

CAUSES AND EFFECTS OF CONSTRUCTION PROJECTS DELAY IN NIGER STATE EDUCATIONAL INSTITUTIONS

Abstract

Economic development in every nation is based on construction projects undertaken through several types of contracts. However, construction industry is suffering from delay phenomenon. The causes and effects of delay in construction projects seem critical and if not handled appropriately, it could result to wastage and underutilization of resources. This has contributed to negative impact on stakeholders in the construction industry. This research aimed to appraise the main causes and effects of delay on tertiary institution construction projects with a view to minimizing its causes and improve project delivery, examine the factors responsible for project delay in educational institution in Niger state. 150 structured questionnaires were used and distributed to the following professionals in the construction industry: (Architect, Quantity surveyor, Project manager, contractor and civil engineer) and 135 were retrieved for computation of the result and discussion. Analytical techniques such as mean, ranking, correlation, t-test and analysis of variance (ANOVA), were used to analyze the data. The result showed that insufficient funding, non-payment of completed works, cash flow problem during construction and interference with project performance are the major factors that causes delay in educational institutions construction project. The mitigation measures in their order of importance are: use of appropriate construction method, systematic control mechanisms, proper emphasis on the past experience and developing human resources in the construction industry. The research also concluded that the major effects of construction delay are abandonment of the building projects, adequate planning, variation of project scope, incompetent project manager and delay in progress payment by the clients. Furthermore, the research also concluded, that there is a positive relationship between client related factor and all other related factors that causes delays. However, the research recommended that appropriate construction method and systematic control mechanism should be used appropriately for effective management of construction project in addition, an effective strategies management approach should be adopted at the top management of construction industry. through proper planning and scheduling.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the research

Economic development in well meaning nation is based on construction projects that are undertaken through several types of contracts (Gunduz *et al.*, 2013). Nowadays, the objectives of construction projects are challenging to be achieved as the numbers of projects delay are increasing (Amoatcy *et al.*, 2015) Construction industries are responsible for construction projects but these are suffering from delay phenomenon. This delay phenomenon is a common problem that caused by various factors, which affects the effort of project performance (Gunduz *et al.*, 2013). Construction delays have negative effects on clients, temporary workers and advisors in term of development in angry connections, doubt, case, mediation, income issues and general sentiment of anxiety toward each other (Mahamud *et al.*, 2012). The convenient conveyance of activities inside spending plan and to the require standard of value determined by the customers, is frequently viewed as fruitful venture conveyance, inability to finish the task inside the focused on schedule, planned expense and indicated standard of value by the customer is alluded to as postponement (Wolabi *et al.*.,2014).

Morakinyo *et al.* (2015) expressed that deferral is a worldwide wonder and happen in each development venture yet the level of its extent differ from task to extend. Besides, Iruobe et al. (2012) featured that impact of deferral in development ventures are not kidding and if not dealt with suitably could result to wastage and underutilization of assets, cost of efficiency and increment cost of development at the long run. Regularly, development ventures fall into cost and time overwhelm because of issues related with delays. Deferral can cause issue from drawing out of calendars, extra expense of the undertaking and jeopardizing the nature of the workmanship (Gonzaley *et al.*, 2013).

These difficulties of deferrals are the issues looked by the tertiary organization ventures Niger State

which need earnest arrangement. These deferral in finishing the tertiary organization extends in due time have the negative effects fair and square of digestion of information by the understudy. It also brings about deficit in the facility which will improve the standard of education in tertiary institution. Therefore, this becomes one of the reason that motivate the research to contribute to delay issue.

