Nigeria.

1.5 NEW AND RELEVANT RESEARCH

To be of value to the larger academic community, research must “further current knowledge in the field through both a synthesis of present knowledge and an original contribution extending that knowledge” Machi, L. and McEvoy, B. (2009). In Nigeria, Studies carried out by Odeyinka and Yusuf (1997) has shown seven out of ten project suffered delays in their execution. It was also observed that construction projects overrun their duration by 50% (Aibinu & Jagboro, 2002). The newness of this research will look to demonstrate the positive correlation between cost overrun and delay, and the impact of integrating all the project management knowledge area towards mitigating the elimination of delay and cost overrun in construction projects. A lot has been researched on Delay in Construction and its effects on project failures but most of those studies basically focus on the western part of world such as Australia, Canada, Iceland, Israel, Japan, New Zealand, Norway, South Korea, Switzerland, the United States and countries of the European Union, with little attention given to developing countries like Nigeria. Considering the crucial nature of Construction Industry to economic and national development, yet Nigeria frequently witness delays and failure in major public projects. Odeyinka and Yusif (1997) observed that 7 out 10 projects surveyed in Nigeria that suffered delay in their execution, showed poor performance in terms of time. With the fast growing failure and project abandonment in Nigeria, it is significant to continually review each project cycle.

The relevance of this research can be beneficial as it will look to ascertain the current level of delay and failures in projects. According to Kontangora (1993) as cited by Ayodele et al. (2011), there are about 4000 uncompleted or abandoned project belonging to the Federal Government of Nigeria with an estimated cost of above N300 billion which may take up to 30 years to complete at the execution pace and capacity of the present Government. also this issue of delay has been left without adequate attention for too long which is now having a multiplier effect on the construction industry in particular and the national economy as a whole. For the above reasons and due to personal interests, the author proposes to further

study the factors influencing delay and cost overrun in construction project in Nigeria and propose a mitigation plan using project management tool and techniques.

1.6. RECIPIENT OF THE RESEARCH

This dissertation is submitted as part of the curriculum of Masters in Project Management at Dublin Business School, in association with Liverpool John Moore University. The principal recipient of this dissertation will be Dublin Business School and Liverpool John Moore's University which is the awarding body and the academic community and practitioners who might be interested in this line of study. As this research is intended to perform a detailed study on factors influencing delays and cost overruns on construction projects in Nigeria and developing a mitigation strategy, some of the respondents of the survey questionnaires who have shown interest in this research and have given their permission to participate in the survey.

1.7. ORGANISATION OF THE DISSERTATION

This dissertation comprises of six chapters, the content of which is outlined below;

Chapter 1: Introduction

This chapter provides an introduction to the research topic. It outlines the research rationale, the research question, research objectives and hypotheses on which this research is based. It also explains the new and present research, researcher's suitability, dissertation process, research recipients, time, cost and project management and organisation of the dissertation.

Chapter 2: Literature Review

A literature review is an effective evaluation of selected documents or information on a research topic. In this chapter, the views of various authors and their attempts relevant to the topic have been described. The first is an overview of the Construction Industry, followed by Construction in Nigeria, Construction delays in Nigeria, types of delay causes in construction projects, causes of construction delay/cost overrun, the effects of delay in construction projects and the conclusion.

Chapter 3: Research Methodology

This chapter outlines the research methodology used in this research work. This includes the research design, research topic, research philosophy, research approach, research strategy,

research choice, data collection, editing, coding and analysis, time horizon, population and sample and ethical issues.

Chapter 4: Data Analysis and findings

In this chapter, the data collected were analysed and interpreted with regards to the research objectives. The findings were interpreted and a conclusion established.

Chapter 5: Discussion

This chapter aim at drawing a general conclusion of the research by interpreting and justifying the findings of the study to prove the hypotheses. The research questions were adequately answered and some recommendations given.

Chapter 6: Reflection

This chapter reflects on the researcher's learning and performance over the course of study and its application to his personal and professional life. This is followed by the Bibliography and Appendices.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This section involves an evaluation of the literature which provides the academic background to the area of study. Here the views of different authors and their attempts relevant to the topic have been described. As secondary sources, Literature reviews do not report new or original experimental work, but form the basis for research in nearly every academic field. According to Rowley and Slack, (2004:31), “All research needs to be informed by existing knowledge in a subject area”. Lewis and Thornhill (2012), explained that “an essential preliminary task when undertaking a research study is to go through the existing literature in order to acquaint with the available body of knowledge in the area of interest”.

The main purpose of Literature review is to both substantiate and clarify the Research Subject as well as ensure that the Research Question and Hypothesis are corroborated in an existing Research and there is consistency between the Literature review and the rest of the dissertation (Saunders et al, 2009). According to Hofstee (2006:104), “Literature review should be a critical evaluation of the previous writing that is relevant to what you are doing. ‘Critical’ here is characterized by careful evaluation and judgement, ‘not’ marked by a tendency to call attention to errors and flaws’.

2.1 CONSTRUCTION INDUSTRY

The Construction Industry is an economic investment and its relationship with economic development is well known. This Industry is made up of companies that undertake both minor and major construction projects in a Nation. It is volatile and dynamic in nature and requires tremendous capital. A unique element of risk in the industry is the manner in which disputes and claims are woven through the fiber of the construction process. As an essential component in socio-economic development of any nation, the industry often acts as a catalyst to stimulate the growth of a nation’s economy. Many studies have highlighted the

significant contribution of the Construction Industry to national economic development (Myers 2013). Although, some argue that the extent of its contribution is not always clear, others have argued that the Construction Industry can be used to regulate the economy, while others tend to differ. Some have argued that the contribution is limited to short term. There are also those who argue that it is economic growth that drives the Construction Industry rather than the industry advancing the economy, i.e. the Construction Industry is not a driver of economic prosperity rather it only follows the “path” defined by the total economic growth rate.

Construction Industry is a major index factor in the social and political integration of the society and ranks as one of the major budgetary areas of developing economies (Nwachukwu, 2008). The Construction Industry has been proven to stimulate rapid economic growth of any nation. There cannot be much progress in national development without the provision of basic infrastructure. This sector is a crucial factor of competitiveness in the economy as it provides the infrastructure and buildings on which every other sectors relies on. Saleh (2009) stated that “Construction is considered unique in that it can stimulate the growth of other industrial sectors”. According to Lewis (2011) one of the most dynamic and responsive industrial sector is that of construction. It is an industry in which the output is usually visible, which gives it political appeal, as well as having strong backward and forward linkages with other industries, which makes it a powerful tool for economic manipulation. Construction Industries are desired mainly for the services which they help to create as most business, social, religious, economic, industrial activities etc. operate on her structural base (Nwachukwu, 2008). Good examples of Construction Companies operational in Nigeria are; Julius Berger Construction Company, Reynold Construction Company, Lekki Construction Company, Dantata Construction Company, etc.

The Construction Industry makes both direct and indirect contributions to the economic growth of a country. This is because this sector is linked to several other sectors of the economy. A Nation is evaluated as developed, developing or Underdeveloped based on the quantity and quality of completed construction projects in their domain. This is because the Construction Industry can be seen as a driver of economic growth, especially in developing countries. It helps in the achievement of socio-economic development of providing shelter, infrastructure and employment. Haseeb et al. (2011) elaborated on the importance of construction to the economy of a nation as: On a large level, there is no suspicion that the development of a country depends upon its achievement of its advanced plain with elevated construction contents.

2.2 CONSTRUCTION IN NIGERIA

In Nigeria, like most developing countries, the Construction Industry plays a dominant role in the economic activities and advancement of the nation. Olowo-Okeke (1988) noted that Construction Industry accounts for about 60% of the Nation's Capital Investment and 30% of the Gross Domestic Product (GDP). Furthermore, the Construction Industry is said to have contributed about half of the total stock of Fixed Capital Investment in the Nigerian economy (Olaloku 1987). The industry also generates employment opportunities which place it second to the Government in the employment of labour (Husseini, 1991). When the Construction Industry was booming in the 1970s, the country's economy experienced similar effects during that period. However, from early to mid-1980s, the industry experienced a jolt and its effect was felt in all spheres of national life (Isiadinso, 1988). Some construction projects in Nigeria include infrastructural and utilities projects such as buildings (hospitals, school blocks, skill acquisition centres), electrification, jetties/ shore protection, channelization, roads/ bridges and water works, etc.

Buhari (1991) reported that the lull in construction of early 80s was not limited to Nigeria alone, it also occurred in Western Europe and America. The parent companies of these big timers in our midst were not only able to stay afloat the stormy ocean, but were able to expand their sales. They achieved this by initiative, creativity and research. Consequently, the federal and state government resorted to taking foreign loans as a quick solution to the problem. However, some of the measures taken by Government in order to revitalise the economy have further aggravated the situation. One obvious implication of this development is that the cost of imported raw materials and subsequently of the finished products has substantially increased (Husseini, 1991). These substantial increases as reported by Mbachu and Nkado (2004) have obvious negative implications for the major players and the industry, undermining the viability and sustainability of the industry. Regardless of the aggregate growth and dynamic nature of construction industry to the growth of national economy, Nigeria is still faced with a lot of construction project failures and abandonment due to delay. Projects are considered delayed when their specified completion periods have not been achieved. Mohammed et al. (2012) stated that "Delay is one of the major problems in Nigeria construction industry". Olusegun et al. (2011) aligned with the above view by stating that "delay have knock on effect on the construction industry and indeed in the whole economy". Assaf and Al-Hejji (2006), studied the causes of delay in large building construction projects in Saudi Arabia and outlined the most important causes of construction projects delays as:

Approval of shop drawing, Delay in construction payments, Cash flow problems during construction, Design changes, Conflicts in work schedule of sub-contractors, Slow decision making, Executive bureaucracy in the owners' organizations, Design errors, Labour shortage and Inadequate labour skills. There are more than 2000 plus uncompleted and abandoned public project in Nigeria which is federal government projects estimated at over N300 billion and may take 30 years to complete at the present execution capacity of Government. (Kontangora, 1993). Despite the impact delay has on construction projects, there hasn't been adequate attention on how to checkmate it for too long which is now having huge effect on the Construction Industry in particular and the national economy as a whole.

2.3 CONSTRUCTION DELAYS IN NIGERIA

Delays in the completion of construction projects is one of the most recurring problems in the construction industry and it is a common global phenomenon in the sense that it affects almost all the nations of the world. Construction delays are known to impact on the economic projections of a nation. Dlakwa and Culpin (1990), found out that in Nigeria about 60% of the total national investment goes into construction projects. Delays have costly, risky and undesirable consequences on project success in terms of time, cost, quality and safety. These impacts are not only confined to the construction industry but they influence the overall economy of a country. Nigeria Construction Industry has suffered many setbacks in terms of completion of the project at stipulated period within the predetermine sum. Majority of the construction projects in Nigeria experience time and cost overrun which in turn lead to the abandonment of project. Nigeria has continued to undergo through complex changes in the recent times such that clients, contractor's and consultant's now seek to adopt several survival strategies in the face of Keen competition in order to complete projects at the required time and cost. Construction Projects in Nigeria have suffered from serious time and cost overruns which have led to so many project abandonment and failure. It has resulted to multiplier effect on the economy of the country leading to colossal loss of scarce resources and poor infrastructural development. A typical example are flyover projects at Owerri, the Onitsha-Enugu and Enugu-Port Harcourt express ways which have been abandoned due to time and cost overruns. These problems could be attributed to certain factors which need to be identify and examined critically. For instance, significant consideration of climatic condition, weather and environmental characteristics, usually challenge project success.

In addition, construction delay contributes to increase in interruption of project activities such as, late completion of project, increase in project duration and increase on

initial project budget in of construction project. Kaminu et al (2007) did a Cost overrun in construction project management which could be attributed to commonly unpredictable weather, inflation in material cost, inaccurate material's estimates, complexity of project, contractor's lack of geographical experience, contractor's lack of project type experience, and non-familiarity with local regulations. However, most studies examine that the predominant factors influencing delays in construction project are cost of materials, cost increase due to inflation, inaccurate materials estimating and degree of project complexity.

2.4 TYPES OF DELAY CAUSES IN CONSTRUCTION PROJECTS

Delay in Construction projects has being an issue of economic concern. These delays could be as a result of various factors which needs urgent attention for economic development and improvement. Scholars have been able to broadly classify the different types of delays into two basic types. That is **Non- Excusable** and **Excusable Delays**. These have been explained below for better understanding.

Non- Excusable delay: This is caused solely by the contractor or its suppliers. The contractor is generally not entitled to relief and must either make up the lost time through acceleration or compensate the owner. This compensation may come about through either liquidated damages or actual damages, provided there is no liquidated damages clause in the contact. Liquidated damages are generally expressed as a daily rate that is based on a forecast of costs the owner is likely to incur in the event of late completion by the contractor. Examples include, Under estimate of production rates, Inadequate scheduling or management, Construction mistakes, Equipment problems, Bad luck, Liquidated damages or termination of contract, etc.

Excusable Delay: This delay occurs in the cause of carrying out a construction project by a contractor, whereby some limitations experienced by the contractor can be said to be a result of time constrain. That is to say that time consideration is essential. For instance, a situation whereby time extension is requested by a Contractor is not granted and proven to be excusable, constructive acceleration may exist and costs owed by Owner. Also, in Excusable Delay the Contractor may not be charged with liquidated damages. The Excusable Delays has been further broken into **Non-Compensable** and **Compensable** as explained below;

Non-compensable delay: This is caused by third parties or incidents beyond the control of both the owner and the contractor. Example typically includes acts of God, unusual weather, strikes, fires, acts of government in its sovereign capacity, etc. In this case, the contractor is normally entitled to a time extension but no compensation for delay damages.

Compensable delay: This is caused by the owner or the owner's agents. An example of this would be the late release of drawings from the owner's architect. An excusable, compensable delay usually leads to a schedule extension and exposes the owner to financial damages claimed by the contractor. In this case, the contractor incurs additional indirect costs for both extended field office and home office overhead and unabsorbed home office overhead.

2.5 CAUSES OF CONSTRUCTION DELAY /COST OVERRUN.

A few selected related articles are presented in this section on causes and effects of delay on construction works. Numerous researchers have conducted studies on the causes of delays in the construction industry in several developing countries across the globe like Ghana, Egypt, Iran, Vietnam, Indonesia, Thailand, Palestine, Saudi-Arabia, Jordan, United Arab Emirate (UAE) and so on. Diverse and varying factors leading to construction delay have been identified. However, some of these study areas have similarities with Nigeria as a developing country. Mansfield et al., (1994) studied the causes of delay and cost overrun in construction projects in Nigeria. The results showed that the most important factors are financing and payment for completed works, poor contract management, changes in site conditions, shortage of material, and improper planning.

Furthermore, Odeh and Battaineh (1999), evaluated the progress reports of 164 building and 28 highway projects constructed during the period 1996-1999 in Jordan. The results indicated that delays are extensive: the average ratio of actual completion time to the planned contract duration is 160.5% for road projects and 120.3% for building projects. Likewise, Al- Momani (2000), conducted a quantitative analysis of construction delays by examining the records of 130 public building projects constructed in Jordan during the period of 1990-1997. The researcher presented regression models of the relationship between actual and planned project duration for different types of building facilities. The analysis also included the reported frequencies of time extensions for the different causes of delays. The researcher concluded that the main causes of delay in construction projects relate to designers, user changes, weather, site conditions, late deliveries, economic conditions and increase in quantities. Moreover, Assaf, Al-Khalil, & Al-Hazmi, (1995) for example, provided a concise summary of the methodologies used by transportation agencies to establish the contract duration used for highway construction projects, and also provides a schedule guide for field engineers during construction. Similarly, Mohammed & Isah (2012), conducted a review on project delays in developing countries during planning and

construction stages. In their study they found that the delay and cost overruns of construction projects are dependent on the very early stages of the project.

In another related study, Wilson (1992) examined the role of the owner and architect/engineer's roles in the prevention and resolution of construction claims. Wilson summarized the causes of construction claims which include: extra work, project delays and acceleration, lack of management, limited site access and change in work schedule. Leishman, D.M. (1993) presented a paper which discussed different delay analysis techniques that are currently used by practitioners in the construction industry. It also discusses a proposed new delay analysis technique called the isolated Delay Type (IDT). These techniques were tested against a case example and their strengths and weaknesses highlighted. Empirically based time performance research measures either construction time (physical building time) or contract time (performance measured against the date stipulated in contracts). Aibinu (2006) investigated and assessed the causes of delays in building projects in Nigeria. The nine factor categories evaluated includes: client, contractor, quantity survey, architect, structural engineer, service engineer and supplier and subcontractor caused delays, and external factors (i.e. delays not caused by the project participants).

According to Oyewobi et al (2011), Corruption has a negative effect on project delivery and the consequences of corruption is that it dramatically increases the cost of construction by undermining corruption for instance, corruption on residential projects eliminates both middle and low income housing. The author further stated that Delay and Cost are the consequences of corrupt practices when contractors deliberately overstates the time and cost requirements and falsify time sheets in order to achieve a higher price from the kickbacks and also concealment of the quality of work whereby defective materials could be used or cheaper materials and inferior specification. Rodriguez et.al (2005) as cited in Oyewobi et al. (2011) highlights the devastating impact of corruption in construction such as wasted tender expenses, tendering uncertainty, increased project costs, delay, reputational risk among others. Corruption affects not only the cost or the time of projects but both environment for business and policy making. Ogunlana et al. (1996) also studied delay in building project in Thailand as an example of developing economies. They concluded that the problems of the construction in developing economies could be nested in three layers which are: -

- 1) Problem of shortages or inadequacies in industry infrastructure, mainly supply of resource
- 2) Problem caused by clients and consultants and

3) Problem caused by incompetency of contractors.

Moneke (2012) stated that there have been problems of inaccurate work schedules in many construction projects and these have resulted to scheduled uncertainty and time over run of the entire project. A field survey has indicated that many work schedules and work plan have failed to produce successful results with respect to timing, resource utilization and reliability of the schedule. They also stated that work schedule lead to cost overrun, low quality standard and poor schedule performance index. Odeyinka et al. (1997) studied the causes of delay in Nigeria housing projects. The main categories evaluated included client – consultant and contractor caused delays, and extraneous factors. Client-caused delays were found to arise from variation orders, slow decision making and cash flow problems while contractor caused delays were from financial difficulties, materials management problems, planning and scheduling problems, inadequate site inspection, equipment management problems and shortage of manpower.

Mansfield et al. (1994) looks into the causes of delay and cost overruns in the public highway and building projects and found that there was a very good agreement between the professionals surveyed on those factors that could cause delays. The four most important items agreed on by the contractor, consultants, and public clients surveyed were the financing of and payment for completed works, poor contract management, change in site conditions, and shortage of materials. Selecting a capable contractor is one of the most important tasks faced by contractor client who wishes to achieve successful project outcomes, as stated by Ogunsemi et al. (2013) contractor are one of the major players in the construction industry and the services they render are critical to the quality of the end product as well as meeting cost and time targets. A good contractor is expected to complete a project on time within budgeted cost and to the desired level of quality. Unfortunately, this is not always the case in Nigeria; construction projects are mostly characterized by delays, substandard work, cost overrun, disputes, claims and in extreme cases abandonment. On the other hand, it has been argued that the quality of a product to a large extent depends on the skills and experiences as well as the competence of the producing agents (contractors). Abd El-Razek et al. (2008) stated that seven semi structure expert interviews were conducted to identify the most appropriate causes of delay in Egyptian building project and the most important causes identified by the survey based on an overall result were: financing by contractor during construction, delays in construction payment by owner, designer changes by owner or his agent during construction; partial payments during construction; and non-utilization of professional construction/ contractual management.

Al-kharash and Skitmore 2009), conducted a survey on the delay in Saudi Arabian public sector construction project which showed that there are five causes that have the greatest effect on delay. These causes are as follows:

- (1) Lack of finance to complete the work by the client
- (2) Slow decision making by client
- (3) Suspension of work by owner
- (4) Difficulties in obtaining work permits
- (5) Non-payment of contractor claim.

2.6 EFFECTS OF DELAY ON CONSTRUCTION PROJECTS

Delays in construction have so many effects which have been studied by few academic researchers. These effects have undoubtable contributed negatively to the economy of the nation. It is worthy of note that if these effects are not properly tackled by any nation, it could drastically affect the Gross Domestic Products. Li et al. (2010) shows the effects as additional costs, decline in quality and rework, loss of productivity, late completion of the project, increased time related costs, third party claims, and termination of contract. Construction delays are frequently expensive since there is usually a construction loan involved, which charges interest, management staff dedicated to the project whose costs are time dependent and ongoing inflation in wage and material prices. In construction projects as well in other projects where a schedule I being used to plan work, delays happen all the time. It is what is being delayed that determines if a project or some other deadline such as a milestone will be completed late. Aibinu and Jagboro (2005) studied and evaluated the effects of construction delays on project delivery in the Nigerian construction industry. They discovered that the six effects of construction delay were: time overrun, cost overrun, dispute, arbitration, litigation, and total abandonment. Abdul-Rahman H. et al. (2006) in their study found that the delay effects were disruption of work, loss of productivity, late completion of the project, increased time related costs, third party claims and termination of contract. Claims reimbursement issues between owner and contractor are always tense due to the extra cost and time elongation associated with delays. Thus, delay could generate distrust and create tension between the contractor, owner, and the owner's project management team according to Aibinu (2009). Ahmed et al. (2002), stated that the delay has a debilitating effect on clients, contractors, and consultants in terms of growth in adversarial relationships,

mistrust, arbitration, cash flow problems, and a general feeling of trepidation towards each other.