1.2 Statement of research problem

Several studies had been investigated on delay in construction projects and way of minimizing it. Most of these adopted the use of project management approach to manage delay. Never the less, there remain incessant challenges which impede the capability of all parties involved. Thus, that implies that every construction project has his peculiar problems causing delay, pending on where it is been situated. Morakinyo *et al.* (2018) expressed that deferral is a worldwide wonder and happen in each development venture, however the level of its greatness differs from task to extend. In Kenya, over 40% of all venture disappointment prompting case emerges from delay in venture culmination (Kaigari and Wanaina, 2017). Likewise as indicated by Ameh and Ogundare (2017) that 7 out of 10 ventures in Nigeria endures delay in their execution. Development extends over the globe in the report of Ghiasi (2016) are said to be described by dela ys, particularly during the development stage.

The expansion in venture delay in the development is harming the economy since it brings about wastage of assets, improved expense of activities and disappointments among partners, yet development is one of the central segments that can revive economic development of Nigeria. However, these are challenges faced in Niger State educational institution construction projects. The construction projects in most of the Niger State owned by the educational institution are facing delays sometime resulted in abundant projects. A similar study was conducted by Famiyeh *et al.* (2017) on ventures executed in a couple of instructive establishments in certain pieces of Ghana showed that accounts, unreasonable courses of events specified by customers, cost under-estimation by specialists,

poor meaning of undertaking extension, unnecessary varieties orders gave by customers, and different elements are significant reasons for delay. What's more, they suggested for additional exploration on its belongings and moderation procedures to conquer the difficulties. In like manner, Amoatey *et al.* (2015) likewise led an exploration on the reasons for venture delays. The result of the analysis indicated that the main factors that causes project delay include late payment made to contractors, inflation/a hike in the price of materials, financier/clients given insufficient funds, and unstable financial/capital market. Venture defers have ominous outturn and they are potential reason for increment in absolute activities charge, surpassing in consummation time, prosecution, and customer's craving to cease a task. The above highlighted problems by previous researchers and current challenges in Niger State educational institution projects as outlined in the scope of the research are the motivating factors for this research work with aim of establish mitigation strategies to reduce the paucity of delays in Niger State educational institution projects with a view of achieving project performance.

1.3 Research Questions

The set back of postponement in the consummation span of development extends in instructive structures in Niger state brought up the accompanying issues.

- i. What are the causes of project delay in Niger state educational institution
- ii. What are the effects of project delay Niger state educational institution
- iii. What measures could be taken to minimize or eradicate delays in Niger state educational institution projects
- iv. How can projects be delivered in Niger state educational institutions without delay?

1.4 Aim & Objectives of the research

1.4.1 The aim of this research is to appraise the causes and effects of project delay on tertiary institutional development ventures with a view to improve project delivery performance

1.4.2 Objectives

1. To determine the relationship between the stakeholder's perception on the causes of delay in Niger State educational projects.
2. To establish mitigation strategic measures to minimize the effects and causes of delays on educational institution projects.
3. To examine the causes of project delay in Niger state educational institutions.
4. To identify and examine the effects of project delay in Niger state educational institutions.

1.5 Research hypothesis

Ho: There is no significant relationship between the causes and effects of project delays in Niger state educational institutions.

1.6 Justification of the research

Exertion of past inquires about led have focus on variables and impacts of deferral in development ventures(Abd-El-Razek, *et al*, 2008, Abedi *et al.*, 20011; Afshari 2010; Aibinu and jagboro 2006; Akinsiku and Akinsulire 2012; Akogbe and Zhou 2013; Ali *et al.*, 2010; Al- Karashi and Skitmore 2009; Anashari *et al.*, 2010;Eshfonier 2008; Hamza et al., 2018; Mahamid *et al.*, 2012; Mohammed and Isah 2012) with the exception of Tawil *et al.* (2013) that focused it concentrate on factors add to postpone on venture development in higher learning training. Along these lines, it is plainly appeared from the past investigations that circumstances and end results of postponement in higher foundation development ventures have not been done. Be that as it may, without known research on the circumstances and end results of development delay in Niger state instructive foundation.

Accordingly, this fills in as research hole for this examination. This was additionally as per the suggestion of Ameh and Ogundare (2013) that further research ought to be completed on deferral and impacts of postponement in tertiary organization in the nation.

1.7 Significance of the research gap

This examination gives bits of knowledge that uncover the components causes of delays in Niger State instructive organization ventures. It empowers venture conveyance association or firms to turn out to be increasingly learned of the circumstances and end results of undertaking delay, subsequently investigating ways that can limit ventures delays. With this the two contractual workers and customers will keep up efficiency and maintainability by distinguishing, obtaining and satisfactory execution gauges that forestall delays on development extends subsequently prompting improve venture conveyance. The exploration on instructive organization ventures add to the universe of information with respect to the commencement, arranging, execution and fulfillment of building ventures, since the past inquires about did not depend on instructive establishment ventures.

1.8 Scope of research

The examination work center around the circumstances and end results of venture delay in Niger state instructive establishments. Information's was gathered from the Works and Services Department of different organizations in Niger State. These organizations are Ibrahim Badamosi Babangida University Lapai, Niger State Polytechnic Zungeru, Niger State College of Education Minna, College of Agriculture Mokwa, and School of Nursing Bida

That the primary undertaking members in a commonplace development venture in Nigeria are the customer and his/her group of expert counselors (specialists) on one hand and the fundamental contractual worker, subcontractors and suppliers on the other hand..

The focused on bunch for this examination were experts, for example, Architects, Quantity Surveyors Builders, Engineers, Foreman, Contractors, Consultants, customer and so forth. It is legitimized by (Oladapo, 2007 and Radosaljevic and Bemert, 2012).

CHAPTER TWO

2.0

LITERATURE REVIEW

2.1 Construction Industry

Construction encompasses civil engineering, building projects and electrical and also the maintenance and repairs of existing facilities (Salleh, 2009). More so, Radosavljevic and Bennett (2012) characterized development as a progression of exercises embraced by development organizations that deliver or change structures a foundation. In this way, development essentially implies a demonstration of building or raising organized items to a readied shape utilizing proper assets and hardware.

Zakaria *et al* (2012) distinguished development industry as an area comprises of lodging, business and framework improvement. Harrison (2007) characterized development industry as the subdivision of production and exchange dependent on the structure, keeping up, and fixing structures. Building and development industry is the business of raising, breaking down, rebuilding, revamping, evolving, crushing, moving, keeping up or fixing any type of building built climate on or off site (Zakari *et al.*, 2012). The capacities that development has make it to be enormous, exuberant and troublesome industry division that assumes an indispensable job in the Nation's economy. Building houses, spots of works, markets, and places of adores; streets, and fixing and keeping up country's physical framework are a piece of the elements of development industry (Behm, 2008).

Accordingly, development industry is probably the greatest business that added to the financial development of countries. This announcement was legitimized by Mahamid *et al.* (2012) expressed that development industry is one of the business that gives significant fixings to the advancement of an economy. Salleh (2009) characterizes development industry as a subdivision of the economy that is liable for the arranging, structure, development, upkeep and in some cases destruction of structures.

The definition further expresses that it is fundamentally administration industry, which acquires its sources of info and yields from the subdivisions of economy that they are interrelated and between connected. Along these lines, taking a gander at the significance of development industry in the monetary advancement of countries, it gets important to consider the exercises of the business and furthermore to be especially watchful upon all the obstacles that will influence the yield and nature of the item offices.

2.2 The Construction Industry in Nigerian

Aibinu and Jagboro (2002) stated that the Nigerian construction industry remains the situation of involving a significant spot in the country's economy. In spite of that, the development business endured extreme impacts of deferrals. Oladinrin, *et al.* (2012) recognized that, the Nigerian development industry shows a significant part in the economy, and the exercises of the business are likewise imperative to the achievement of national financial improvement objectives of giving asylum, foundation and work. The impact of the advancement business to national money related advancement requires improved efficiency in the business by techniques for cost suitability and common sense, and would unquestionably contribute in reserve funds cost for the nation completely (Ademeso and Windapo, 2005). Development industry in Nigeria resembles some other development industry on the planet as far as the monetary development and furthermore in issues confronting. Moreover, plainly development exercises influence about each part of the economy and that the business is essential to the proceeded with development of the economy. Eshofonie, (2008) legitimizes that Nigeria resembles most creating nations where development industry assumes a prevailing job in the financial exercises of the nation.