Furthermore, Gene Wortham (2002), in his study on Construction delays noted some effects a construction delay could have on a nation. They include: - Acceleration, Schedule Change – Inefficiency, delayed project completion, Missed Intermediate completion dates, Liquidated Damages, Frustration – claims and Increased Costs. Morris (2005) in his research mentioned factors prompting cost overruns in construction projects. These factors are: -

- 1) Inadequate project preparation
- 2) Inadequate planning/scheduling and implementation
- 3) Delay in construction
- 4) Supply of raw material and equipment by contractor
- 5) Change in the scope of the project
- 6) Delay in decisions making by government or project owner
- 7) Unclear coordinating bodies
- 8) Inappropriate choice of site
- 9) Technical incompetence/unskilled project team
- 10) Poor organizational structure, labour unrest, natural calamities, restiveness, war and lack of experience of technical consultants.

2.7 MITIGATION STRATEGY

According to Beyond and Basic (2008), “Mitigation Strategy involves specific action, project, activity or process taken to reduce or eliminate long-term risk to people and property from hazards and their impacts. Implementing mitigation actions helps achieve the planed mission and goals. The actions to reduce vulnerability to threats and hazards form the core of the plan and are a key outcome of the planning process”. It also listed some primary types of mitigation actions to reduce long-term vulnerability. They include; Local plans and regulations, Structural Project, Natural systems protection, Education programs and Preparedness and response actions.

For every laid down mitigation strategy that is not yielding the required result, there is always room to update the strategy for better results. Beyond and Basic (2008) noted this point by stating that “one of the most important steps in updating mitigation strategy is to refine it, particularly in light of experiences gained from the implementation of the previous plan.” It further mentioned some steps involved in the mitigation strategy updating. They are;

Evaluate Progress in Implementation, Integration of Hazard Mitigation and Completion of Mitigation Actions,

Furthermore, MITRE Corporation Journals (2016) stated that in determining mitigation plans, some basic points that need to be understood and followed. They are; “Understand the users and their needs, seek out the experts and use them, recognise risks that recur, encourage risk taking, recognise opportunities,

and encourage deliberate consideration of mitigation options and not all risks require mitigation plans”. It also noted that a good mitigation plan content must determine the appropriate risk manager, develop a high-level mitigation strategy and identify actions and steps needed to implement the mitigation strategy.

2.7.1 EARNED VALUE MANAGEMENT

This is a systematic project management process used to find variances in projects based on the comparison of work performed and work planned. It is used on the costs and schedule control and can be very useful in project forecasting. An essential component of Earned Value Management is the project baseline, which serves as a reference point for all related activities. It integrates three key project performance criteria; Scope, Time and Cost (Anbari, 2003). Earned Value Management is grounded in the assumption that the project scope, master schedules and cost budgets are completely determined and fixed from the start. (Kim and Reinschmidt, 2009)

According to the EVNS Education Centre, Earned Value Management is more than a unique project management process or technique. Its objects are as follows:

- ❖ To relate time phased budgets to specific contract tasks and/or statements of work
- ❖ To provide the basis to capture work progress assessments against the baseline plan
- ❖ To relate technical, schedule and cost performance
- ❖ To provide valid, timely and auditable data/information for proactive project management analysis and action
- ❖ To supply managers with a partial level of summarising for effective decision making.

In addition, Earned Value Management has been proven to be a very effective mitigation strategy, strongly recommended for all Construction companies. It helps project managers to measure project performance as well as provides quantitative data for project decision making. It also an aid to both the Earned Value Management Contractors and customers. Its numerous advantages cannot be over emphasised, some of which include:

- ❖ It improves the planning process and fosters a clear definition of the work scope
- ❖ It establishes clear responsibility for work effort, integrates technical, schedule, cost performances, and provides early warning and analysis of potential Earned Value problems.
- ❖ It identifies problem areas for immediate and proactive management attention, and enables more accurate reporting of cost and schedule impacts of known problems.
- ❖ It enhances the ability to assess and integrate technical, schedule, cost, systems analysis, risk factors.
- ❖ It provides consistent and clear communication of progress at all management levels and improves project visibility and accountability. (EVMS Education Centre, 2016)

2.8 CONCLUSION

There are many studies about the impacts of delay in construction industry but there are few studies on construction delay in developing countries such as Nigeria. Researchers investigated different factors that impact on construction delay, from planning/scheduling to project execution. When considering delay in context of public construction project there are additional factors that may affect cause delay in construction project lack of stakeholder engagement, lack of skilled project team, inadequate communication process. Conclusively, Ballard and Howell (1998) argued that construction planners should make only “quality assignments” where the tasks are not meeting these criteria’s: Sufficiently well-defined are ready to start (material, design, and precedent works complete); have priority in the critical path for delivery to the customer; are commensurate in scale with the available labour for the coming week; and are carried out within a system where the causes of incomplete or poor quality assignments are investigated and identified, should be deferred. Monitoring gives early warning of the possibility of contractor’s delay and help in anticipating the consequences of changes that may be needed. This research tends to address this issues and add a fresh contribution to the scant literature that deals specifically with these questions.

CHAPTER THREE

RESEARCH METHODOLOGY

Methodology can be seen as the way knowledge is gained, how theories are generated and tested, and the relationship between theoretical perspectives and research problem (Blaikie, 1993). Research Methodology is the framework procedural by which a research is conducted. Maylor and Blackmon (2005) described research as a process of finding out information and investigating the unknown to solve a problem. It involves identifying a problem and understanding what information is relevant to address that problem, as well as getting the information and interpreting that information and its context. The purpose of Research Methodology is to assist the researcher in answering the research question by collecting relevant information about the research topic. There are many ways by which the researcher can carry out research, however the quality of the research depends largely on the method selected which suits the type of research.

Saunders, et al. (2009), proposed the use of Research Onion which researchers would rely upon to plan and develop the Research Methodology for their study. This comprises of research approach, strategies, philosophy, time horizon, and techniques such as data collection and data analysis. It further illustrates the research processes in form of layers of an onion. The onion is a metaphor for describing the layers of the research process. It will provide the necessary degree of structure for the research with suitable basis for testing the research hypothesis while achieving the research objectives. Below is the Research Onion.

Fig. 1: The Research Onion

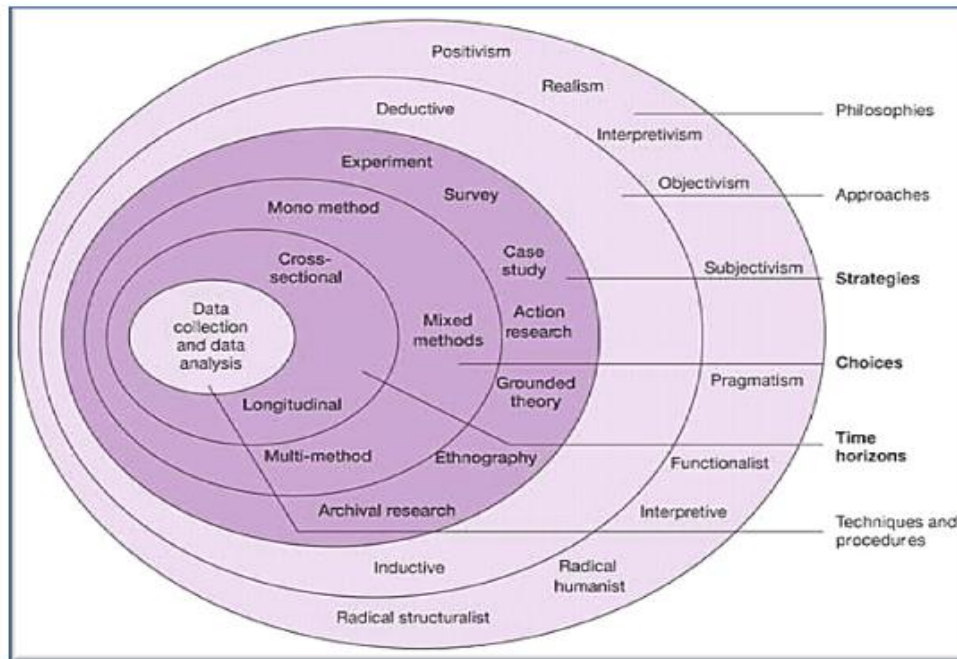


Figure 2: The research onion (Saunders et al., 2012)

The researcher intends to investigate into factors influencing delays and cost overruns on construction projects in Nigeria; developing a mitigation strategy. In order to carry out this research the researcher in this chapter would focus on outlining how the research will be conducted and results will be best obtained.

3.1 RESEARCH DESIGN

Research Design is the general plan on how the researcher will go about answering the research questions that have been set. It contains clear objectives derived from the research questions, specifying the sources from which the researcher intent to collect data. In this research work, the researcher will focus on the following Research Questions and Hypothesis below:

3.1.1 RESEARCH TOPIC

The topic of this research work is Factors Influencing Delays and Cost Overruns On Construction Projects in Nigeria; developing a Mitigation Strategy.

3.1.2 RESEARCH QUESTION AND HYPOTHESES

In response to the aim of this study, the researcher will focus on the following research questions:

- ❖ What are the major factors responsible for delays and subsequent desertion of construction projects in Nigeria? This question seeks to provide information on factors responsible for failures, delays and neglecting of construction projects and then drawing attention to the most compelling factor.
- ❖ What variables influence time and cost overruns in construction projects?
- ❖ What is the rate and influence of delay in construction project in Nigeria?
- ❖ What are the proposed solutions for project delays and failure in Nigeria Construction Industry?

The hypotheses that need to be proved or disapproved are as follows:

- ❖ **H1:** Delay and cost overrun has a great impact on the massive project failures in Nigeria.
- ❖ **H2:** Well-developed mitigation strategy could help minimise delay and failure in Construction Projects in Nigeria.

3.2 RESEARCH PHILOSOPHY

Research philosophy refers to a structure of theories and assumptions about the development of knowledge. In every research there are some assumptions made, which will shape how to understand the research questions and the methods used in the research. It also refers to the development of knowledge and the nature of that knowledge, which makes it the bedrock of any research. The core stands of Research Philosophy guides the researcher in making the right decisions about the approach, strategy, data collection techniques and procedures and how to answer the research questions. (Saunders et al. 2012) stated that “the research philosophy you adopt contains important assumptions about the way in which you view the world”. These assumptions will conclude the way the research will be conducted and the Methodology that will be used. Furthermore, Saunders (2016, p.135) proposed 7 approaches to Research Philosophy; they are Positivism, Realism, Objectivism, Subjectivism, Pragmatism, Functionalist and Interpretivism. There is no one Research philosophy that is better than another. The Research questions that the research seeks to answer will determine the Research philosophy to be used.

For The purpose and nature of this study the researcher has adapted to use Interpretivism as it’s believed to be the most appropriated for business and management

research. Interpretivism advocates that it is necessary for the researcher to understand differences between humans in the role as social actors (Saunders et al, 2012). Interpretivism can be defined as the recognition that subjective meaning plays a crucial role in the social actions. It highlights that humans are different from physical phenomena because they create meanings and their social worlds cannot be studied in the same way as physical phenomena, which gives emphasis on conducting research among people rather than objects. People with different cultures under different circumstances and at different times make different meanings and so create different social realities. Saunders et al (2009) advocates that an Interpretivist perspective is highly appropriate in the case of business and management research where the research is being conducted in the field to investigate the organizational behavior, marketing and human resource management. Therefore, Interpretivists are critical of the Positivist attempts to discover definite universal 'laws' that apply to everybody. (Saunders and Lewis, 2016, p.140) states that the main purposes of Interpretivism research is to create new richer understandings and interpretations of social world and contexts.

According Bryman and Bell (2015, p. 28), Interpretivism is the cognizing of individual activities. Saunders (2009, p.116) asserts that there is an interactive process between the researcher and the subject with the objective of finding out information pertaining to the subject and understanding the environment in which they operate in. Interpretative philosophy often works better with quantitative research which is most suitable for this research as it will give a better understanding of key factors influencing delays and cost overruns on construction projects in Nigeria; developing a mitigation strategy. Critical to the Interpretivism philosophy is that, it demands the researcher must take an empathetic stance in that you must view the world from the point of view of our research subject (Saunders, et al 2013).

3.3 RESEARCH APPROACH

There are two types of Research Approach that can be taken by the researcher; the Deductive (Testing Theory), Inductive Approach (Building Theory) and Abduction Approach (Fact Theory). The research approach may help the researcher to determine the design of the research, and then present the findings and the conclusion.

3.3.1 Deductive

Deductive Theory represents the commonest view of the nature of relationship between theory and research. "Deduction is a form of inference that purports to be conclusive

that is the conclusion must necessarily follow from the reason given” (Blumberg, et al 2011). Deduction is the leading research approach used in the natural sciences where theory is subjected to rigorous testing and verification. Deductive reasoning occurs when the conclusion is derived logically from a set of premises and is often criticized as the rigidity of the approach does not allow for flexibility in the interpretation of the results. Saunders (2009, pp. 124-128) describes the Deductive approach as the development of a hypothesis and the formulation of a research strategy to test the theory while the Inductive approach is the accumulation of data and development of a hypothesis from an examination of the data. Robson (2002) cited by Saunders et al, (2009) listed five sequential stages in the research process:

- ❖ Deducting hypothesis from the theory
- ❖ Expressing the hypothesis in operational terms
- ❖ Testing the operational hypothesis
- ❖ Examining the outcome of the enquiry
- ❖ Modifying theory in the light of findings

3.3.2 Inductive

Inductive theory is where the researcher infers the implications of his or his findings for the theory that prompted the whole exercise (Bryman & Bell 2011). Inductive research does not have the same strength of association between reasoning and conclusions. Inductive reasoning is where we assume something based on observations but the outcome is never tested or certain. With Inductive approach the researcher plays a much more active part in the research and takes the context in which the research was collected into account. This approach is more appropriate where a smaller sample of subjects may be used.

3.3.3 Abduction

Abduction theory is combination of both deduction and induction. Abduction moves from an observed fact and works out a theory to explain the fact. The abduction approach should be seen not as a longitudinal but as a more developed schema, indeed all along the research, researchers go back and forth between the theory and the data. They begin by observing a “surprising fact” and then make a possible theory to understand why and how does the phenomenon happen, then the data conduct them to another surprising fact... Abduction can be complemented by deduction or induction to add logic in the process.

The researcher suggests deductive approach suitable for this research, since this research involves accumulation of both secondary data such as journals and primary data through questionnaires and developing of a hypothesis from an examination of the data. According to (Saunders and Lewis, 2016) Quantitative Research Strategy is regarded as deductive. This form of approach usually occur when the researcher draws a conclusion from the logical set of premises.

3.4 RESEARCH STRATEGY

The Research Strategy is the approach used or followed by the researcher in answering the research question. It is usually based on clear objectives of the research in addition to relevant detailed literature review. (Bryman et al. 2011: 718) refers to Research Strategy as the “general orientation to the conduct of social research.” It is also thought of as the overall direction of research including the processes by which the research is conducted. According to Saunders et al. (2012), there are several strategies that can be used or followed when doing research, these include; Experiments, Surveys, Case study, Action research, Ethnography and Archival research. Choosing a suitable research design will help the researcher understand time limitations, dissertation management, and the successful dissertation delivery. Jankowicz (2000) stated that each strategy has its own advantages and disadvantages but the choice of a particular strategy is determined by the following;

- ❖ Nature and scope of topic of the dissertation
- ❖ Sources of data the researcher is using
- ❖ The Purpose of the researcher for gathering data
- ❖ Degree of assumption in analysing the data

Furthermore, Remenyi et al (2005), noted that Research Strategy is determined by four key issues which are, Research Questions, Cost or Budget available for the research, the Time available for the research and Skills of the researcher. He also highlighted that research question is the most important element in the research; it directs the type of strategy required for the research and do not leave much room for flexibility.

The researcher has adapts survey strategy. Survey strategy is associated with the deductive approach it is the most common strategy in business and management research. Survey allowed researcher to respond to the questions “what”, “who”, “where”, “how much” and “how many”. It helped to explore and describe a phenomenon using statistic and evaluate relationship between variables. This would provide an explanation to the challenges faced in

completing the immediate project. The challenge for a questionnaire is to ensure a correct response rate and that the sample is representative of the population.

3.5 RESEARCH CHOICE

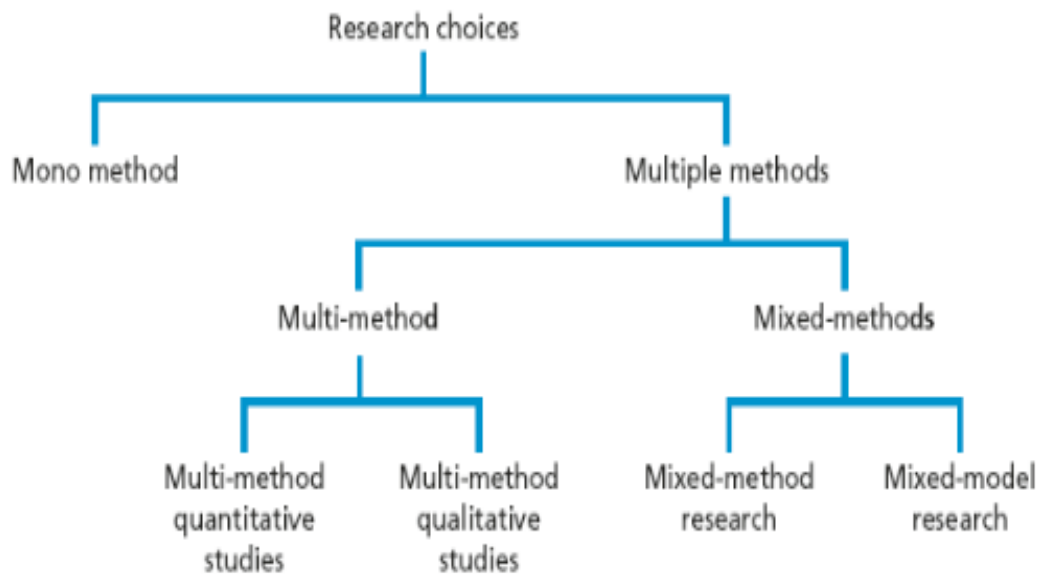
Saunders et al. (2009) suggests that quantitative and qualitative research choices are widely used in business and management research to differentiate both data collection techniques and data analysis procedures. Selecting a qualitative, a quantitative or a mixed methods research design is an important part which will allow researchers to make the research more concrete selecting the tool to use. Saunders et al (2011) identified Research Choice as the use of Quantitative (numerical) and Qualitative (non-numerical) techniques to conduct research. In conducting research, the researcher has a choice between using a mono method, mixed method or multi-method to answer the research question.

- ❖ Mono Method – use of one data collection technique
- ❖ Multiple methods – use of more than one data collection technique
- ❖ Mixed methods – A multiple method which uses both qualitative and quantitative technique and analysis procedures.

In this research, a mono method for data collection and analysis techniques is applied. According to Saunders et al. (2009) Mono method uses a single data collection techniques and corresponding analyzing procedure. The researcher chose use of quantitative data collection as well as statistics analysis to test hypothesis to answers the research questions. Researcher is aware of the limitations of using a quantitative approach as there is minimal interpretation in comparison to qualitative research. It can be argued however, that all data collection and analyses include some form of interpretation (Warfield 2010). The researcher suggests that as there is no one to one contact with participants in the field, the element of interpretation is solely of statistical data and not opinion expressed by those participating in the study. The researcher believes that using a structured methodology with deductive reasoning will provide rigorous and reliable data that is perceived valid.

Thus questionnaires will be used to seek quantitative data from the research population below is a diagram of Research Choice;

Fig. 2: Research Choice



Source: Saunders et al (2011)

3.6 DATA COLLECTION

In this section, the type of data collected to answer the Research question must be specified. Generally, a researcher can use primary, secondary, or a combination of both. According to Saunders et al. (2009), most Research questions are answered through a combination of primary and secondary data. In order to answer the research question and meet the objectives of this study, the researcher will use both primary and secondary data accordingly.

3.6.1 PRIMARY DATA COLLECTION

Primary source of data is considered as the original source of research without any interpretations and declarations representing an official opinion (Cooper and Schindler, 2003). A self-structured questionnaire asking about the Factors Influencing Delays and Cost Overruns On Construction Projects in Nigeria; developing a Mitigation Strategy. Questionnaires will be used for collecting quantitative data by asking predetermined questions and analyzing the data.

3.6.2 SECONDARY DATA COLLECTION

The researcher will gather data from journal/articles, textbooks and published papers that are relevant to the topic of research to formulate concepts and develop research questions and hypothesis. Saunders (2009, p. 272) states that the researcher needs to examine and analyze the secondary data carefully to ensure it relates to the research objectives. During this research researcher based her researches particularly online to gain access to different e-books, academic literature, reports. The first e-library used was the one from Dublin Business School, and then to extend the research she used the tools 'MyAthens' to have access to other databases particularly 'Emerald'. Then, the e-book collection of 'Google Books' was a huge help to gain free access to books used in the development of the research. Academic articles and report were more used to collect information on the research topic and to develop the literature review. Previous dissertation sample books will also contribute in the knowledge of the researcher about the structure and the subject.