2.3 Delays in Construction Projects

Delay is a term that being referred to as time and cost overwhelm in development ventures (Memon *et al.*, 2011). This definition is like Hamzah *et al.* (2012) as deferment is time and cost being developed endeavors. They communicated that delay is time overpowered or development of time for accomplishment of an errand. Advancement delay is the action or condition that aftermaths in finishing the undertaking later than agreed in the understanding. A delay can similarly impact to starting or finishing a specific development later than orchestrated (Mubarak, 2010). Regardless, the definitions above got time and cost anyway should be related to the one agreed in the understanding or in the source orchestrate. Menesi (2007) describes adventure delay as the amassed effect of the deferrals in the individual activities. Meaning of venture defer given here comes up short on certain terms. Planned expense and agreement starting period are the most significant terms that expected to be referenced, on the grounds that the variables of postpone influence cost and time first before whatever else in the development business. Among the key players of the business, contractual worker regularly turned into the prime casualty of defer factors for the way that temporary worker is answerable for all the demonstrations and exclusions of the contract based worker's representatives, subcontractors, their specialists and workers, and some other individual performing work under an agreement with the temporary worker (Frank, 2012). Upon all the examination directed, various recognitions on definitions were given to delay.

The definitions given for the most part think about the failure of the temporary worker to completed task as arranged. Al-Kharashi and Skitmore (2008) gave the definition as loss of yield and income in development ventures. This unmistakably incorporate cost overwhelm as the way Memon *et al.* (2011) and Hamzah, *et al.* (2012) characterized delay. As per the assembled definitions, delay in development venture is any circumstance that can prompt augmentation of planned undertaking

period or increment on at first planned expense of the task because of human or normal causes during structure and development forms.

2.4 Understanding the concept of delays in construction projects in Nigeria

Numerous examinations have endeavored to distinguish the causes that put development extends behind arranged calendar. For instance, Odeh and batttaineh, (2002) analyzed concede causes in building adventures in the US. Odeh and batttaineh, (2002) dissected concede causes in building adventures in the United Kingdom. Odeh and batttaineh, (2002) analyzed the purpose behind time and cost attack in high rise advancement reaches out in Indonesia; Odeh and batttaineh, (2002) inquire about concede cause in tremendous improvement stretches out in Jordan. The causes recognized included structure changes, poor work proficiency, and lacking orchestrating. Other than, past investigations demonstrated that deferrals can be brought about by proprietors, organizers/planners, temporary workers, or demonstrations of God. Be that as it may, most investigations concentrated predominantly on distinguishing defer cause in the development stage, once in a while accentuating on the arranging and configuration stages. Kaming *et al.* (1997) who assessed defer causes in building development ventures, inferred that numerous postpones show during all task stages and essentially happen during the development stage; be that as it may, defers that start in the structure stages incorporate lacking calendar control by innovations in to a plan, and incapable coordination as well as consideration of undertakings client gatherings. Odeh and batttaineh, (2002) recognized variables toward the beginning of undertaking that in all likelihood lead to extend u delays and gave understanding into the motivations to the deferrals in Thailand. They found that the issues looked by the improvement business in making financial like

Thailand could be:

- a) Shortage of insufficiencies in industry foundation (mostly flexibility of assets);
- b) Caused by contractual worker's ineptitude/deficiencies. They suggested that there ought to be purposeful exertion by economy supervisors and development industry relationship to give the fundamental framework to proficient task the board.
- c) Caused by customer and specialist and Chan and Kumaraswamy (2008) conducted a survey to determine and evaluate the relative importance of the significant factors causing delays in Hong Kong construction projects. They analyzed and ranked main reasons for delays and classified them into two groups:
 - a. The role of the parties in the local construction industry (i.e. whether client, consultants or contractors) and
 - b. The type of projects.

Results indicated the five major causes of delays were; poor site management and supervision, unforeseen ground condition, low speed as decision making involving all project teams, client initiated variations and necessary variation of works. Odeyinka and Yusuf, (1997) have addressed the causes of delays in building projects in Nigeria. They classified the causes of delay as project participants and extraneous factors. Client-related delays included variation in orders, slow decision-making and cash flow problems. Contractor-related delays identified were: financial

2.5 Types of Delays In Construction Projects Delivery

There are several types of construction delay due to their causes. They may be caused by the There are a few kinds of development delay because of their causes. They might be brought about by the contractual worker, customer, and customer's agent and from regular source. Aibinu and Jagboro, (2002) examined that deferrals are characterized into understandable and non-passable

postponements. Reasonable deferrals are sub separated into forgivable with pay and passable without remuneration dependent on their happenings.

Be that as it may, as per Yates and Epstein, (2006) deferrals can be arranged into four (4) principle bunches as non-compensable reasonable, compensable forgivable, non-understandable and simultaneous postponements. Be that as it may, since three decades back, delay was ordered into three (3) bunches as indicated by obligation; compensable, understandable and non- forgivable deferrals (Kraiem and Diekmann, 1987 and Hamzah *et al.*, 2012). These three (3) gatherings of postponement were affirmed by (Dayi, 2010). Along these lines, this exploration centers around the four (4) classification of postponement in particular; forgivable compensable, reasonable non-compensable, non-passable and simultaneous deferrals (Yates and Epstein 2006).

2.5.1 Excusable Delays

Reasonable postponements are defers that the contractual worker won't be punished because of their events. It very well may be isolated into compensable and non-compensable (Tawil *et al.*, 2012). Along these lines, reasonable postpones basically imply that they are the kind of defers which are outside the ability to control of the contractual worker or subcontractors. In the event that it occurs, the harms it caused ought to be on the proprietor or none of them liable for the reason, and right now extensive time be given to the temporary worker to finish the venture. This circumstance is known as "time everywhere" (Hackett *et al.*, 2007).

2.5.2 Excusable Delays with Compensation

Compensable forgivable postponements are those defers that brought about by customer (Yates and Epstein, 2006). It brings about time expansion and remuneration to the temporary worker. These postpones result from different conditions as expressed by (Yates and Epstein, 2006). The first is the failure of the proprietor to give work site in time, which causes venture delay. Changes which were

started by the proprietor and proprietor's deferral in conveying request to proceed with work additionally subject the undertaking to run in to delay.

Flawed plans, poor coordination of other contractual worker's work by the proprietor and proprietor's powerlessness to flexibly hardware in time were likewise kinds of conditions that cause forgivable deferral with remuneration. Deceiving of temporary worker because of the data of the proprietor, obstruction of proprietor with the presentation of the contractual worker, delay in the endorsement of shop drawings are among the circumstances that lead to forgivable deferrals with compensation. Others are changes in the contract requirements and the encountering of different site condition by the contractor (Yates and Epstein, 2006). Excusable delays with compensation at times brings about extension and results to the owner financial damages to the contractor (Aibinu and Jagboro, 2002). Therefore, this type of delay will affect the client funding budget because the contractor can claim for damages for all the causes emerged from the side of the client or his representatives.

2.5.3 Excusable Delays without Compensation

Passable postponements without pay are defers that are not the brought about by the customer or the contractual worker. They are "Demonstrations of God" or other unforeseeable causes outside the ability to control of the two gatherings (Hackett, *et al.* 2007 and Yates and Epstein, 2006). Agreements typically contain a provision called the power majeure statement, which specifies the different reasons for delays for which neither one of the parties is genuinely mindful.