3.7 EDITING

Editing is the first phase of data analysis where the researcher certifies that the data collected is precise, reliable and pertains to the objective of the questions asked in the data collection instruments (Cooper and Schindler 2003, p.455). Zikmund (2003, pp. 453-457) contends that editing is utilised to verify and modify data, preclude errors, omissions, progress clarity and consistency to enable the data to be transferred to data storage for the purpose of data coding and analysis. Bajpai (2011, pp. 194-195) affirms that attentive editing of the questionnaire can allow the researcher identify and adjust obscured, inconsistent and incomplete answers from the respondents. The researcher will check for clear, consistent and complete responses to simplify the coding and analysis process (Zikmund,2003,pp.453-457).

3.8 CODING AND ANALYSIS

Collis and Hussey (2014, p.155) recommends integrating topics and concepts from the research with the objective of formulating new adjusted patterns of thoughts in the data which can be linked to develop theory. Collis (2014, p. 162) proposes assigning codes to various words, headings and paragraphs for the purpose of grouping the data into categories to allow the researcher to align patterns, themes and correlations between the data to support the research analysis and further data collection. Saunders (2009, pp. 492-493) argues that the categories formulated need to have a logical structure as codes will be generated to

interpret and denote emergent investigative connections between data. The researcher plans to apply Descriptive Coding to record and catalogue differences of opinions and Values Coding to encapsulate and categorize subjective perceptions of the participants (Saldena, 2013, pp. 1-8).

3.9 TIME HORIZON

Saunders et al. (2009) states that there are two predominant types of time horizon which are; Cross Sectional (Snapshot time horizon) and Longitudinal (Diary perspective) study. If the research is done as a ‘Snapshot’ taken at a particular time, then its called Cross Sectional research. In contrast, Longitudinal research is conducted as an event over a given period of time by maintaining a diary of events during the research. Brief explanations on time horizons are given below.

Cross Sectional Study

This is the study of an issue at a particular time and can be used to explain the relationship between two sets of data at that moment. This research method is usually carried out once and essentially represents a snapshot of particular event at a particular point in time, (Sanders et al 2007). An example of this might be how many employees have a specific skillset at a moment in time or how many customers bought a particular product on a certain date.

Longitudinal Study

In contrast to Cross sectional study, Longitudinal study is developed over a period of time. The main strength of this type of research is that it has capacity to study change and development (Saunders et al, 2007). Bryman and Bell (2007) highlighted that this type of research is useful in providing data on processes and mechanisms in organizations through which change is created. However, partly because of the time and cost involved, longitudinal design is relatively little used in business and management research. The researcher will choose the Cross Sectional study because of limited time and data collection for the research work.

3.10 POPULATION AND SAMPLE

Sampling is the selection of a relatively small number of individuals from whom the researcher obtains data in order to be able to generalize about a larger group. Sampling techniques are relevant in research work especially where it is not possible to survey the entire population due to time constraints or limited resources (Bryman and Bell, 2007). According to Saunders, Population refers to the full set of elements or cases from which a sample is taken for investigation. The basic idea is that the researcher selects some elements in a population by which he can draw conclusions about the entire population. The most important question in relation to population sampling is ‘what size sample does the research need?’ The answer is influenced by various factors which include;

- ❖ Impractical to survey entire population
- ❖ Budget constraints
- ❖ Resource constraints
- ❖ Time constraints

Henry (1990, cited by Saunders et al, 2007) mentioned that using sampling can make it possible to achieve higher overall accuracy than entire population. This is because the smaller number of cases means that more time can be spent designing and piloting the means of collecting data. Collection of data from fewer cases also means that the collected information is more detailed or accurate. However, Fowler (2002) highlights that there could be sampling errors as a result of variation between the data collected from samples and the true value from the population as a whole.

The sampling method being used by the researcher is purposive or subjective sampling which encompasses expert sampling. This sampling method relies on the judgement of the researcher when selecting the units or population to be studied. The rationale for the suitability of the respondents chosen for the qualitative research is to allow the researcher link the initial research questions, objectives and hypothesis into the conclusion and findings.

3.11 ETHICAL ISSUES

Ethics are described as the appropriateness of the researcher behaviour in relation to the rights of those who become the subject of the research (Saunders et al, 2007). “Absolutely central to research integrity is ethics.... As a researcher, you have an explicit and fundamental responsibility towards the researched” (O’Leary, 2010, p.40). Issues which can

affect this research is the maintenance of privacy as well as confidentiality of the data provided by the participants and protecting the participants' anonymity, consent and providing the complete details of the research objectives if asked for by the participant.

The researcher will consult with the supervisor to guarantee compliance with the college ethical guidelines for running surveys. When selecting a research population, the researcher will present a transparent explanation of the requirements to the respondents via email. The aim of this exercise is to establish credibility with the potential participants (Saunders, 2009, p.179). The researcher will also ensure that confidentiality and integrity of participants who wish to remain anonymous will remain intact at all times. The data will be securely stored at all times and will be only accessible to myself and my supervisor. He will ensure that all participants have given their full consent prior to distributing the questionnaires and also be mindful of leading questions and generalizations (Bryman and Bell, 2011). The research will display appropriate behavior and respect at all times and be sensitive to any concerns that the participants may have throughout the data collection process (Zikmund, 2003, pp. 78-86).

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

This chapter outlines the Data Analysis and reports on significant findings. It illustrates the findings on the quantitative research carried out according to the research methodologies in chapter three. The Data Analysis considers the data collected from both sources – primary and secondary data sources. The Secondary data source, i.e. literature review is already illustrated in chapter 2. This secondary research data is referred in conjunction with the primary sources of data collected to report on the research findings. The data gathered is interpreted, cross tabulated and analyzed in order to meet the research objectives.

4.1 QUANTITATIVE RESEARCH METHOD

The Quantitative Research Method employed for this research was the use of questionnaires which was distributed to Project Managers, Architects, Civil Engineers and Contractors from two different construction companies in Nigeria. Quantitative data need to be well processed, analyzed and turned into information before it can make useful meaning to people. Some analysis techniques like graphs and charts allow the exploring, presenting, describing and examining relationships and trends within data.

4.2 STRUCTURE OF DATA ANALYSIS

This involves the analysis of data collected in this research work. This will be done using tables, percentage and charts were necessary. The questions in the questionnaire and the data collected are all of equal and great importance and well analyzed, some are tabulated for retrieving necessary information in order to achieve the objectives. All the findings are focused on the research objectives and research questions as stated in the methodology. In analyzing these data, both the primary and secondary data gotten are linked for better understanding and determining of the research question and objectives.

The questionnaires distributed were designed to find out the factors influencing delays and cost overruns on construction projects in Nigeria and developing a mitigation strategy. The questionnaire is divided into three sections; first is the demography while the other two are the main body of the questionnaire. Each question contains different number of items to measure the factors influencing delays and cost overruns on construction projects in Nigeria and developing a mitigation strategy. As already noted in the Methodology, the total number of 100 questionnaires were distributed via online to two different construction companies, targeting the Project Managers, Civil Engineers, Architects and Contractors. At the end of the survey 95 questionnaires were recovered as against 100 that was distributed.

4.3 DEMOGRAPHIC DATA AND INTERPRETATION

The demographic data contains the Gender, Age, Nationality, Job description, years of experience in Construction Industry, etc. These information was contained in the section A of the questionnaire and are adequately and graphically analyzed below.

Question 1: Gender of the Respondents

The frequency table below shows the gender distribution of the respondents. This comprises both construction companies.

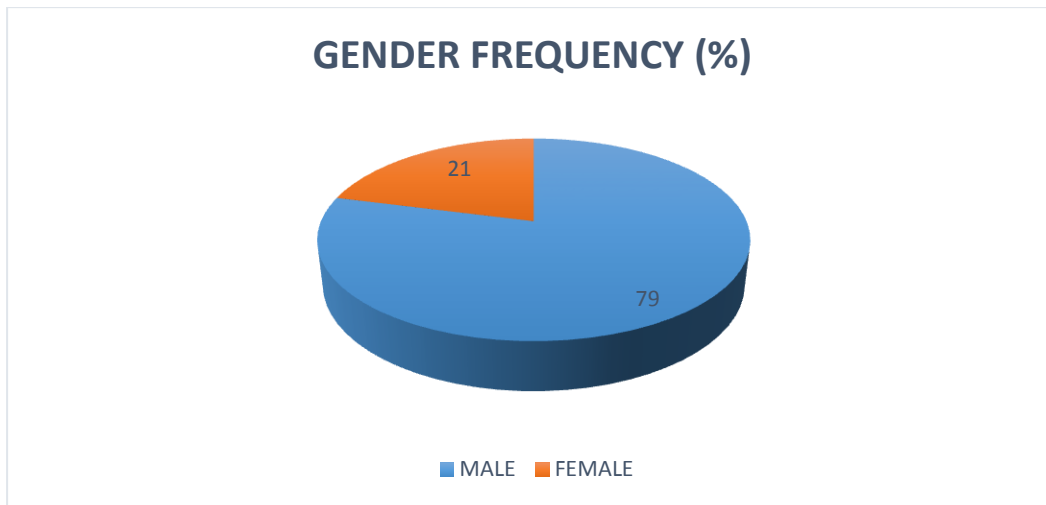
Table 1: Gender Distribution of Respondents

GENDER	FREQUENCY	PERCENTAGE (%)
MALE	75	79.0
FEMALE	20	21.0
TOTOL	95	100

Source: Field Survey, 2016

The above table represents the gender distribution of the respondents which shows that 79.0% are Male and 21.0% are Females. This implies that although the Nigeria Construction Industry attracts more men than women, both companies have favorable policy towards women employment. The above table is represented on a Pie Chart below.

Fig. 3: Pie Chart showing Gender Distribution of Respondents



Source: Field Survey, 2016

Question 2: The Age Range of Respondents

The frequency table below shows the age range of respondents. This comprises both construction companies.

Table 2: The Age Range of Respondents

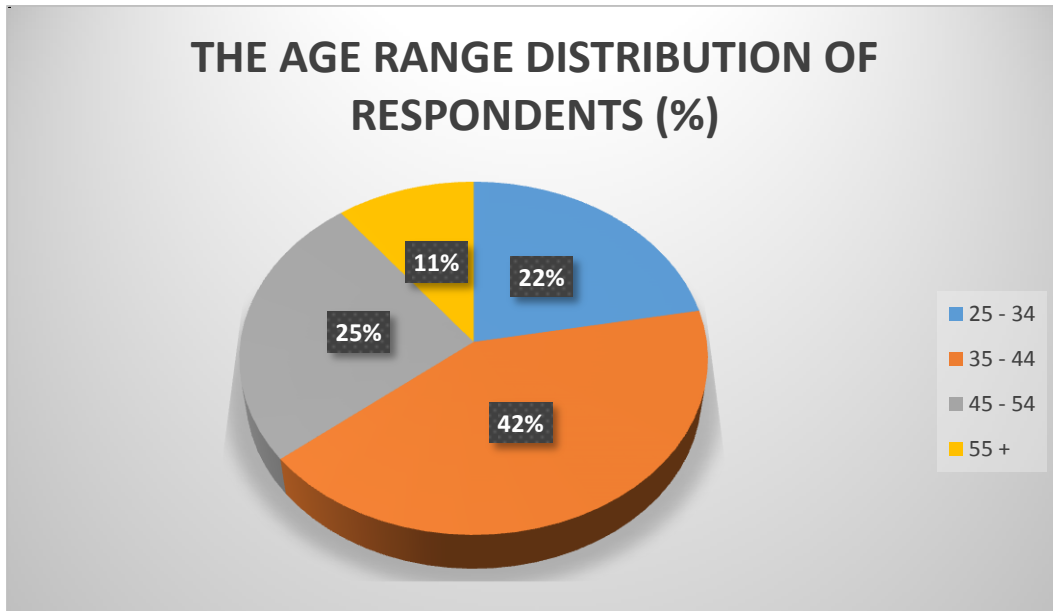
AGE RANGE	FREQUENCY	PERCENTAGE (%)
18 - 24	0	0
25 – 34	21	22.1
35 - 44	40	42.1
45 - 54	24	25.3
55 +	10	10.5
TOTAL	95	100.0

Source: Field Survey, 2016

From the above survey results, 22.1% of respondents' falls within the age range of 25 – 34, 42.1% falls within the age range of 35 – 44, 25.3% falls within the age range of 45 – 54, while 10.5% falls within the age range of 55+. This shows that workers between 35 – 44 are the most frequent which can be said to be the apex of working age. No respondent fell within the age range of 18 – 24, which could mean that the companies policies accommodates more

matured and capable workers due to the nature of the job. The above table is represented in a Pie Chart below.

Fig 4: Pie Chart Showing the Age Range distribution of Respondents



Source: Field Survey, 2016

Question 3: Nationality of Respondents

The frequency table below shows the nationality of respondents. This comprises both construction companies.

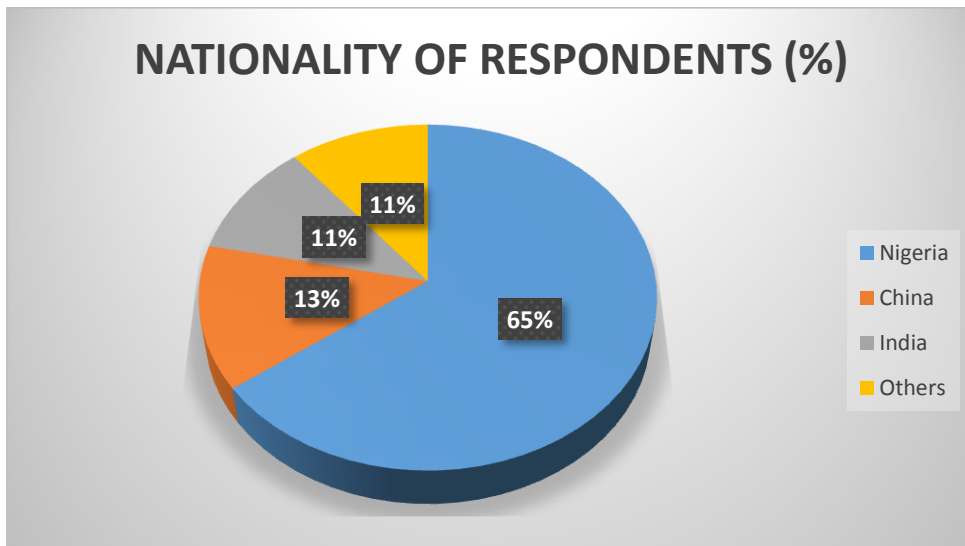
Table 3: The Nationality of Respondents

NATIONALITY	FREQUENCY	PERCENTAGE (%)
NIGERIA	63	65.0
CHINA	12	13.0
INDIA	10	11.0
OTHERS	10	11.0
TOTAL	95	100

Source: Field Survey, 2016

According to the survey result, it could be seen that a greater number of respondents are Nigerians with the highest percentage of 65.0%. This is followed by China which has respondent percentage of 13.0%, while India has same respondent percentage with Others which is 11.0%. Others here implies nationalities that was not stated among the country of Nationality provided. This data is represented in a Pie Chart below.

Fig 5: Pie Chart Showing the Nationality of Respondents



Source: Field Survey, 2016

Question 4: The Job description of Respondents

The frequency table below shows the job description of respondents. This comprises both construction companies.

Table 4: The Job Description of Respondents

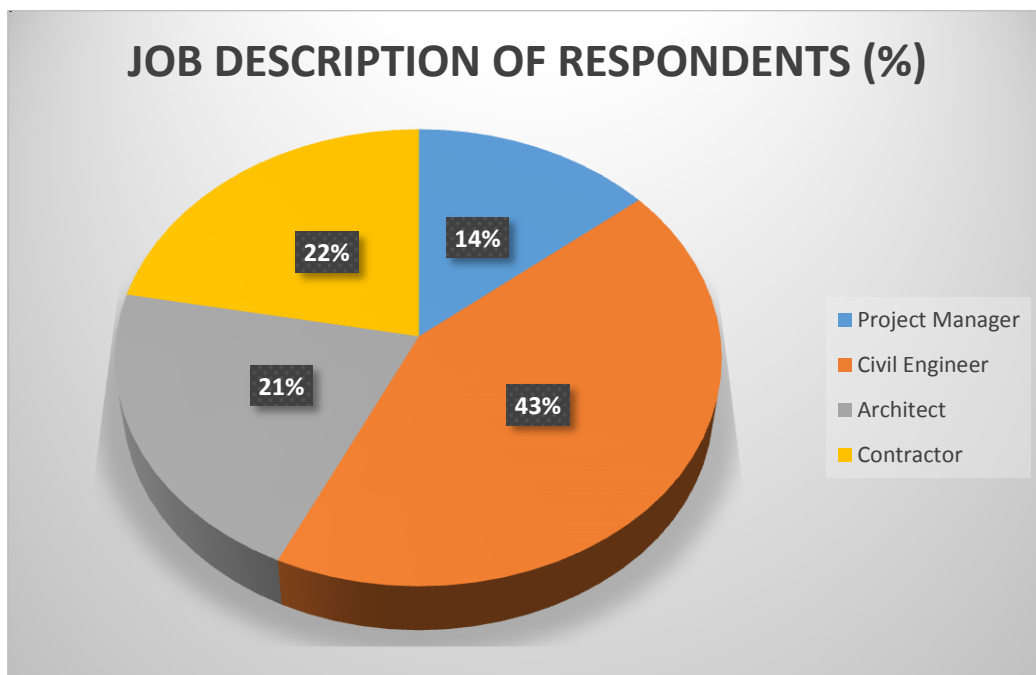
JOB DESCRIPTION	FREQUENCY	PERCENTAGE (%)
PROJECT MANAGER	13	14.0
CIVIL ENGINEER	41	43.0
ARCHITECT	20	21.0
CONTRACTOR	21	22.0

TOTAL	95	100
--------------	-----------	------------

Source: Field Survey, 2016

From the above table, it is evident that the highest job description is Civil Engineer with a percentage of 43.0%. This simple means that they are like the key persons in every construction industry. The Contractors have a percentage of 22.0% which is followed closely by Architects, whose population percentage is 21.0%. The lowest of them all are the Project Managers which has a percentage of 14.0%. This could mean that project management has not be fully accepted in Nigeria Construction Industries. The above table is represented in a Pie Chart below.

Fig 6: Pie Chart showing Job Description of Respondents



Source: Field Survey, 2016

Question 5: Years of Experience in Construction Industry

The frequency table below shows the years of experience in Construction Industry of the respondents. This comprises both construction companies.

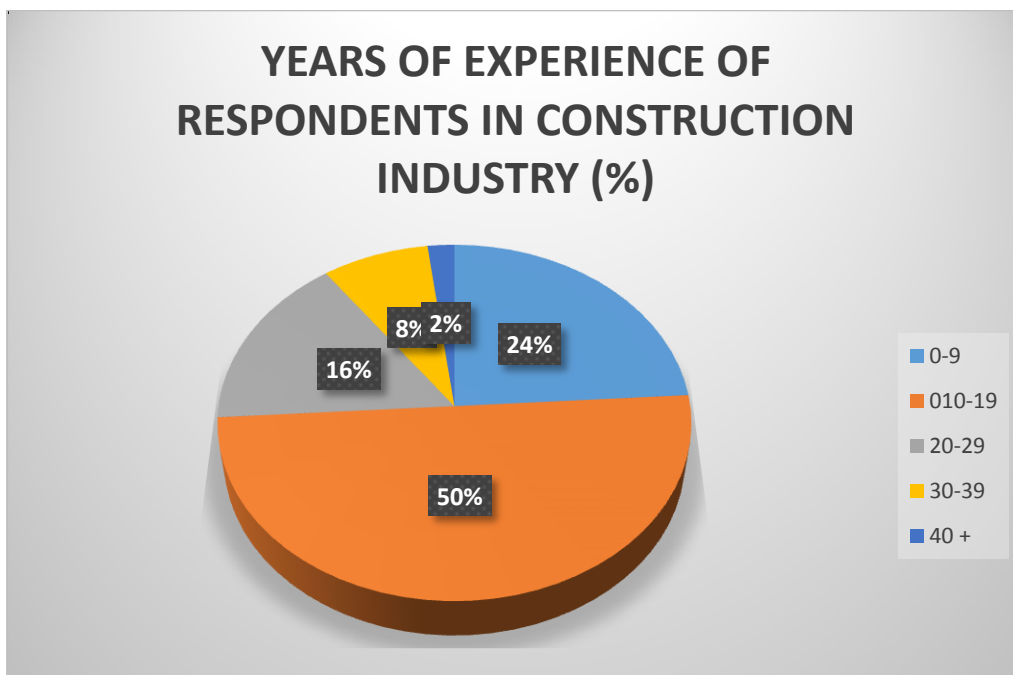
Table 5: The Years of Experience in Construction Industry

YEARS OF EXPERIENCE	FREQUENCY	PERCENTAGE (%)
0 - 9	23	24.0
10 – 19	47	50.0
20 – 29	15	16.0
30 – 39	8	8.0
40 +	2	2.0
TOTAL	95	100

Source: Field Survey 2016

From the above table, out of 95 respondents, 50% of the population are between the group of 10 – 19 years, this is followed by 24% which falls within the group of 0 – 9 years and 16% which falls within the group of 20 – 29 years. The group of 30 – 39 years has about 8% while the least is the group of 40 + years, which has just 2%. This information is represented in a Pie Chart below.

Fig. 7: Pie Chart showing the Years of Experience of Respondents



Source: Field Survey, 2016

Question 6: Have you managed a Construction Project before

The frequency table below shows if the respondents have managed a Construction Project before. This comprises both construction companies.

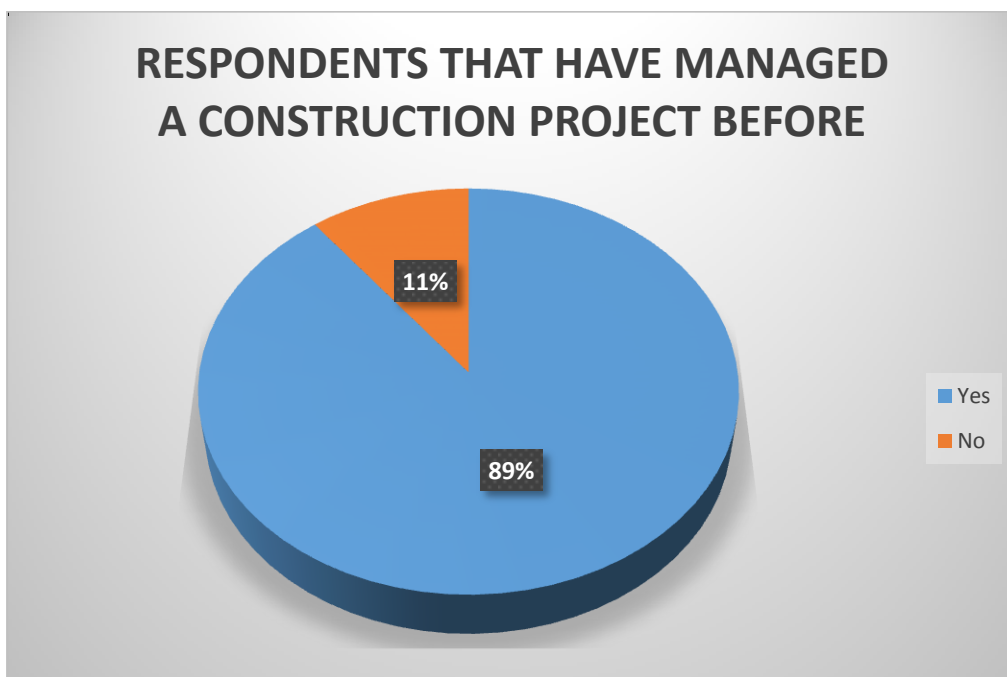
Table 6: Responses on if the respondents have managed a Construction Project before

RESPONSE	FREQUENCY	PERCENTAGE (%)
YES	85	89.47
NO	10	10.53
TOTAL	95	100

Source: Field Survey, 2016

According to the above table, a good number of respondents have managed a Construction Project before with a percentage of 89.47% while about 10.53% have not managed a Construction project before. This reveals that a greater percentage of the respondents are well experienced in the Construction Industry, which is an advantage to this research work. This data is represented in a Pie Chart below.

Fig 8: Pie Chart Showing the number of respondents that has managed Construction Project before and those that have not



Source: Field Survey, 2016

4.4 DATA FINDINGS AND INTERPRETATION

This comprises of data gathered from section B and C of the questionnaire which was distributed to two Construction Companies. This answers basically focuses on answering the research questions and throwing more light on the research objective. By adequately analyzing this findings, the aim of this research work will be achieved.

4.4.1 PRESENTATION ACCORDING TO RESEARCH OBJECTIVES

- ❖ Research Objective 1: To evaluate the rate and effect of delay and cost overrun in completion of construction projects in Nigeria.

This objective seeks to provide information on factors responsible for failures, delays and neglecting of Construction Projects and then drawing attention to the most compelling factor which happens to be the Project team involvement in decision making and poor management functions. To achieve this, nine variables will be analyzed for appropriate result.

Question 7: How would you rate the competency of Contractors in Nigeria

This question intends to find out the competency rate of Nigerian Contractors with regards to Construction Projects.

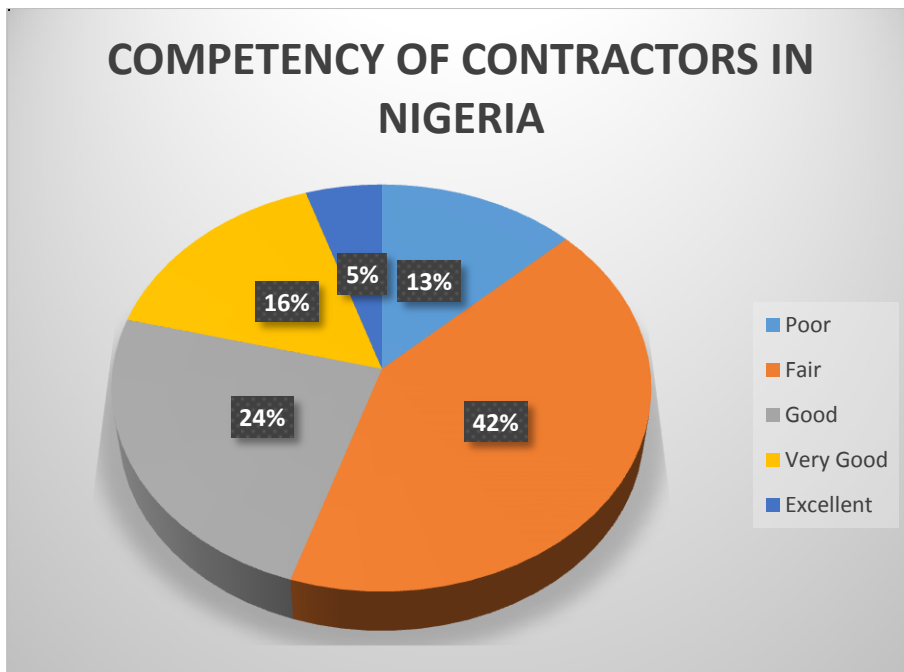
Table 7: Response on competency rate of Contractors in Nigeria

OPTION	FREQUENCY	PERCENTAGE (%)
Poor	12	13.0
Fair	40	42.0
Good	23	24.0
Very Good	15	16.0
Excellent	5	5.0
TOTAL	95	100

Source: Field Survey, 2016

According to the survey result, 42% of the total respondents are of the opinion that the competency of Nigerian Contractors is Fair, 24% believes it is Good, 16% also believes its very good while 13% believes that it is poor. The least population are of the opinion that Nigeria Contractors are Excellent. This analysis leads to the conclusion that Nigeria Contractors are not yet where they ought to be in terms of skills and knowledge. This information is show on a Pie Chart below.

Fig 9: Pie Chart showing the competency of Contractors in Nigeria



Source: Field Survey, 2016

Question 8: What is the experience level of Nigeria Contractors compared to

Construction Project assigned to them?

The above question intends to find out the experience level of Nigeria Contractors with regards to Construction Projects.

Table 8: The Experience level of Nigeria Contractors compared to Construction

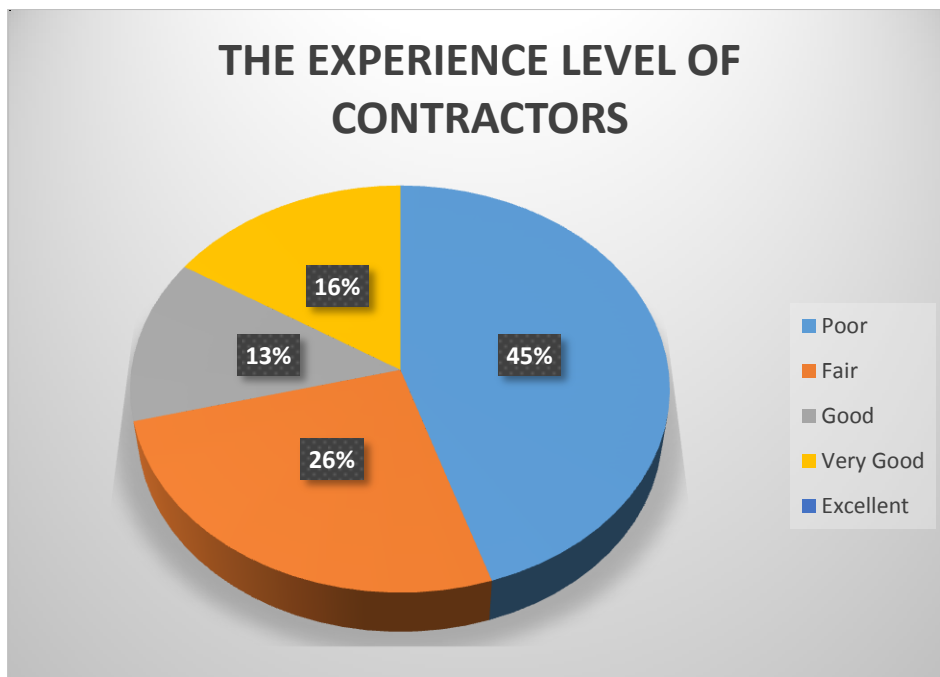
Project assigned to them

OPTION	FREQUENCY	PERCENTAGE (%)
Poor	43	45.0
Fair	25	26.0
Good	12	13.0
Very Good	15	16.0
Excellent	0	0
TOTAL	95	100

Source: Field Survey, 2016

From the above table, it could be seen that about 45% believes that the experience level of Contractors compared to the Construction Project assigned to them is quite poor. 26% of them are of the opinion that the experience level of Contractors is Fair while 16% believes the experience level is very good. The least percentage of 13% are of the opinion that Contractors experience compared to Constructions Projects assigned to them is Good. From this analysis, the researcher could conclude that Contractors in Nigeria are chosen out of corrupt practices within the government and Construction Industry and any contractor with little or no experience could be of harm to the project delivery. This information is shown in a Pie Chart below.

Fig 10: Pie Chart showing the Experience Level of Contractors compared to the project assigned to them.



Source: Field Survey, 2016

Question 9: What is the level of delay frequency in every 20 Construction Projects

Execution in Nigeria.

This question intends to find out the delay frequency in every 20 Construction Project execution in Nigeria

Table 9: The Delay Frequency in every 20 Construction Projects Execution in Nigeria.

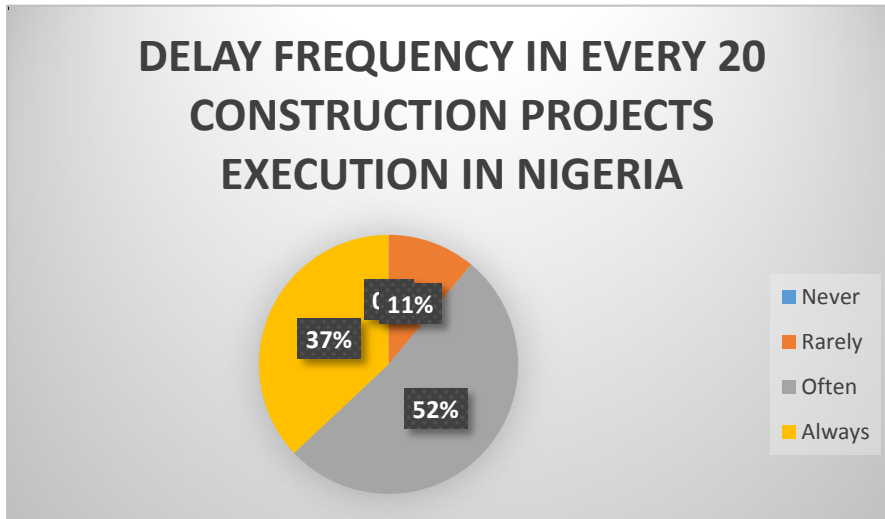
OPTION	FREQUENCY	PERCENTAGE (%)
Never	0	0
Rarely	10	11.0
Often	50	52.0
Always	35	37.0
TOTAL	95	100

Source: Field Survey, 2016

According to the above results, about 52% of every Construction Project executed in Nigeria is often delayed due to one reason or the other. 37% are always delayed while 11% is rarely delayed. To sum it up, 89% of every 20 Construction Project executed in Nigeria undergo delay challenges while 11% are under probability. This shows that the rate of delay

in Nigeria Construction Projects is very high. This information is shown on a Pie Chart below.

Fig. 11: Pie Chart showing the Delay Frequency on every 20 Construction Projects Execution in Nigeria.



Source: Field Survey, 2016

Question 10: What is the level of delay frequency on Project execution in Nigeria

This intends to find out the normal delay frequency on project execution in Nigeria.

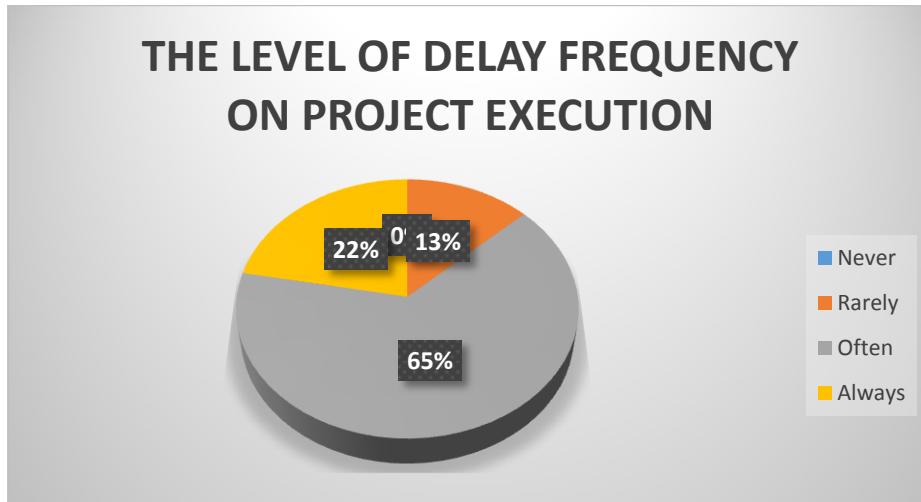
Table 10: The level of Delay Frequency on Project Execution in Nigeria

OPTION	FRQUENCY	PERCENTAGE (%)
Never	0	0
Rarely	12	13.0
Often	62	65.0
Always	21	22.0
TOTAL	95	100

Source: Field Survey, 2016

The above table draws supports from the previous ones. It shows that about 65% of the respondents are of the opinion that projects execution phrases are often delayed in Nigeria. 22% of the respondents believe that there is always delay at the project execution level while 13% believe that projects are rarely delayed that the execution stage. This information is represented on a Pie Chart below.

Fig 12: Pie Chart showing the level of delay frequency on Project execution



Source: Field Survey, 2016

Question 11: What is the level of delay frequency on Project closing time in Nigeria

The above question intends to find out the delay frequency on Project closing time in Nigeria.

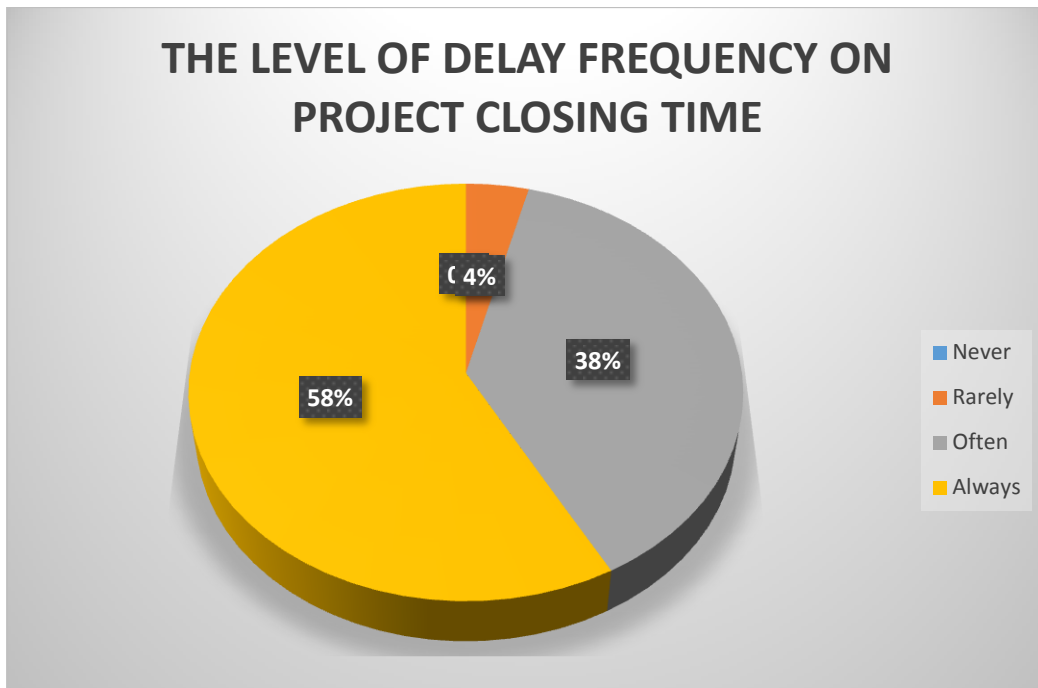
Table 11: The level of delay frequency on Project closing time in Nigeria.

OPTION	FREQUENCY	PERCENTAGE (%)
Never	0	0
Rarely	4	4.0
Often	36	38.0
Always	55	58.0
TOTAL	95	100

Source: Field Survey, 2016

From the above the table, 58% of Construction Project at closure in Nigeria are always delayed, 38% are often delayed while 4% are rarely delayed. This equally means that 96% of Construction projects at closure in Nigeria are delayed while a fraction of 4% is under probability. This information is represented in a Pie Chart below.

Fig 13: Pie Chart showing the level of delay frequency on Project closing time in Nigeria



Source: Field Survey

❖ **Research Objective 2: To identify the factors that lead to project delays**

The aim of this objective is to identify those factors that lead to project delays in Nigeria. It will also take note of the root events that could produce delay. In order to achieve this, six variables will be analyzed to get appropriate results.

Question 12: Does Project scope creeps have influence on Nigeria Construction delay?

The above question intends to find out if project scope creep has influence on Nigeria construction delay.

Table 12: Responses on if Project Scope creep has influence on Construction Delay

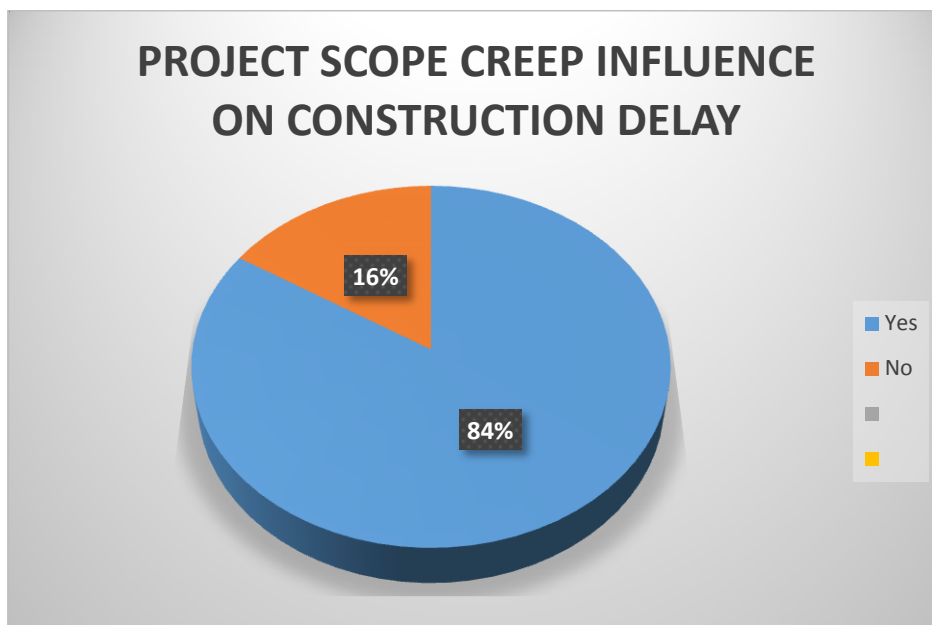
OPTION	FREQUENCY	PERCENTAGE (%)
--------	-----------	----------------

Yes	80	84.0
No	15	16.0
TOTAL	95	100

Source: Field Survey, 2016

According to the survey result, 84% of the respondents are of the opinion that scope creep highly influences Nigeria Construction delay. While 16% are of the opinion that it does not. It is important to note that project creep could have positive or negative effect on a project, but in most cases it means added costs and possible project delay. This information is represented in a Pie Chart below.

Fig. 14: Pie Chart showing Project Scope creep influence on Construction Delay



Source: Field Survey, 2016

Question 13: Does delay have great impact on the massive project failures in Nigeria?

The above question intends to find out the impact of delay on massive project failures in Nigeria.