2.5.4 Non excusable Delays

Non excusable Delays can be credited to the exercises, or inactions, of the authoritative laborer. Right when a brief specialist makes concedes the completing of an endeavor, such delays obstruct the authoritative laborer from procuring a period development and may similarly trigger defer hurts against the legally binding specialist. Some of logically essential authoritative laborer caused delays

as referenced by Muhamad, (2010) fuse disillusionment of transitory specialist to set up the site and start the work in an advantageous manner. It fuses similarly delay in the settlement of shop drawings to the owner for support, lacking improvement gear and broken works.

Others shows consolidate roaming from the understanding point of interest, work, material, and various resources the board deficiencies during improvement, insufficiency of coordination of tradesmen and subcontractors and powerlessness to execute various sections of the work in an ideal manner. Even more thusly, client can ensure hurts if it had been trapped in the understanding comprehension (Muhamad, 2010). In this way, temporary worker is subject to pay harms to the customer right now delays. It is imperative to note here that contractual worker is to take a gander at all the conceivable outcomes of dodging the deferrals for him to accomplish a significant edge toward the finish of the undertaking execution.

2.5.5 Concurrent Delays

On a run of the mill development venture, delays don't continually can be categorized as one of the three past classifications talked about yet frequently there are different elements that cause or add to delays (Yates and Epstein, 2006). In this manner, Ibbs, *et al.* (2011) characterized simultaneous deferrals as normally marked as at least two postpones that occur simultaneously, both of which would cause a venture delay.