Table 13: Responses on if delay has great impact on the massive project failures in Nigeria

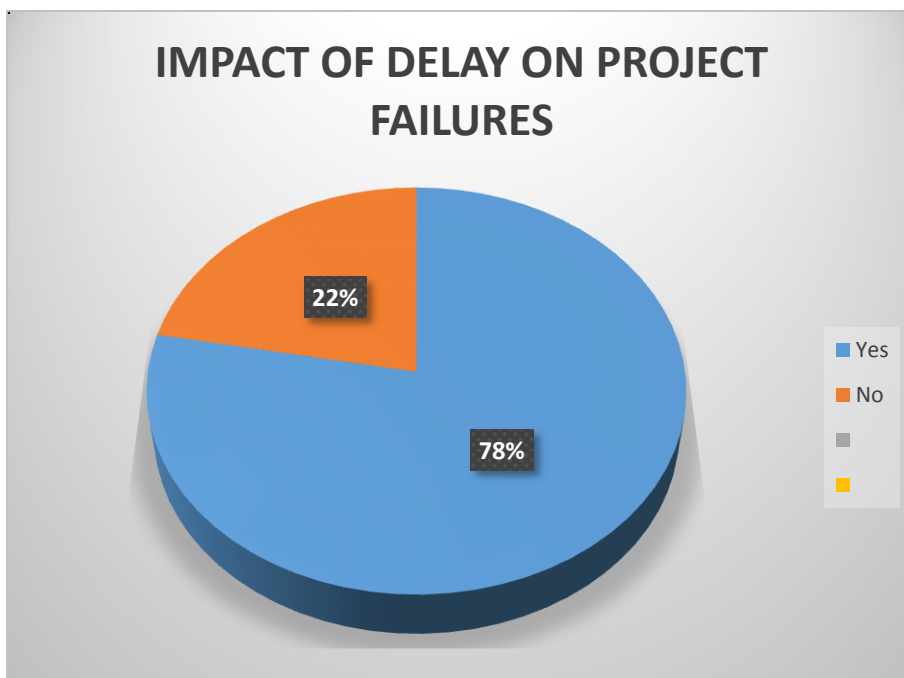
OPTION	FREQUENCY	PERCENTAGE (%)
Yes	74	78

No	21	22
TOTAL	95	100

Source: Field Survey, 2016

According to the survey result, 78% of the respondents attested that delay has good impact on the massive failures, experienced in the construction industry. 22% are of the opinion that delay does not contribute to the massive construction project failures in Nigeria. This analysis is an indication that one of the major impacts on project failures in Nigeria delay. This information is represented on a Pie Chart below.

Fig. 15: Pie Chart showing the impact of delay on Project Failures



Source: Field Survey, 2016

Question 14: Delay is believed to lead to many negative effects such as disputes between clients and contractors.

The above question intends to find out if delay contributes to disputes between clients and contractors in Nigeria.

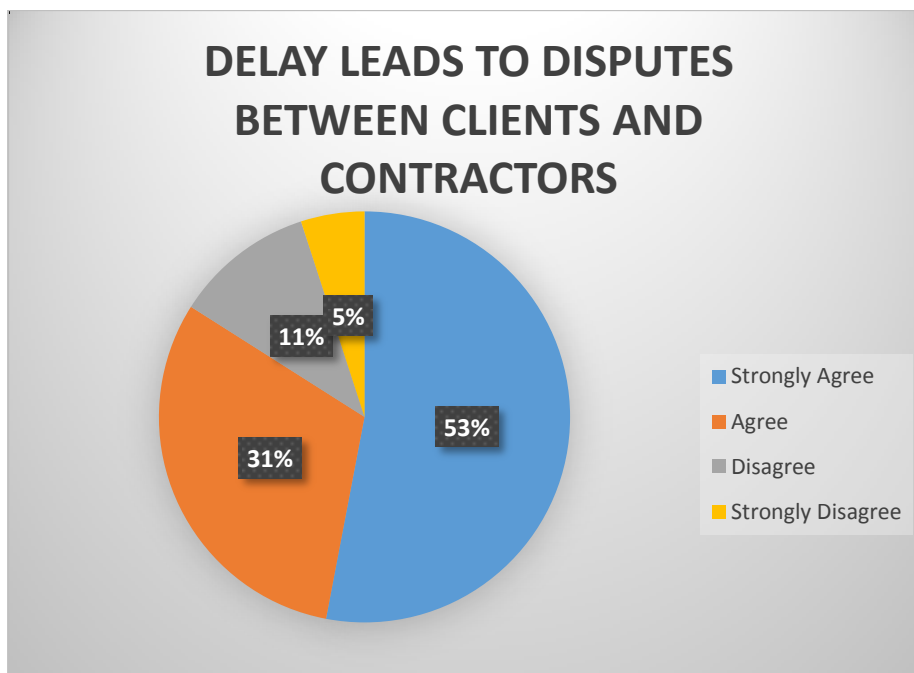
Table 14: Responses on if delay leads to many negative effects such as disputes between Clients and Contractors.

OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	50	53.0
Agree	30	31.0
Disagree	10	11.0
Strongly Disagree	5	5.0
TOTAL	95	100

Source: Field Survey, 2016

From the above survey results, 53% respondents strongly agree that delay leads to dispute between Clients and Contractors. This is followed by 31% who just agrees with same fact. About 11% disagrees with the fact that delay leads to dispute between Clients and Contractors, while 5% strongly disagrees. This shows that delay is a major negative effect that leads to disputes between Client and Contractors. This information is shown on a Pie Chart below.

Fig. 16: Pie Chart showing that delay leads to disputes between Clients and Contractors.



Source: Field Survey, 2016

Question 15: Delay is believed to cause Increase in Costs, Loss of Productivity and Revenue.

The above question intends to find out if increase in costs, loss of productivity and revenue are caused by delay.

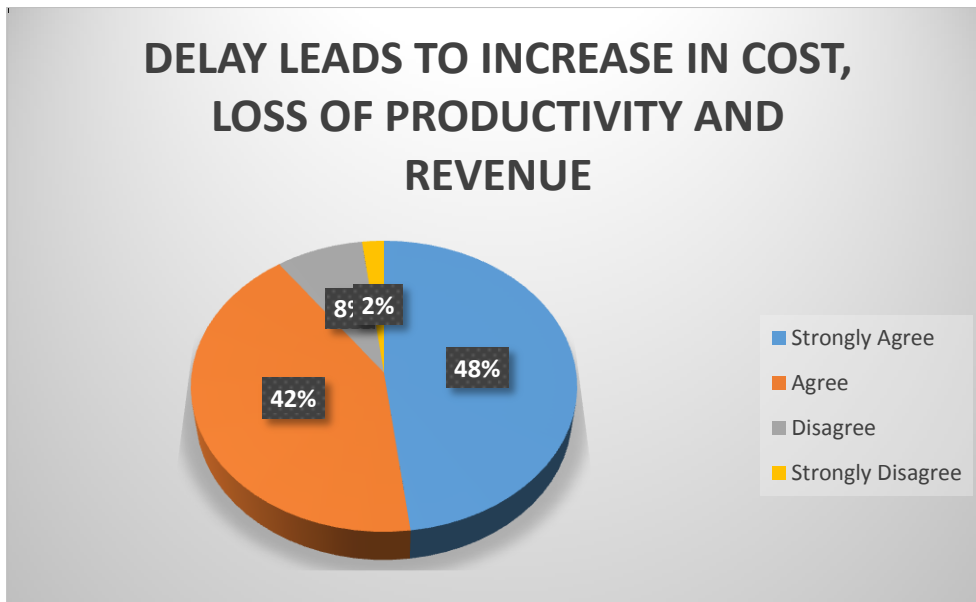
Table 15: Responses on delay is believed to cause Increase in Cost, Loss of Productivity and Revenue.

OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	45	48.0
Agree	40	42.0
Disagree	8	8.0
Strongly Disagree	2	2.0
TOTAL	95	100

Source: Field Survey, 2016

This figure supports the previous survey result. About 48% strongly agree that delay causes increase in cost, loss of productivity and revenue flow, 42% agree to same fact, while 8% disagrees and 2% strongly disagrees to this fact. This equals that about 90% of the respondents believe that delay leads to increase in cost, loss of productivity and revenue. This is an indication that one of the impacts of delay on Construction is Cost overrun and loss of productivity and revenue. This information is shown of a Pie Chart.

Fig. 17: Pie Chart showing delay leads to Increase in Cost, Loss of Productivity and Revenue



Source: Field Survey, 2016

Question 16: Communication barrier is one of the major factors in the cause of Nigeria Construction delay.

The above question intends to confirm that communication barrier is one of the major factors that leads to delay in Nigeria construction.

Table 16: Responses on Communication barrier is one of the major factors in the cause of Nigeria Construction Delay

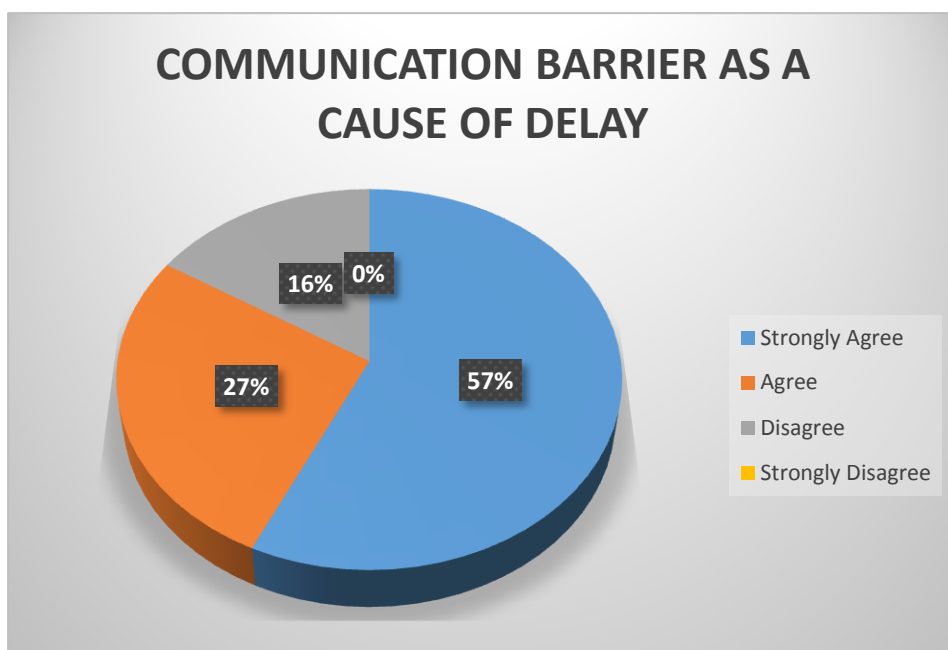
OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	54	57.0
Agree	26	27.0
Disagree	15	16.0
Strongly Disagree	0	0
TOTAL	95	100

Source: Field Survey, 2016

From the above survey result, 57% of the respondents strongly agree that communication barrier is one of the major factors in the cause of Nigeria Construction delay. This is followed by 27% who agrees to same fact. About 16% disagrees that communication barrier is one of the major factors in the cause of Nigeria Construction delay. This is a strong

indication that communication barrier contributes to delay in Construction projects in Nigeria. PMBOK (2013) states that effective communication creates a bridge between stakeholders, who may have different cultural and organizational backgrounds, different level of expertise and different perspectives and interest, which impacts or have an influence on the project execution or outcome. This is shown on a Pie Chart below.

Fig. 18: Pie Chart showing Communication barrier as a major factor in the cause of Nigeria Construction delay.



Source: Field Survey, 2016

Question 17: High level of corruption within the government and Construction

Industry in Nigeria can be considered to have a great impact on Nigeria Construction project delay.

The above question intends to find out if high level of corruption within the government and Construction Industry in Nigeria can be considered to have a great impact on Nigeria.

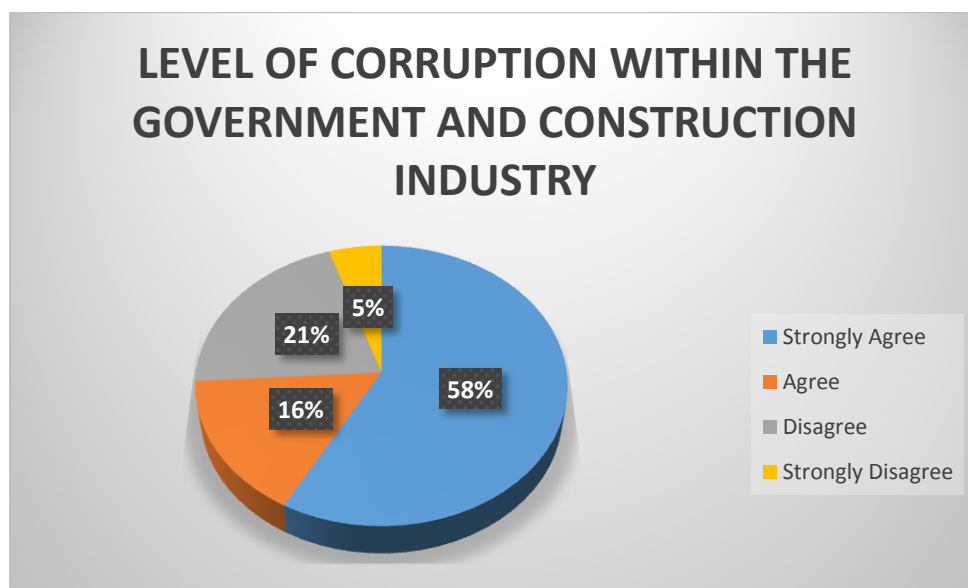
Table 17: Responses on if high level of corruption within the government and Construction Industry in Nigeria can be considered to have great impact on Construction project delay.

OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	55	58.0
Agree	15	16.0
Disagree	20	21.0
Strongly Disagree	5	5.0
TOTAL	95	100

Source: Field Survey, 2016

The survey result shows that 58% of the total respondents strongly agree that high level of corruption within the government and Construction Industry in Nigeria can be considered to have a great impact on Nigeria construction project delay. 16% agree to same fact while 21% disagrees and 5% strongly disagrees to this fact. From above analysis, is it evident that corruption is at a high rate within the government and the Construction Industry. This can be said to be the root cause of construction delay in Nigeria because when the government is corrupt, it will reflect in the selection of contractors for selfish interest. It can also lead to inflation of cost of raw materials which are all bedrock to construction delay. This information is shown on a Pie Chart below.

Fig. 19: Pie Chart showing impact of High Level Corruption within the Government and Construction Industry.



Source: Field Survey, 2016

Question 18: Poor Contract Management, Changes in Site Condition, Shortage of Material and Improper planning are the major Causes of Construction Delays in Nigeria.

This question intends to confirm that Poor Contract Management, Changes in Site Condition, Shortage of Material and Improper planning are the major causes of Construction delays in Nigeria.

Table 18: Responses on there are major causes of Construction delays in Nigeria

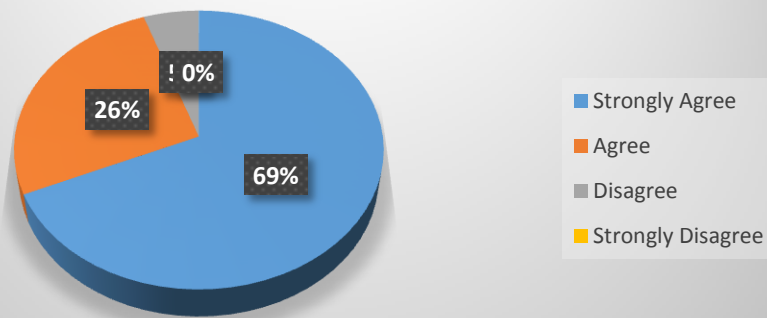
OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	65	68.4
Agree	25	26.3
Disagree	5	5.3
Strongly Disagree	0	0
TOTAL	95	100

Source: Field Survey, 2016

According to the above table, 68.4% strongly agree that poor contract management, change in site condition, shortage of material and improper planning are the major causes of construction delays in Nigeria. 26.3% agrees to same fact, while 5.3% disagrees. This simple means that of a truth, poor contract management, change in site condition, shortage of material and improper planning are the major causes of construction delays in Nigeria. This information is represented on a Pie Chart below.

Fig. 20: Pie Chart showing there are major causes of Construction delays in Nigeria.

THERE ARE MAJOR CAUSES OF CONSTRUCTION DELAYS IN NIGERIA



Source: Field Survey, 2016

Question 19: The problems of Contractors incompetency, shortage or inadequacies in industrial infrastructure, main supply of resources and clients and consultants are the variables that influence time and cost overruns in project constructions in Nigeria.

The above question intends to confirm that the problems of Contractors incompetency, shortage or inadequacies in industrial infrastructure, main supply of resources and clients and consultants are the variables that influence time and cost overruns in project constructions in Nigeria.

Table 19: Responses on the problems that influence time and cost overruns in Project Constructions in Nigeria.

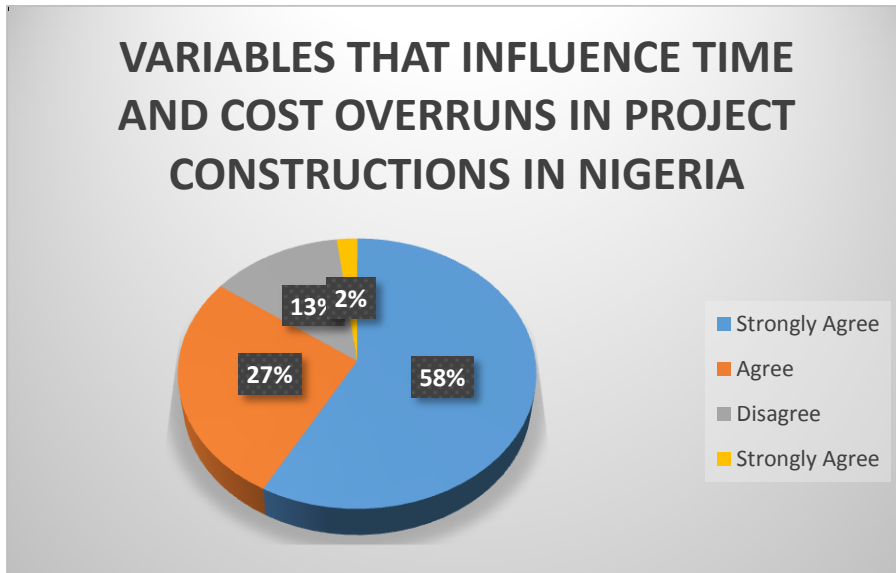
OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	55	58
Agree	26	27
Disagree	12	13
Strongly Disagree	2	2
TOTAL	95	100

Source: Field Survey, 2016

From the above survey results, 58% of the respondents strongly agree that the problems of contractors' incompetency, shortage or inadequacies in industrial infrastructure,

main supply of resources and clients and consultants are the variables that influence time and cost overruns in project construction in Nigeria. About 27% agrees, 13% disagrees and 2% strongly disagrees. This information is shown on a Pie Chart below.

Fig. 21: Pie Chart showing the variables that influence time and cost overruns on Project Constructions in Nigeria.



Source: Field Survey, 2016

Question 20: Price fluctuation is the most severe cause of Project cost escalation or Cost Overrun in Nigeria Construction Industry.

The above question intends to confirm that price fluctuation is the most severe case of project cost escalation or cost overrun in Nigeria Construction Industry.

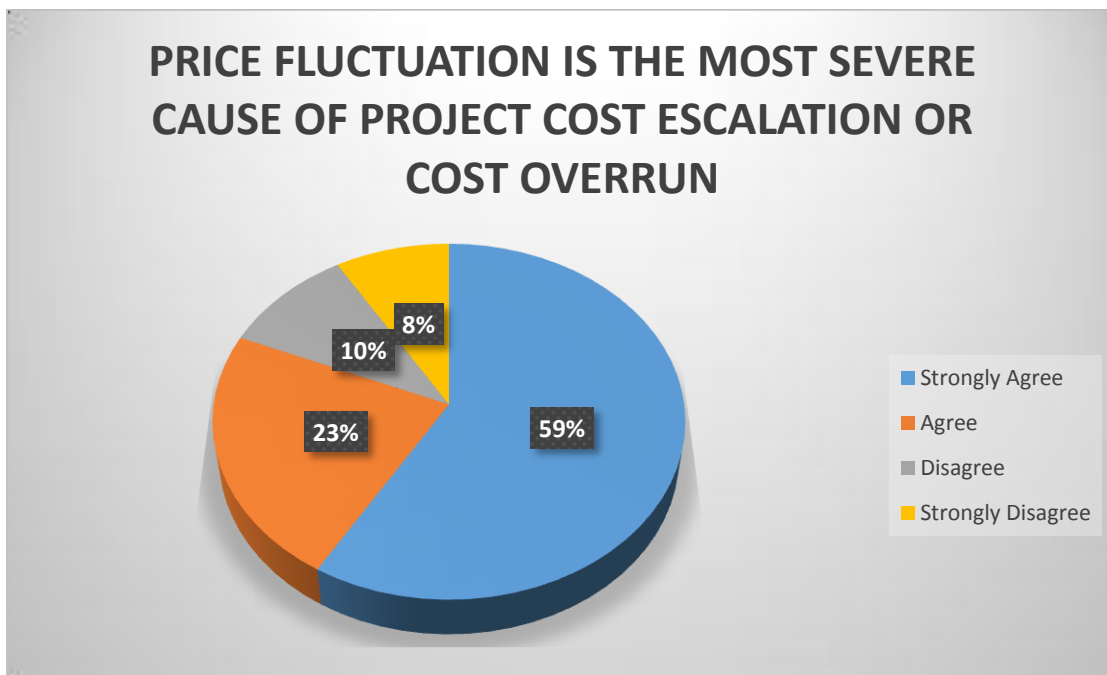
Table 20: Price fluctuation is the most severe cause of Project Cost escalation or Cost Overrun in Nigeria Construction Industry.

OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	35	37.0
Agree	27	28.0
Disagree	23	24.0
Strongly Disagree	10	11.0
TOTAL	95	100

Source: Field Survey, 2016

The survey results above show that 37% of the respondents strongly agree that price fluctuation is the most severe cause of project cost escalation or cost overrun in Nigeria Construction Industry. 28% of the respondents agrees, 24% disagrees and 11% strongly agrees. From this analysis, it is evident that price fluctuation is the most severe cause of project cost escalation or cost overrun in Nigeria Construction Industry.

Fig. 22: Pie Chart showing that price fluctuation is the most severe cause of Project Cost escalation in Nigeria Construction Industry.



Source: Field Survey, 2016

Question 21: The problem of inaccurate work schedule in many Construction

Projects in Nigeria have resulted to uncertainty and time overrun of the entire project.

This question intends to confirm that the problem of inaccurate work schedule in many Construction projects in Nigeria have resulted to uncertainty and time overrun of the entire project.

Table 21: Responses on the problem of inaccurate work schedule in many

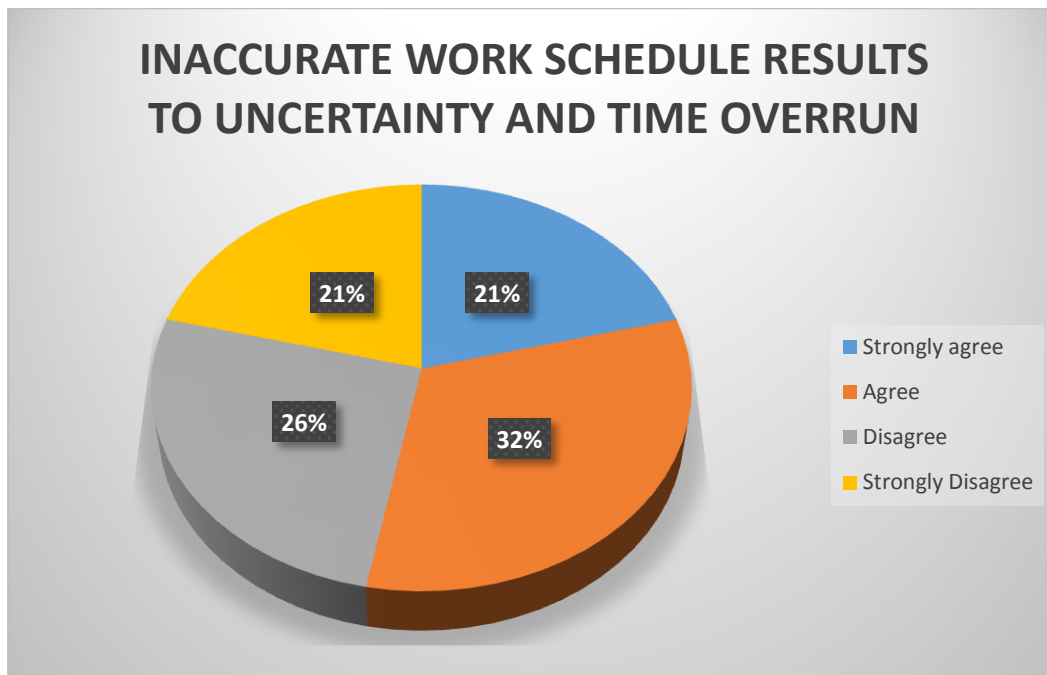
Construction Projects in Nigeria have resulted to uncertainty and time overrun of the entire project.

OPTION	FREQUENCY	PERCENTAGE
Strongly Agree	20	21.0
Agree	30	32.0
Disagree	25	26.0
Strongly Disagree	20	21.0
TOTAL	95	100

Source: Field Survey, 2016

From the above the table, 32% of the respondents agree that the problem of inaccurate work schedule in many construction projects in Nigeria has resulted to uncertainty and time overrun of the entire project while 21% strongly agree. On the other hand, 26% disagrees to the above fact while 21% strongly disagrees. In totality, 53% are in support of the fact that inaccurate work schedule has resulted to uncertainty and time overrun on projects in Nigeria, while 47% disagrees to this. The above information is shown on a Pie Chart.

Fig. 23: Pie Chart showing Inaccurate work Schedule results to Uncertainty and Time Overrun of the entire Project



Source: Field Survey, 2016

- ❖ **Research Objective 3: To propose a Mitigation Strategy for improving and achieving Construction Project based on the outcomes of the study.**

The aim of this objective is to propose mitigation strategy for improving and achieving construction project based on the outcomes of the study. In order to analyze this, five variables will be considered.

Question 22: What is the level of project management awareness in Nigeria Construction Industry?

The above question intends to find out the level of project management awareness in Nigeria Construction industry.

Table 22: Responses on the level of Project Management awareness in Nigeria Construction Industry.

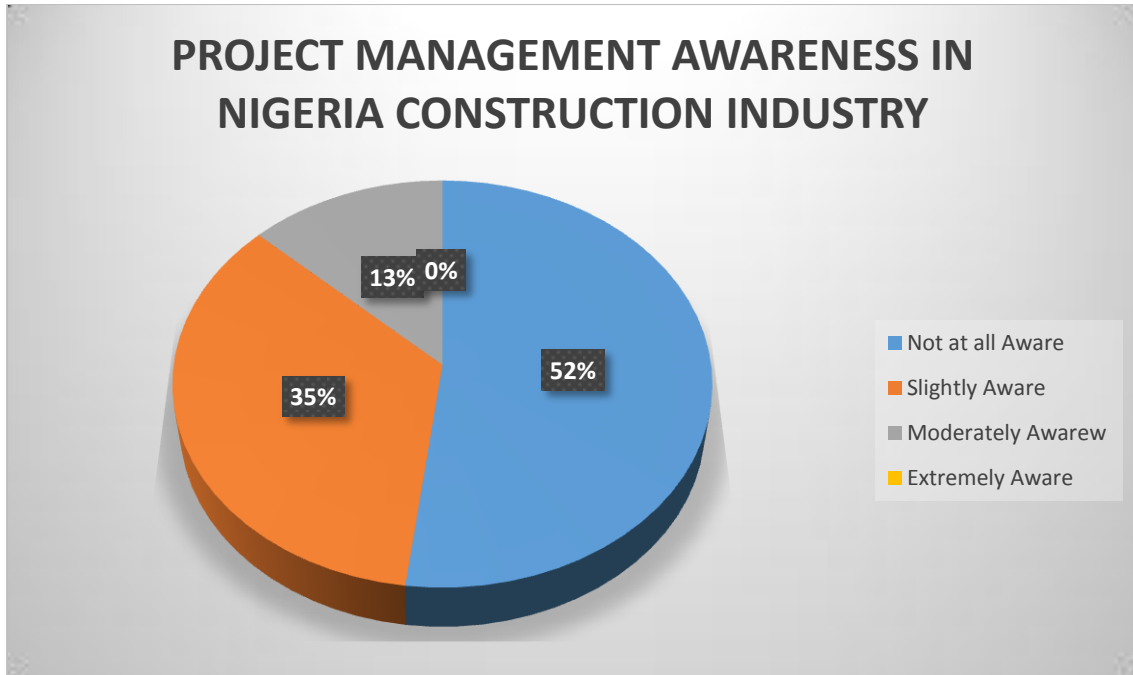
OPTION	FREQUENCY	PERCENTAGE (%)
Not at all Aware	50	52.0
Slightly Aware	33	35.0
Moderately Aware	12	13.0
Extremely Aware	0	0
TOTAL	95	100

Source: Field Survey, 2016

According to the survey result, 52% of the respondents are of the opinion that there is no awareness of Project Management in Nigeria Construction Industry. This is followed by 35% that stated there is slightly aware of the same fact. 13% are of the opinion that there is moderately aware. This is an indication that Project Management awareness is very low within the Construction Industry, which can hamper meeting with project requirement. This information is represented on a Pie Chart below.

Fig. 24: Pie Chart showing Project Management awareness in Nigeria Construction Industry.

PROJECT MANAGEMENT AWARENESS IN NIGERIA CONSTRUCTION INDUSTRY



Source: Field Survey, 2016

Question 23: Increased knowledge and competency level in Project Management by

Contractors would help prevent delays and construction failures in Nigeria.

This question intends to confirm that Increased knowledge and competency level in Project Management by Contractors would help prevent delays and construction failures in Nigeria.

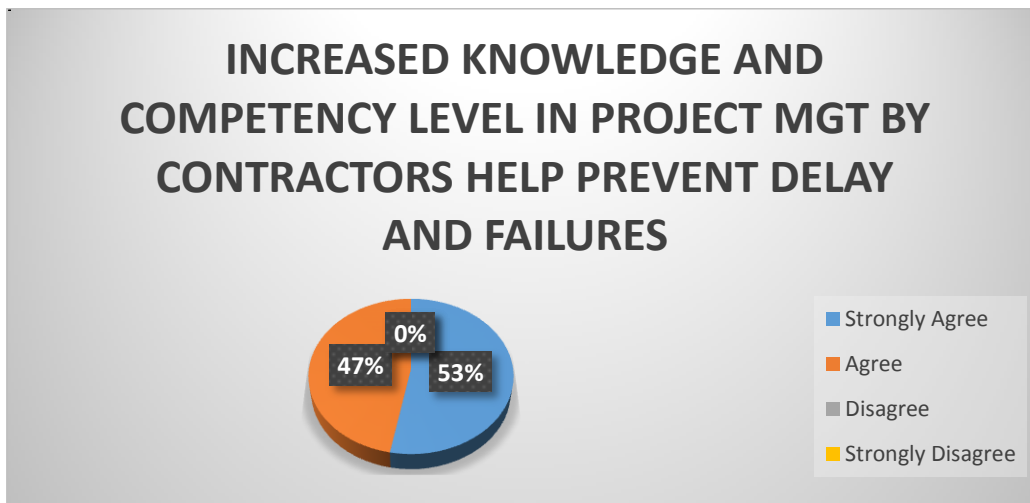
Table 23: Responses on Increased Knowledge and Competency Level in Project Management by Contractors would help prevent delays and Construction Failures in Nigeria.

OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	50	53.0
Agree	45	47.0
Disagree	0	0
Strongly Disagree	0	0
TOTAL	95	100

Source: Field Survey, 2016

From the above results, 53% of the respondents strongly agree that increased knowledge and competency level in project management by Contractors would help prevent delays and construction failures in Nigeria. This is followed by 47% who also agree to same fact. This information is shown on a Pie Chart below.

Fig. 25: Pie Chart showing that Increased Knowledge and Competency Level in Project Management by Contractors helps prevent delays and Construction Failure in Nigeria.



Source: Field Survey, 2016

Question 24: Cause of construction delays in Nigeria can be avoided to the barest minimum through effective government policies.

The above question intends to find out if causes of construction delays in Nigeria can be avoided to the barest minimum through effective government policies.

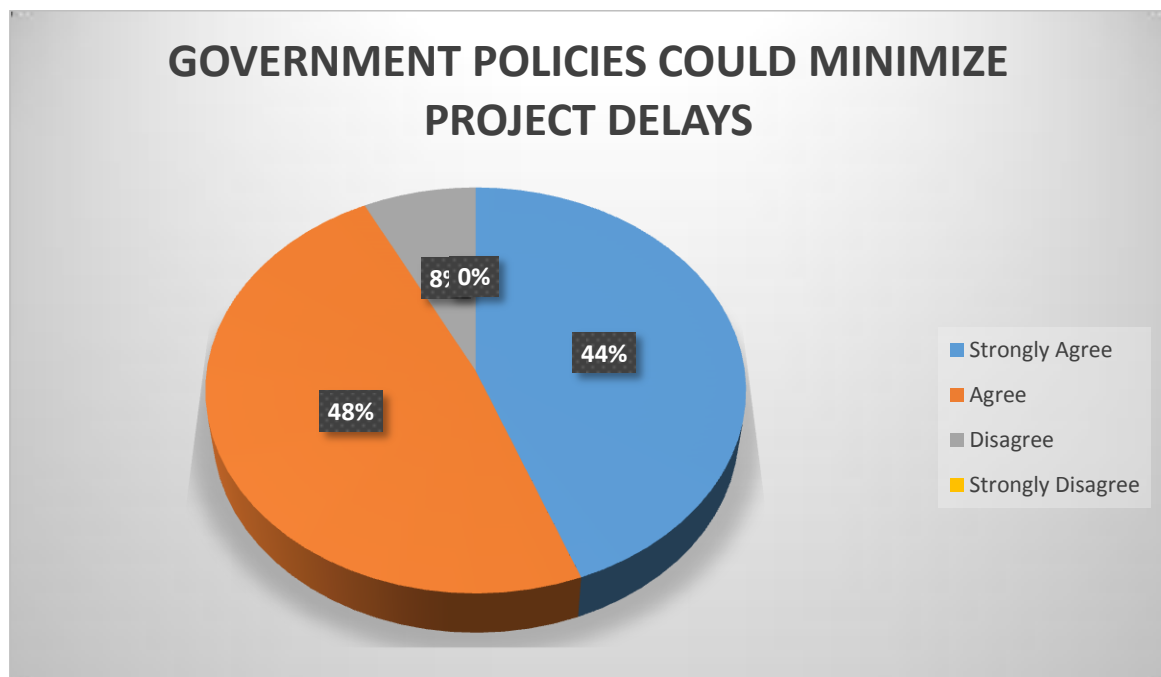
Table 24: Responses on Causes of Construction Delays in Nigeria can be avoided to the barest minimum through Effective Government Policies.

OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	42	44.2
Agree	46	48.4
Disagree	7	7.4
Strongly Disagree	0	0
TOTAL	95	100

Source: Field Survey, 2016

According to the above table, 44.2% of the respondents are of the opinion that causes of construction delays in Nigeria can be avoided to the barest minimum through effective government policies. About 48.4% agree to same fact, while 7.4% disagrees. From this analysis, it is evident that government polices plays key role in minimizing project delays in Nigeria. This information is shown on a Pie Chart below.

Fig. 26: Pie Chart showing that Government Policies could minimize Project Delays



Source: Field Survey, 2016

Question 25: High level of Stakeholders’ influence could prevent delays and failures in Construction Industry.

The above question intends to find out if high level of stakeholders’ influence could prevent delays and failures in Construction Industry.

Table 25: Responses on High level of Stakeholders’ influence could prevent delays and failures in Construction Industry.

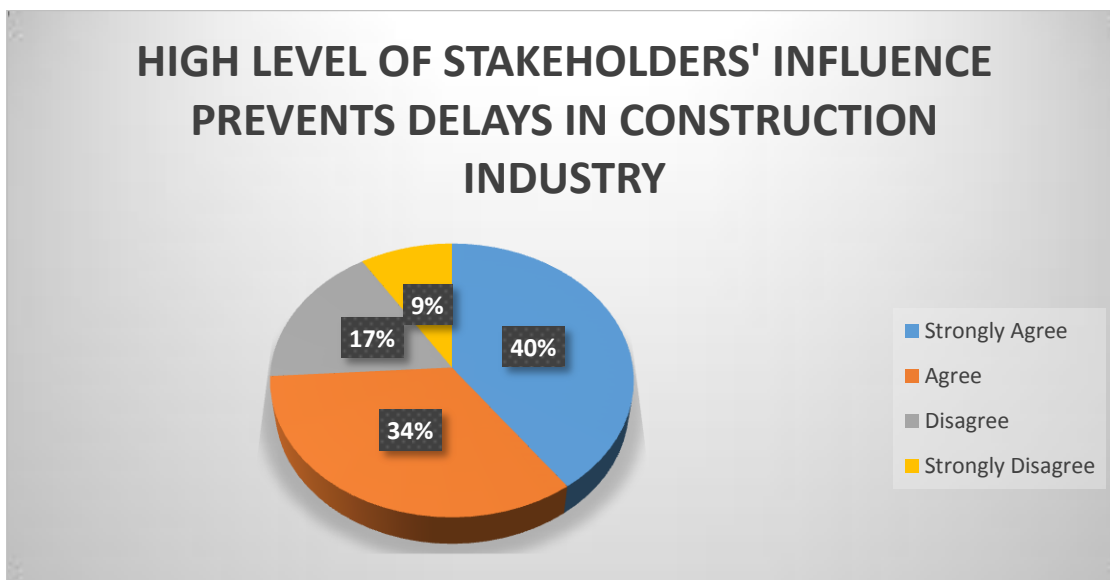
OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	38	40.0

Agree	32	34.0
Disagree	16	17.0
Strongly Disagree	9	9.0
TOTAL	95	100

Source: Field Survey, 2016

According to the survey results, 40% of the respondents strongly agree that high level of stakeholders’ influence could prevent delays and failures in Construction Industry. 34% agrees, 17% disagrees and 9% strongly disagrees. From this analysis, a greater percentage of the respondents do believe that stakeholders’ influence could prevent delays and failures in Construction Industry. This information is shown on a Pie Chart below.

Fig. 27: Pie Chart showing that High Level of Stakeholders’ influence prevents Delays in Construction Industry.



Source: Field Survey, 2016

Question 26: Good Mitigation Strategies can lessen Construction Delays and Failures

when properly implemented throughout the Construction Project Life cycle in Nigeria

The above question intends to find out if good mitigation strategies can lessen construction delays and failures when properly implemented throughout the construction project life cycle in Nigeria.

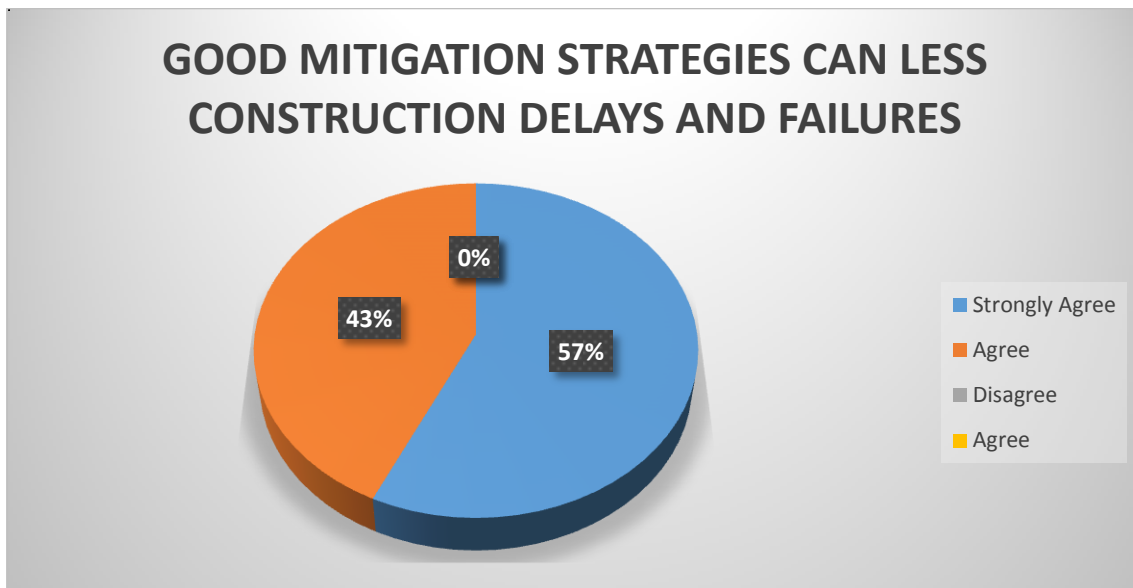
Table 26: Responses on Good Mitigation Strategies can lessen Construction Delays and Failures when properly implemented throughout the Construction Project life Cycle in Nigeria.

OPTION	FREQUENCY	PERCENTAGE (%)
Strongly Agree	54	57.0
Agree	41	43.0
Disagree	0	0
Strongly Disagree	0	0
TOTAL	95	100

Source: Field Survey, 2016

According to the above table, 57% strongly disagree that good mitigation strategies can lessen construction delays and failures when its properly implemented throughout the construction project life cycle in Nigeria. 43% agrees with same fact. From this result there is a strong indication that the above research objective was a success. This information is shown on a Pie Chart below.

Fig. 28: Pie Chart showing that Good Mitigation Strategies can lessen Delays and Failures when properly implemented.



Source: Field Survey, 2016

4.5 CONCLUSION

After an adequate analysis of the research objective, it could be drawn that delay is a serious problem in the Construction Industry which needs to be tackled as soon as possible. Also it was evident that there is lack of knowledge in relation to Project Management in Nigeria Construction Industry; According to Damilola (2010), the traditional construction managers like architects, civil engineers should recognize the changes in the Construction Industry and must supplement their traditional functions with non-engineering knowledge and skill of Project Management to meet professional demands. The research concluded that good mitigation strategies would help lessen delays and project failures when properly implemented.

CHAPTER FIVE

DISCUSSION

This research work was born out of the desire to find out the factors influencing delays and cost overruns on construction projects in Nigeria. The primary motive was to help develop a mitigation strategy that could be used to minimize project delays and failures in Nigeria Construction Industry. This led to the formulation of adequate research objectives as stated below.

- ❖ To evaluate the rate and effect of delay and cost overrun in completion of construction projects in Nigeria.
- ❖ To identify the factors that lead to project delays
- ❖ To propose a mitigation strategy for improving and achieving construction project based on the outcomes of the study.