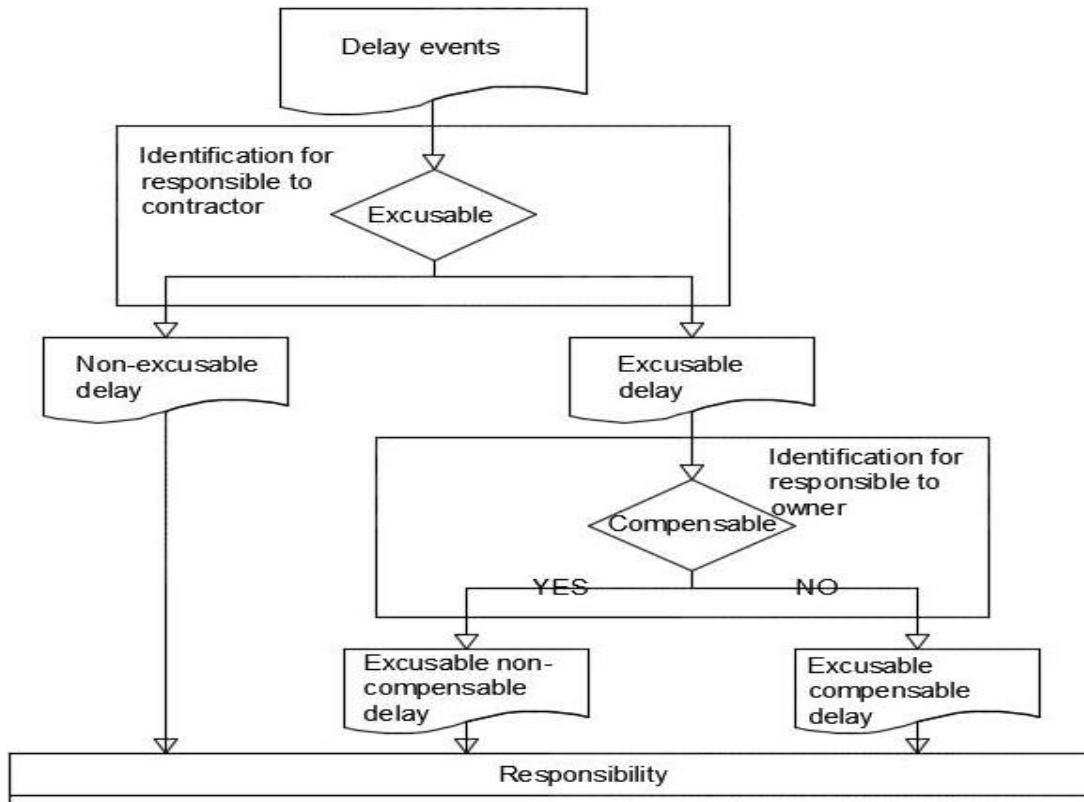




Figure 2. 1: Classification of delay

(Source: Dayi, 2011)

Furthermore, Masrom (2007) describes concurrent delay as the occurrence of non acceptable and acceptable compensable types of delay. From the above definitions given by the scholars, it is conformed to the statement of Dayi (2011) which says, it is the different categories of delays which seems like a simple issue and still there is no clear definition of concurrent delays.

2.6 Delay factors in Construction Projects

Delay in development is related with three primary driver (Hackett *et al.*, 2007). Ren *et al.* (2008) characterized delay into three (3), in particular deferral brought about by temporary worker, manager or his agents and those by occasions that are out of both the contractual worker and businesses and it is named as 'demonstration of God'.

Financing by temporary worker during development, delays in temporary worker's installment by proprietor, structure changes by proprietor or his specialist during development, fractional installments during development, and non-usage of expert development/legally binding administration go about as the most widely recognized reasons for delay in development ventures (Abd El-Razek,*et al*, 2008).

Ali *et al.* (2010) deduced in their exploration that work deficiency, temporary workers' money related challenges, development botches and imperfect works were the most widely recognized reasons for

delay. Besides, the exploration referenced the impacts of postponements on development industry as cost overwhelm, expansion of time, late installment, rescheduling, influence organization notoriety and loss of profitability and effectiveness. The outcome shows that cost overwhelm and expansion of time effect sly affect temporary worker. Be that as it may, the contractual worker notoriety didn't fall in to one of the regular consequences for temporary worker in the examination, in spite of its bit of leeway.