These objectives have been critically analyzed in the previous chapter which is the data analysis and findings. There were also research questions which was formulated on the basis of this research. These questions are:

- ❖ What are the major factors responsible for delays and subsequent desertion of construction projects in Nigeria?
- ❖ What variables influence time and cost overruns in construction projects and evaluate their relative importance?
- ❖ What is the rate and influence of delay in construction project in Nigeria?
- ❖ What are the proposed solutions for project delays and failure in Construction Industry; ranking their impacts and investigating how they could be eliminated or minimized?

The above question will be well answered and analyzed one after the other at the course of this discussion. This is to enable the research establish a link between the research objectives and the research question which serve as the backbone for any comprehensive research work.

5.1 RESEARCH QUESTION 1: What are the major factors responsible for delays and subsequent desertion of construction projects in Nigeria?

In answering the above research question, the researcher considered the data generated from research objective 2 which is “To Identify the factors that lead to Project delays”. From the questionnaire distributed, it could be established that the major factors responsible for delays and subsequent desertion of construction projects in Nigeria are as follows.

- ❖ Communication barriers
- ❖ High level of corruption within the government and construction industry in Nigeria
- ❖ Poor contract management
- ❖ Changes in site condition
- ❖ Shortage of material or resources
- ❖ Improper planning
- ❖ Contractors incompetency
- ❖ Shortage or inadequacies in industrial infrastructure
- ❖ Clients and consultants
- ❖ Price fluctuation of materials
- ❖ Inaccurate work schedule

According to Michael (2010) as stated in the literature review, corruption in the Nigeria construction industry is endemic and has resulted to building collapse, abandonment of project, upward review of contract cost, extension of time and reduction in the life span of building. Most authors reviewed either stated same factors or made some additions to it. These causes have so much eaten up the Nigeria construction industry that it will take adequate government intervention. Off course this intervention must come from a corrupt free government who is determined to set things right, having the good of the masses in mind.

According to responses gotten from the survey, about 94% of the respondents confirmed that poor contract management, changes in site condition, shortage or material and improper planning are really causing delays and failures in Nigerian construction industry. This can only be corrected or brought to minimal through good government policies and commitment from the government.

5.2 RESEARCH QUESTION 2: What variables influence time and cost overruns in Construction Projects?

In response to the above question, the researcher considered the data collected from research objective 1 which is “To evaluate the rate and effect of delay and cost overrun in completion of construction projects in Nigeria”. Greater number of the respondents agreed that there is definitely the effect of delay and cost overrun in completion of construction projects in Nigeria. Some of these effects are listed below:

- ❖ Project scope creeps
- ❖ Massive project failures
- ❖ Disputes between client and contractor
- ❖ Increased in cost of material and construction
- ❖ Loss of productivity and revenue.

From the literature review, Li et al (2000) stated that some of the effects of delay and cost overrun on project completion Nigeria include additional cost, decline in quality and rework, loss of productivity, late completion of the project, increased time related costs, third party claims and termination of contracts. These effects are in line with the responses gotten from the survey. These effects are very evident on every 9 out of 10 construction projects in Nigeria. With the help of a government and governance, these effects would be gotten rid of and Nigeria Construction Industry restored to a state that it can even compete with other construction Industries round the world.

5.3 RESEARCH QUESTION 3: What is the rate and influence of delay in Construction Project in Nigeria?

In answering the above question, the researcher still looked at some of the data obtain from research object 2, which is “To Identify the factors that lead to Project delays”. Most of the respondent were of the opinion that the rate and influence of delay in construction projects are so high in Nigeria. As contained in the questionnaire, some variables were used to obtain the above information from the respondents which are;

- ❖ The competency level of contractors,
- ❖ The experience level of Nigeria contractors compared to the construction project assigned to them
- ❖ The level of delay frequency in every 20 construction projects executed in Nigeria
- ❖ The level of delay frequency of project execution in Nigeria and
- ❖ The level of delay frequency on Project closing time in Nigeria.

For the competency level of contractors, about 42% of the respondents rated it fair, 24% rated good and just 5% rated it excellent. This simply means that the contractors competency level in Nigeria is not encouraging, which has contributed to project delays and failures. On the experience of contractors compared to the construction project assigned to them, 45% of the respondents rated it poor. This is another influence of project delays in Nigeria. Contractors need to improve in their skills and knowledge if the Nigeria construction industry must be salvaged. On the level of delay frequency in every 20 construction projects executed in Nigeria, 52% of the respondents rated it often while 37% rated it always. That is to say 8 out of every 10 construction projects awarded in Nigeria is being delayed. On the level of delay frequency of project execution in Nigeria, 87% rated it often and always which has same delay influence as stated earlier. Finally, on the level of delay frequency on project closing time in Nigeria, 96% of the respondents rated it often and always. That is to say that contractors do not meet their project execution deadline in Nigeria, which is a setback in the construction industry.

5.4 RESEARCH QUESTION 4: What are the proposed solutions to project delays and failure in Nigeria Construction Industry?

In answering this research question, the researcher considered the responses gotten from research object 3 which is “To propose a mitigation strategy for improving and achieving construction project based on the outcomes of the study”. Some of the proposed solutions contained in the questionnaire of which the respondents either agreed to are

- ❖ Increased knowledge and competency level in project management by contractors
- ❖ Effective government policies
- ❖ High level of stakeholders’ influence
- ❖ Proper implementation of mitigation strategies, throughout the construction project life cycle in Nigeria.

The researcher also gathered that the project management awareness in Nigeria construction industry is very low, which ought not to be. This has directly or indirectly contributed to project delays and failures in the industry. This research work is a wakeup call for every construction company in Nigeria to make amends and set its goals towards attending a good standard in the Construction Industry.

5.5 HYPOTHESES TESTING

The researcher had some assumptions about the research problem at the beginning of the research. These assumptions or hypotheses are validated below

H1: Delay and cost overrun has a great impact on the massive project failures in Nigeria.

From the findings of the research objectives it is evident that delay and cost overrun has great impact on the massive project failures in Nigeria Construction Industry. Some of the factors of delay include communication barrier, high level of corruption within the government and construction industry, poor contract management, changes in site condition, shortage of material and improper planning, etc. The research revealed that Poor Contract Management, Changes in site condition, shortage of material and improper planning are the major factors responsible for delays in construction projects in Nigeria, with an alarming 94% of agreed and strongly agreed opinions from the respondents.

Contract management is the process of managing contract creation, execution and analysis to maximize operational and financial performance at an organization, all while reducing financial risk. Therefore, poor contract management is the inability to manage a contract well thereby increasing its financial risk which could lead to delay in construction projects. Changes in site condition implies that unexpected changes that a contract could encounter while executing a construction project. This could be in form of climate changes, additional structures, etc. When a contractor encounters this change, it would definitely cause a delay in the completion of the project. Shortage of material here simply means a situation whereby the materials available for a project execution is not enough as a result of damages, theft, improper estimation by the contractor, etc. This is linked to improper planning which is solely the fault of the contractor because of his human errors and inadequate management strategies.

This research also revealed that the problem of Contractors incompetency, inadequacies in industrial infrastructure, supply of resources and clients and consultants also leads to delay and project failures. This has a whopping 85% responses from the survey result. Contractors incompetency here means that either the contractor is not knowledgeable

enough about the construction project or lacks the equipment, good construction technique and manpower required in the execution of the project work.

Communication barrier is another delay factor in the construction industry. The more complex and risky a project is, the more it requires the active participation of all stakeholders. Co-operation and coordination of activities through interpersonal and group communication are very vital in ensuring that a project is completed successfully. More so, poor communication, inability to determine project stakeholders need for information, unable to determine communication channels in projects, insufficient interaction between project manager and the team, etc. all lead to construction delays and failures.

Another essential delay factor is high level of corruption within the government and construction industry. According to the survey result, about 74% of the respondents agreed to this fact. This shows that corruption has a bad effect on project delivery. Corruption here could be dramatic increase in the cost of construction, as well as favoritism which leads to project delays, especially when the contractors deliberately overstate the cost of requirements and falsify time sheet in order to achieve a higher price from the project. This not only results to delay but also leads to project abandonment and building collapse.

From this research, it is very evident that the impact of delay and cost overrun on project failures is very high. 89% of every project construction in Nigeria suffered delay, 87% of the projects suffered delay at execution and 96% suffered delay at project closure. This analysis is a good feedback with regards to some project failures evident in Nigeria. Considering all these factors, the first hypotheses “Delay and cost overrun has a great impact on the massive project failures in Nigeria” is proved.

H2: Well developed mitigation strategy could help minimize delay and failures in construction project in Nigeria.

At the course of this research, it was discovered that well developed mitigation strategy could help minimize delay and failures in Nigeria construction industry. On the contrary, no good mitigation strategy is on ground to checkmate the project failures inexperienced in Nigeria. This is evident in the level of project management awareness in the construction industry which is about 87%. Going by this result, when project management awareness is very low, carrying out mitigation strategies becomes almost impossible. Project

management knowledge can be very beneficial, particularly in large and complicated project like construction, since experts in various specialties can provide valuable services. It is possible that the various construction specialists in one way or the other have made advance in developing new techniques and tools for efficient implementation of construction project. However, it is through the adequate understanding of project management and its entire process that these specialists can respond more efficiently to balancing the competing project constraints and managing stakeholders toward meeting project requirements.

Some of the mitigation strategies or solutions obtained by the research are; Increased knowledge and competency level in project management, effective government policies, high level of stakeholders' influence and adequate knowledge of project management. The proper application of well-developed mitigation strategies could help project key participants like the clients and contractor meet their commitments and minimize negative impacts on construction project performance in relation to delay. This is evident from the survey result as 57% strongly agree while 43% agree that well developed mitigation strategy can lessen delay when implemented throughout the construction project life cycle in Nigeria.

With regards to the above factors, the second hypotheses "well-developed mitigation strategy could help minimize delay and failure in construction project in Nigeria" is proven.

5.6 GENERAL CONCLUSION

The results gotten from this research work can be said to be of great importance to the construction industry as all the respondents are fully involved in construction industry with good experience which means they have adequate knowledge that could supply the vital information needed on the questionnaire. Delays and failures has been established to be the major virus eating up the construction industry in the Nigeria. This has caused damages on the nation's economy. The Construction Industry ought to be the bedrock of economic growth of any nation but reverse is the case in Nigeria.

More so, the causes of construction delays and failures in Nigeria has been linked to communication barrier, high level of corruption within the government and construction industry, low level of project management awareness, etc These factors can be brought to the barest minimal through increased knowledge and competency level in project management

by contractors, high level of stakeholders' influence, effective government policies and above all a well develop mitigation strategy.

Finally Earned Value Management as good mitigation strategy is very essential in monitoring work progress as well as the scope, cost and time. If this is adopted and strictly adhered to, it will be a desirable end to the delays and failures experienced in the Nigeria Construction Industry. This is achievable when mitigation strategies are viewed as a positive process and the most creative task of contractors and project managers. This would help generate achievable expectations and increase control on project delays in Nigeria.

5.7 LIMITATION OF THE RESEARCH

In every research there are limitations which impact on the value of the findings. Mainly these can be related with time, cost and access to the right and relevant data and key data source. This conflict between the desirable and reality can have a significant impact on the quality and characteristics of the research. External researchers often hold little status with companies and need to clearly demonstrate their capability as a researcher and the credibility of the research. There may be limitations to the research owing to the extent of the population and the response rates but these will only present themselves after the data is collected. The major limitations to this research work are;

- **Time:** This is a serious limitation because of the multiple roles the researcher plays i.e. Worker, Parent and Researcher and these can prove to be very demanding if not managed appropriately.
- **Personal Feeling and Beliefs – Value Free and Unbiased:** According (Bryman and Bell, 2011:15). “Everyday interest comes from a personal vantage point, which is your personal need to know more about a specific subject”. Personal attachment presents both pluses and minuses. “It is important to recognise that research cannot be value free, but to ensure that there is no untrammelled excursion of values into the research process, and to be self-reflective and so exhibit ‘reflexivity’ about the part played by such factors” (Bryman and Bell, 2011:30). While it may provide the passion and dedication to do the research it also carries bias that can cause a researcher to jump to conclusions rather than arrive at a conclusion after methodical scholarly work. According to Machi and McEvoy, (2009:19), “while your bias and

opinion can never entirely be removed, they must be controlled by rationally identifying and confronting these views” because “a biased research can produce biased findings”.

- **Quality of Questionnaire Design:** The quality of the research and the capability of the researcher will limit the validity and credibility of the research. The better the research quality and capability, the more the researcher will result in fewer problems experienced during the research. Choosing the right questions ensures they are reliable (consistent) and valid (accurate –measuring what supposed to be measuring). Care must be given when considering the type, number and breadth of questions. Sensitive questions on income, religion, socio-economic group identification should also be handled carefully.

- **Analysis and Interpretation:** The quality of this depends on the skills and experience of the researcher, particularly ‘critical thinking skills’. The researcher will need to be careful of what Cottrell calls the Barriers to Critical Thinking, in particular ‘overestimating your own reasoning abilities’. “Imprecise, inaccurate and illogical thinking does not help to develop the mental abilities required for higher-level academic or professional work” (Cottrell, S. 2011: 10). There will be limitations where the data gathered is limited to the scope of the questions on the questionnaire, asked at the in-depth interviews. There may be bias with the qualitative data from the questionnaire as people with interest in the subject matter will tend to engage more than people with little interest.

5.8 RECOMMENDATIONS

For every research work, recommendations are very vital as it will help the researcher proffer some workable solutions to the eminent research problem. From the data analysis and findings, certain factors were obtained as the causes of delays, failures and cost overrun in the execution of projects in Nigeria. These factors are bound to continue except both the government and the construction management undertake adequate action to control these causes starting from the design stage.

With regards to this research, some practical recommendations have been stated in order to minimize delays and failures in construction project. These recommendations are to be adhered to by the Nigeria Construction Industry and the government too. They are;

- ❖ Project Management awareness must be created in the construction industries and also made a compulsory skill within the industry
- ❖ Adequate training programs and seminars should be introduced at least quarterly. This will help equip the specialists with latest tools and its application.
- ❖ Well-developed mitigation strategies should be adopted and practiced by the construction industry
- ❖ The government policies must be flexible enough to tackle crippling issues in the industry.
- ❖ Good contingency plans should be incorporated in every construction project executed in Nigeria
- ❖ The contractors should be given close monitoring in the course of their project execution.
- ❖ There should be frequent progress meetings with stakeholders where issues affecting the industry can be addressed
- ❖ There should be proper site management, supervision and coordination between the clients and the contractors.
- ❖ The Contractors should always ensure proper material procurement and commitment to every project assigned to them.
- ❖ All communication barriers between the project participants must be broken by ensuring information flows through the right channels and media.
- ❖ Earned Value Management is a good mitigation strategy which should be adopted by the Construction Industries to aid minimise project delays and failures.
- ❖ Since this Earned Value Management helps monitors work progress, the project managers will make use of it in knowing how their work would go even from the start.

CHAPTER SIX

REFLECTION

6.1 INTRODUCTION

“study without reflection is a waste of time, reflection without study is dangerous”

Confucius.

This Chapter is mainly about reflection on learning, which reviews how i felt about my learning process throughout this postgraduate MBA in Project Management programme. According to Wilkinson (1996) reflection is an active process which allows the individual to gain understanding into all the factors that have contributed to the knowledge and practice which include historical, social, cultural and personal experiences.

Like every other piece of work there always lessons learned which needs to be reflected on, Duffy (2007) states that reflection challenges the individual and supports them to undertake the process of self-enquiry which has the benefit of empowerment and personal transformation. This reflection will not just covers my self-reflection and knowledge I gained while researching and writing this dissertation, but it will discuss my experience during the whole MBA course such as my personal experience during the course, reflection on learning, writing, and on sources, reflection on preparation of dissertation, my Strength and weakness, which I discovered during the process, finally skills developed throughout this period.

6.2 LEARNING STYLES:

Students process information in different ways and have different styles of interaction with others, the thinking skills and the ability to process information may vary when class-wide interventions such as cooperative learning and other peer support arrangements are utilized, Carter, E. W., Kennedy, C.H. (2006). No doubt individuals learn in many different ways, this Postgraduate program availed me the opportunity to discover better and more suiting ways, through which I learn, with regards to project management; researching my problem question in the light of my case study enlightened me in ways that only classroom lectures would not have. Entwistle, N., Thompson, S., & Tait, H., (1992), while writing on the Guidelines for Promoting Effective Learning in Higher Education stated that students tend to learn most

when they are actively involved in developing their own knowledge, this was certainly true for me. According to Kolb (1984) “learning is the process whereby knowledge is created through the transformation of experience”. Kolb built upon earlier work by John Dewey and Kurt Levin in order to develop the Experimental Learning Theory. It presents a cyclic model of learning which consists of four stages

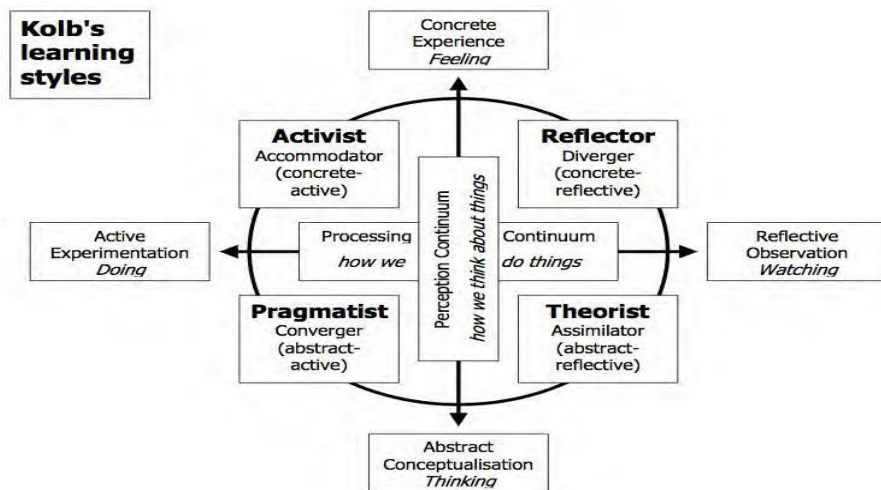


Figure: 29 Kolb's Learning Styles

I discovered I am more of a reflector and pragmatist learning style. During the period of this dissertation the researcher spent more her time collecting and analyzing both primary and secondary data. I always ensured to maintain a big picture perception and therefore found it helpful to gather information from all angles of the topic. I also used literature from varying time frames in order to gain a good insight into the development of the research area.

6.3 REFLECTION ON PROCESS

To be left with the freedom to select your topic and to conduct your own research around the chosen topic was awesome in my opinion; I had the opportunity to choose a topic and case study country, but I chose Nigeria, as I wanted a personal touch to my dissertation, and because it will give me an opportunity to devise a mitigation strategy that will particularly affect construction projects in my country.

After I received approval to my dissertation proposal I began researching more on my topic to identify and highlight gaps in this field of study, I gathered literature to see a pattern amongst the literature highlighting topic statement. At firstly I sort literatures that highlights

causes of project failures and cost over all in Nigeria construction projects. I was interested to see what variable are causing project abandonment in this industry and to investigate if improvements could be made in the way project managers measure project performance using End-Value Management to mitigate delay. My research became engaged on cause of delay, cost run over and how they are managed. To ascertain and prove my point I began to explore other avenues within the literature which had been highlighted as problem areas for delays this allowed me to piece together important research to provide a full review of the literature surrounding the topic. Due to time limitations I decided to further focus my research to a case study approach. I felt this method would allow me to research this topic in-depth with the time frame that I had for completion. A plan was developed for each step of the dissertation so that time could be managed appropriately giving sufficient time to complete the dissertation on time. Literature was sourced and reviewed mainly from literature search engines such as EBSCO Host and other engines were used but these were the most appropriate to this topic and well referenced.

General this research process allowed me to belief my own perceptions concerning my topic. I overcame worries as there was times when I thought I would never accomplish this task and that topic wasn't good enough a topic. My whole system was soaked into this dissertation within this period of time, I had to think in and outside the box to complete my work.

6.4 REFLECTION ON USE OF SOURCES

While developing my literature review I found it challenging to locate appropriate articles. I also observed a lot of writers throughout the literature this pushed for further research in the area and several authors were presently writing on this very subject. To have an in-depth understanding of construction industry in Nigeria I met Mr Yemi Alakeji a project manager with over 20years experience in his field via Instagram, his was very helpful in providing me with some direction on how and where to get reliable secondary data and how to gather primary data, he shared most of his experiences and lesson learned on projects handled. However I feel I have enhanced my communication skills, research skills, writing and reading skills. At the beginning I spent most of my time reading literatures that are less relevant to the topic. However I learned to stay within the scope of my topic so I develop good critical sense. This meant that the research area was more defined which made it easier to find and review articles.

New Skills: One of the skills I certainly improved on was my research and writing skills; we were taught during on how to research as well as prepare citations. I learnt how to better reference the works of others and other types of materials I used in my research and that is a valuable knowledge I am grateful to have improved upon.

Challenges:

One of the challenges I faced was in the collation of my primary data from my case study country (Nigeria); there wasn't much statistical information out there to draw from. After much search and connection with the right industry professionals, I obtained my first set of data to begin my analysis.

Also creating my questionnaire wasn't such a challenge, however in creating this questionnaire, I discovered that I had some level of advantage in the format of my questionnaire, due to my deeper knowledge of the traditional dispositions of the intended participants.

Time constraint was another big factor; between completing the modules and exams, we had 3 months to write the dissertation and this seemed to me like I had to rush everything, coupled with my duties as a mother. My time management skill which was better improved in the course of this MBA was put into use; I soon divided the dissertation into parts and gave myself personal deadlines to allow me meet up with the actual deadline. However it will be much better if at least we had 6 months to prepare for the dissertation, or if it were divided into two parts between the two semesters, while of course factoring other modules offered within the MBA program.

6.5. REFLECTION ON OWN LEARNING

In an article published by Warwick learning and development center, it was stated that skills development occurs through research based learning as it allows a student to develop the intellectual skills of critical analysis, and develop the ability to work in groups, better time management and data handling, which can be useful in the student's own career. I still maintain that case study based-research (or project) and problem solving were my best methods of learning throughout this postgraduate program. This perhaps may be due to my inherent love of "doing it myself"; I constantly search out new methods of doing things and my inquisitorial nature has led me to increasing in knowledge through research and practice.

With relations to the DBS Project Management Masters, in the course of my research I had to deal with different types of data collected through interviews, questionnaires and online research, analyzing the data collated creating charts and drawing conclusions from them was altogether an awesome experience, although not without its challenges. The advantage of it being that given that this dissertation is mainly filled with results from my research, every information I collected, charts I created, analysis conducted and conclusions drawn are all fresh in my memory, and have contributed to my knowledge bank. Although finishing this project is the final piece of academic work for the masters, I believe that I will continue to study, experience, and learn. Kolb (2004) suggests that the challenge we face for lifelong

learning is above all a challenge of integrative development. It is suggested that for people to succeed in business they need integrity followed by intrapersonal skills (Knipfer et al 2013). I feel the MBA has helped me to develop those skills through recognition of my own leadership, and communication styles, development of awareness of different learning styles, and emotional intelligence and conflict management.

6.6 CONCLUSION

Finally, I have completing my MBA project management in DBS, though it was a huge commitment and extremely challenging, I have learned more than I expected, I ever would from both this dissertation and MBA programme. I enjoyed it all the way. The range of subjects covered was spot on and the variety of learning methods expertly employed by the experienced lecturers. I learnt a lot about myself through carefully crafted exercises and assignments, recognizing how I best acquired knowledge, what some of my personality traits were, and how I worked as a team member. I also acquired many new skills as part of my MBA programme. I have a huge sense of personal achievement and self-satisfaction that I was able to complete it. My learning will not stop there. In order to develop myself and progress my career I will need to constantly work and develop on the skills which I have gained through this programme.

BIBLIOGRAPHY

Books

Ahmed, A. S., Castillo, M. and Kappagantula, P. (2002): “Construction Delays in Florida: An Empirical Study”. Department of Construction Management, Florida International University of Munni.

Bajpai N. (2011): “Business Research Methods”. India: Pearson Education. pp. 194-195

Bartholomew, S.H. (1998): “Construction Contracting/ Business and Legal Principles”, N.J;

Blaikie, N. (1993): “Designing Social Research” Cambridge, UK, Polity Press.

Bryman A. and Bell E. (2005): “Business Research Methods” 4th Edition: UK. Oxford University Press.

Bryman A and Bell E. (2015). *Business Research Methods*. 4th Edn. United Kingdom. Oxford University Press.

Bryman, A. and Bell, E. (2011): “Business Research Methods”, 3rd Edition, Hong Kong, Oxford University Press.

Bryman, A. and Bell, E. (2015): “Business Research Strategies”. In: Oxford University Press Business Research Methods. 4th Edition. Oxford: Oxford University Press. p. 28.

Buhari I.B. (1991): “Inflation and the Nigerian Economy”. The Nigerian Quantity Surveyor. 8-9

Collis, J. and Hussey, R. (2014): “Identifying your Paradigm”. In: PALGRAVE MACMILLAN Business Research: A Practical Guide for Undergraduate and Postgraduate Students. 4th Edition. London: PALGRAVE MACMILLAN. p. 42-57.

Cooper, D. R. and Schindler, P.S. (2003): “Business Research Methods”. 8th Edition. New York: McGraw-Hill. p. 455-466.

Cooper, D. R. and Schindler P. S. (2000): “Business Research Methods” 7th Edition, McGraw-Hill College, USA, ISBN: 978-0072407419

Cottrell, S. (2011): “Critical Thinking Skills”. Basingstoke, Hampshire: Palgrave Macmillan.

Creswell, J. W. Vicki L. and Clark, P. (2011): “Designing and Conducting Mixed Methods Research”. 2nd Edition. London: Sage Publications Limited. pp. 69-90.

Creswell, J.W. and Clark, P. (2007): “Designing and Conducting Mixed Methods Research”. Thousand Oaks, California: Sage. p5.

Duffy, A. (2007). A concept analysis of reflective practice: Determining its value to nurses.

- British Journal of Nursing*. 16, (22), pp.1400-1407
- Fowler F. Jnr (2002): “Survey Research Methods”. 3rd Edition: Sage Publications, UK
- Hillebrandt, P.M. (1985): “The Economic Theory and The Construction Industry”, 2nd Edition. Macmillan, Basingstoke.
- Hofstee E. (2006): Extract from “Constructing a Good Dissertation”. A Practical Guide to Finishing a Master’s, MBA or PhD on Schedule.
- Husseini A.A. (1991): “Construction and the National Economy”. The Nigerian Quantity Surveyor. 20 – 21
- Isiadinso, E.I. (1988): “The Needs and Problems of the Building Industry in Nigeria”. A Quantity Surveyor’s View. Research Institute Seminar, Nigerian Building and Road Research Institute.
- Jankowicz, A.D. (2000): “Business Research Projects”, 3rd Ed, Thompson learning, UK
- Larson. E. W. and Gray, C. F. (2011): “Project Management: The Managerial Process”. 5th Edition. McGraw. Hill
- Li, Y., Guo-hui, S. and Eppler, M. (2010): “Making Strategy Work”: A Literature Review on The Factors Influencing Strategy Implementation, In Mazzola P and Kellerman Handbook of Research on Strategy Process (E.Ds.).
- Machi, L. and McEvoy, B. (2009): “The Literature Review”. Thousand Oaks, Calif.: Corwin Press.
- Maylor H. and Blackmom K. (2005): “Research Business and Management”. 1st Publication. Palgrave Macmillan
- Mbachu J.I.C. and Nkado, R. N. (2004): “Reducing Building Construction Costs” the Views of Consultants and Contractors. COBRA
- Myers, D. (2013): “Construction Economics: A New Approach”. 3rd Edition: New York: Routledge.
- O’Leary, Z. (Ed.). (2010): “The Essential Guide to Doing Your Research Project”. London: SAGE Publications Ltd.
- Paivi E. and Kovalainen, A. (2008): “Focus and Frame: The Relevance of The Research Question”. In: SAGE Publications Qualitative Methods in Business Research. London: SAGE Publications. p. 37-39.
- Paivi, E.and Kovalainen, A. (2008): “Qualitative Research Materials”. in SAGE Publications Qualitative Methods in Business Research. London: SAGE Publications. pp. 82-83.

Remenyi D., Williams B., Arthur., and Ethne, S. (2005): “Doing Research in Business and Management” – An Introduction to Process and Methods’ Sage Publications, London.

Rowley, J. and Slack, F. (2004): “Conducting A Literature Review”. Management Research News, 27(6), pp.31-39.

Saldana, J. (2013): “The Coding Manual for Qualitative Researchers”. 2nd Edition: London: Sage Publications Ltd. pp. 1-8.

Saleh A. T. (2009): “Causes of Delay in Construction Projects in Libya”. The International Conference On Economics & Administration, Faculty of Administration and Business University of Bucharest Romania; ICEA- FAA Buncharest, 14-15 Nov 2009.

Saunders, M., Lewis, P. and Thornhill, A. (2003): “Research Methods for Business Students”. 3rd Edition: Pearson Education Ltd, London.

Saunders, M., Lewis, A. and Thornhill, A. (2009): “Research Methods for Business Students”. 5th Edition: Essex, England: Pearson Education Limited. p. 66-398.

Saunders, M., Lewis, P. and Thornhill, A. (2009): “Research Methods for Business Students”. 5th Edition: Essex, England: Pearson Education Limited. p. 116-398.

Saunders, M., Lewis, P. and Thornhill, A. (2011): “Research Methods for Business Students”. 6th Edition: Pearson Education Limited. London.

Saunders M. Lewis, P. (2012): “Doing Research In Business & Management”: An Essential Guide to Planning Your Project. 1st Publication: Prentice Hall

Saunders, M., Lewis, P. and Thornhill, A. (2012): “Research Methods for Business Students”. 6th Edition: Harlow, England: Prentice Hall. Chapters 1 2 and 14.

Saunders M, Lewis P, and Thornhill A (2013) Research Methods for Business Students, Sixth Edition, London, Pearson.

Entwistle, N., Thompson, S., & Tait, H., (1992), Warwick /service /idc/resource/rbl /benefits. (Accessed: 5th August 2016).

Wilkinson. J., Wilkinson. C. (1996) Group discussions in nursing education: a learning process. *Nursing Standard*. 10(44), pp. 46-47

Zikmund, W. G. (2003): “Business research Methods”. 7th Edition: Ohio: Thomson Learning. South-Western. pp. 453-470.

Journals

AbdulRahman, H., Berawi. M. A, Berawi A.R, Othman M. O. and Yahya I.A. (2006): “Delay Mitigation in the Malaysian Construction Industry”. Journal of Construction Engineering and Management. Vol.13 (2) pp.106-125. Business Sources Complete, EBSCOhost [Online]. (Accessed: 5th July, 2016)

Adedokun O.A., Ogunsemi, D. R., Aje I.O., Awodele O.A and Dairo, D.O. (2013): *Evaluation of Qualitative Risk Analysis Techniques in Selected Large Construction Companies in Nigeria*, Journal of Facilities Management. Vol. 11, pp.123 – 135. Emerald Journal [Online]. (Accessed: 5th July, 2016)

Aibinu, A. and Odeyinka H.A. (2006): *“Construction Delays and Their Causative Factors in Nigeria”*. Journal of Construction Engineering and Management, Vol.132 (7), 667- 677.

Al- Kharash A. and Skitmore M. (2009): *“Causes of Delays in Saudi Arabian Public Sector Construction Project”*. Journal of Construction Management & Economics. Vol 3, pp. 3-23. Business Sources Complete, EBSCOhost [Online]. (Accessed: 7th July, 2016).

Al-Momani, H.A. (2000): *“Construction Delay: A Quantitative Analysis”*. International Journal of Project Management 2000;20: 51–59

Carter, E. & Kennedy, C. (2006). Promoting Access to the General Curriculum Using Peer Support Strategies. Research And Practice For Persons With Severe Disabilities, 31(4), 284-292. <http://dx.doi.org/10.1177/154079690603100402>

Ballard, G. and Howell, G. (1998): *“Shielding Production: Essential Step in Production Control”*, Journal of Construction Management and Engineering, Vol. 124 (1), 11-17

The Banff Centre (1993) “The Kolb Learning-Style Inventory©” Available at: http://www.banffcentre.ca/leadership/assessment_tools/kolb/ [Accessed: 2 August 2016]

Blumberg, B., Cooper, D., and Schindler, P. (2011): *“Business Research Methods”*. n.p.: London [u.a.], ECONIS, EBSCOhost, (Viewed 7th July, 2016).

El-Razek, M.E., Bassioni H.A and Mobarak A.M. (2008): *“Causes of Delay in Building Construction Projects in Egypt”*. Journal of Construction Engineering and Management. Vol.134 (11) pp.831-841. Business Sources Complete, EBSCOhost [Online]. (Accessed: 12th July, 2016)

Haseeb M., Xinhai-Lu, Aneesa, B., Maloof-ud-Dyian and Rabbani, W. (2011): *“Causes and Effects of Delays in Large Construction Projects in Pakistan”*, Kuwait Chapter of Arabian Journal of Business and Management Review, 1 (4), 18-42

Humphrey, G. (2016): Basic Concepts of Earned Value Management”. An Article from EVMS Education Centre.

Kasimu. M. A. (2012): *“Significant Factors That Causes Cost Overruns in Building Construction Project in Nigeria”* Interdisciplinary Journal of Contemporary Research in Business. Vol.3 (11), pp.775-780. Business Source Complete, EBSCOhost [Online]. (Accessed: 7th July, 2016)

Kumaraswamy M. M, Chan, W.M. (1998): “Contribute to Construction Delay”. Journal of Construction Management & Economics. Vol 16, pp. 17-29. Business Sources Complete, EBSCOhost [Online]. (Accessed: 7th July, 2016).

Knipfer, K, Kump, B, Wessel, D, & Cress, U. (2013) 'Reflection as a catalyst for organisational learning', *Studies In Continuing Education*, 35, 1, p. 30, Business Source Complete, EBSCOhost [Online], (Accessed 12 June 2016).

Kotter, J. (1995) 'Leading change: Why transformation efforts fail.' *Harvard Business Review*, 93(3), pp59-67. Business Source Complete, EBSCOhost [Online]. (Accessed: 19 July 2016).

Leishman D.M. (1991): “Protecting Engineer Against Construction Delay Claims NDC”. Journal of Management in Engineering 1991; Vol. 7(3): 3(19-33).

Mansfield N.R, Ugwu, O.O and Dorah, T, (1994): “Causes of Delay and Cost Overruns in Nigerian Construction Projects” International Journal of Project Manager. Vol.12 (4) p.254-260. Business Sources Complete, EBSCOhost [Online]. (Accessed: 7th July, 2016).

Mohammed, A.K. and Isah A.D. (2012): “Causes of delay in Nigeria Construction Industry”. Interdisciplinary Journal of Contemporary Research in Business. 4(2), 785-794.

Moneke, U. U. (2012): “Evaluation of Factors Affecting Work Schedule Effectiveness in the Management of Construction Project”. Journal of Contemporary Research in Business. Vol.3 (10), pp.297-309. Business Sources Complete, EBSCOhost [Online]. (Accessed: 7th July, 2016).

Morris, P. and Jamielson, A. (2005). “Moving from Corporate Strategy to Project Strategy”, Project Management Journal. Vol 36(4) 5-18

Odeh, A. M, Battaineh, H.T. (1999): “Causes of Construction Delay: Traditional Contracts”. International Journal of Project Management 2002; 20:67-73.

Ogunlana, S.O., Promkuntong, K and Jearkjirm, V. (1996): “Construction Delays in a Fast Growing Economy”; Comparing Thailand with Other Economies; International Journal of Project Management 14 (1) 37-45; Elsevier Science Ltd and IPMA.

Olaloku, F.A. (1987): “The Quantity Surveyor, the second tier Foreign Exchange Market and the Construction Industry in Nigeria; Options and Challenges”, Construction in Nigeria. Journal of the Federation of Building and Civil Engineering Contractors in Nigeria 4 (1) 4-8

Olowo – Okere, E.O. (1988): “Problems of Construction Management in Nigeria”, Paper presented to the workshop on National Construction Policy, ASCON, Badagry - Lagos, Nigeria.

Oyewobi, L.O., Ibronke, O. T., Ganiyu, B. O. and Ola-Awo, A. W. (2011): “Evaluating rework cost- A Study of Selected Building Projects in Niger State, Nigeria”. Journal of Geography and Regional Planning, Vol. 4 No. 3, pp. 147-151

Warfield, D. (2010) 'IS/IT Research: A Research: Methodologies Review'. *Journal Of Theoretical & Applied Information Technology*, 13(1) pp. 28-25, Computers & Applied Sciences Complete, EBSCOhost, [Online] (Accessed 24 July 2016).

[Http://www. Warwick.ac.uk /service /idc/resource/rbl /benefits.](http://www.warwick.ac.uk/service/idc/resource/rbl/benefits)

Wortham G. (2002): “Construction Delays and Best Practices”. Idaho Transportation Department.

APPENDICES

Appendix 1

Dear Respondent,

FACTORS INFLUENCING DELAYS AND COST OVERRUNS ON CONSTRUCTION PROJECTS IN NIGERIA; DEVELOPING A MITIGATION STRATEGY.

Researcher: Faith Okafor (jennilausz@yahoo.com)

Supervisor: Shaun Hayden (shaun.hayden@dbs.ie)

I am an MBA student in Project Management. As part of partial fulfilment requirement for MBA am conducting a small piece of research on Factors influencing delays and cost overruns on Construction Projects in Nigeria and developing a mitigation strategy.

I would like to invite you to take part in this research. Taking part will involve completing the consent form below and the attached questionnaire, which will take no more than 15 minutes of your time.

The answer you provide will be kept confidential; only aggregate data will be presented in the written report and therefore, your anonymity is guaranteed, individual questionnaires will be kept only until the research work has been moderated and seen by an external examiner and will then be destroyed.

If you have any questions not answered in this introduction to the research, please contact me using the details above. If you have read this information and are willing to participate in this research, please indicate your informed consent using the form below.

PARTICIPANT CONSENT

PLEASE TICK

- | | |
|---|--------------------------|
| 1) I confirm that I have read and understood the information
About the above study. I have had the opportunity to consider
The Information, ask questions and had these answered satisfactorily | <input type="checkbox"/> |
| 2) I understand that my participation is voluntary and that am free
To withdraw at any time without legal right being affected | <input type="checkbox"/> |
| 3) I agree to take part in the study. | <input type="checkbox"/> |

QUESTIONNAIRE

Section B: Factors responsible for delays, rate of delay and influence of time and cost overruns in Construction projects in Nigeria.

Below is the list of questions, kindly tick the most suitable option as it applies to you.

- 1) How would you rate the competency of Contractors in Nigeria?
 - ❖ Poor
 - ❖ Fair
 - ❖ Good
 - ❖ Very good
 - ❖ Excellent
- 2) What is the experience level of Nigerian Contractors compared to the Construction Project assigned to them?
 - ❖ Poor
 - ❖ Fair
 - ❖ Good
 - ❖ Very good
 - ❖ Excellent
- 3) What is the level of delay frequency in every 20 construction projects executed in Nigeria?
 - ❖ Never
 - ❖ Rarely
 - ❖ Often
 - ❖ Always
- 4) What is the level of delay frequency on Project execution in Nigeria?
 - ❖ Never
 - ❖ Rarely
 - ❖ Often
 - ❖ Always
- 5) What is the level of delay frequency on Project closing time in Nigeria?
 - ❖ Never
 - ❖ Rarely
 - ❖ Often
 - ❖ Always
- 6) Does Project Scope creeps have influence on Nigeria Construction delay?
 - ❖ Yes
 - ❖ No
- 7) Does delay have great impact on the massive project failures in Nigeria?
 - ❖ Yes
 - ❖ No
- 8) Delay is believed to lead to many negative effects such as disputes between client and contractors?
 - ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 9) Delay is believed to cause increase in costs, loss of productivity and revenue

- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 10) Communication barrier is one of the major delay factors in the Nigeria Construction Industry?
- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 11) High level of corruption within the Government and Construction Industry in Nigeria can be considered to have a great impact on Nigeria Construction Project delay.
- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 12) Poor contract management, changes in site condition, shortage of material and improper planning are the major causes of construction delays in Nigeria
- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 13) The problems of Contractors incompetency, shortage or inadequacies in industrial infrastructure, main supply of resources and clients and consultants are the variables that influence time and cost overruns in project constructions in Nigeria.
- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 14) Price fluctuation is the most severe cause of project cost escalation or cost overrun in Nigeria Construction Industry.
- ❖ Strongly agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 15) The problem of inaccurate work schedule in many construction projects in Nigeria has resulted to uncertainty and time overrun of the entire project?
- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree

Section C

Mitigation strategy and solutions to project delays and failures in Construction Industry

Below is the list of questions, kindly tick the most suitable option as it applies to you

- 16) What is the level of project management awareness in Nigeria Construction Industry?
- ❖ Not at all aware
 - ❖ Slightly Aware
 - ❖ Moderately Aware
 - ❖ Extremely Aware
- 17) Increased knowledge and competency level in project management by Contractors would help prevent delays and construction failures in Nigeria.
- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 18) Cause of construction delays in Nigeria can be avoided to the barest minimum through effective government policies.
- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 19) High level of Stakeholders' influence could prevent delays and failures in construction industry
- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree
- 20) Good mitigation strategies can lessen construction delays and failures if its properly implemented throughout the construction project life cycle in Nigeria.
- ❖ Strongly Agree
 - ❖ Agree
 - ❖ Disagree
 - ❖ Strongly Disagree

APPENDIX 2

Time Allocations

Activity	January				February				March				April				May				June				July				August						
Week number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
Read literature	■	■																																	
Finalise objectives		■	■	■	■	■	■	■																											
Draf literature review		■	■	■	■	■	■	■																											
Read methodology literature									■	■	■	■	■																						
Finalise research approach												■	■	■																					
Draft research strategy and method												■	■	■																					
Develop questionnaire													■	■	■	■																			
Mini focus group															■	■	■																		
Pre test of questionnaire with mini focus group															■	■	■																		
Pilot test																■	■	■																	
Extra buffer week																■	■	■																	
Holidays																■	■	■																	
Administer the questionnaire																	■	■	■	■	■														
Enter data into computer																						■	■	■	■	■									
Analyse data																							■	■	■	■	■								
Draft findings chapter																								■	■	■	■	■							
Final review of lit.review																									■	■	■	■	■						
Complete remaining chapters																										■	■	■	■	■					
Submit and await feedback																																		■	■
Final draft for submission																																			■
Print, bind																																			■
Submit																																			■