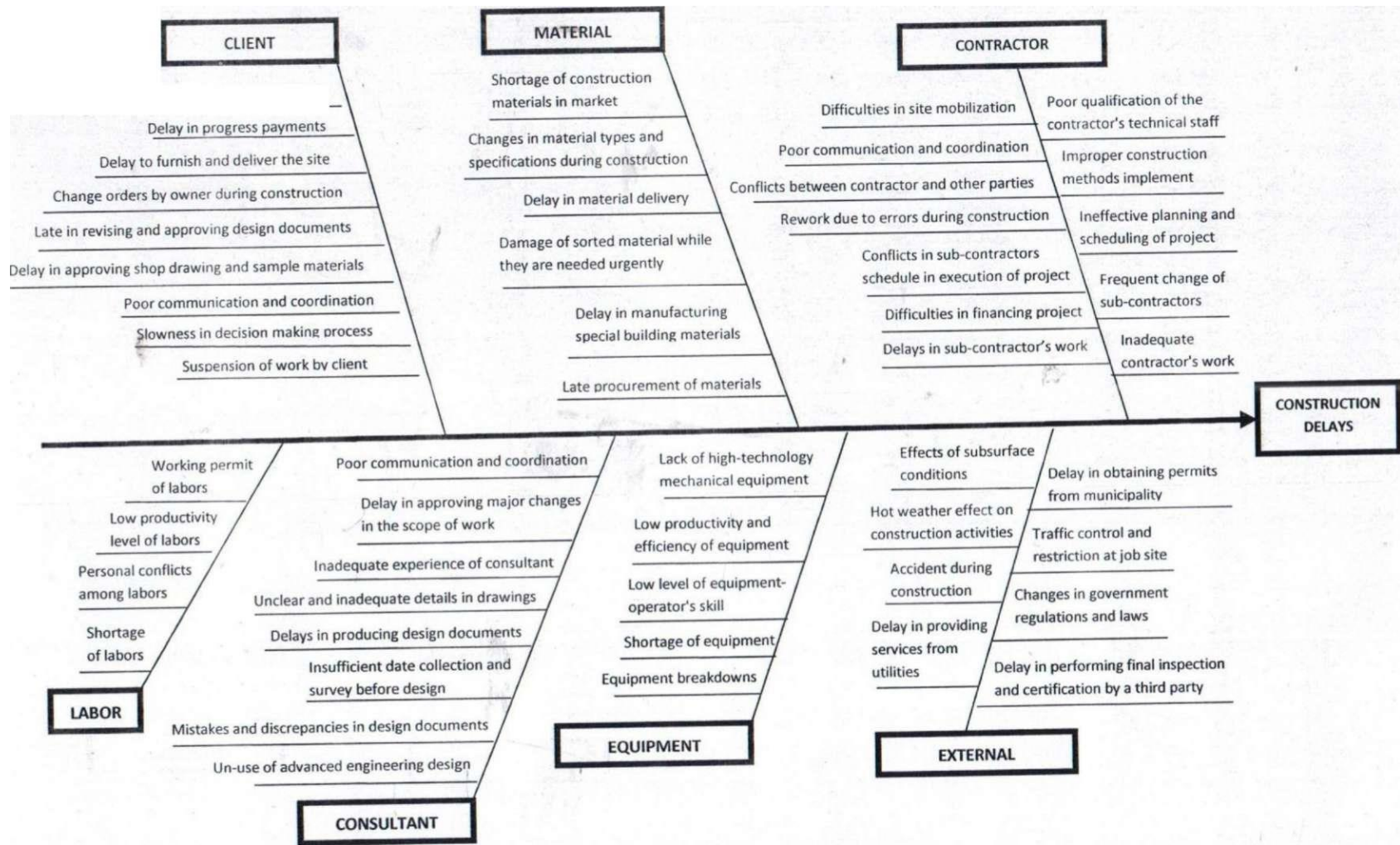


Figure 2.1: Fishbone diagram of factors that contributed to the causes of delays in construction projects (Amoatey *et al.*, 2015)

2.7 Contractor-related Delay Factors in Construction Projects

Ren *et al.* (2008) led an exploration on the main drivers of development venture delays and reasons that, improper association the executives, absence of specialized proficient in the association, unsmooth outside and inside correspondences, absence of coordination with sub contractual worker, postpone preparation, uncouth temporary worker staff, lack of common sense and planning and clogged building site. Abd Rasak *et al.* (2008) researched on reasons for delay in building development venture and presumes that the most noteworthy temporary worker related elements are, financing by contractual worker, slow conveyance of materials, arrangement of drawings and test, absence of information base in evaluating action length and assets, lack of materials, untalented administrator, poor hardware profitability, deficiency in gear, and mishap during development.

Salleh, (2009) characterized contactor as the individual or association that is liable for arranging and execution of development venture. In this manner, contractual worker related postponements are the most significant deferrals in the development business. This announcement was advocated by Gunduz *et al.* (2013). They said that temporary worker related gathering of defer factors was the most huge gathering to cause delays. Underneath shows the contractual worker related reasons for postpones factors.

Be that as it may, Toor and Ogunlana, (2008) directed an exploration on issue causing delays in significant development venture and thought of the most huge temporary worker related factors as, absence of skilled sub contractual worker providers, absence of essential hardware, apparatuses and mechanization accessible for venture, absence of temporary workers experience and command over task, poor productivity chief and foremen, utilizing out of date innovation, temporary workers monetary troubles, improper development techniques and need great connection with customer/expert. Sewis *et al.* (2008) did explore on delays being developed expands and revealed

that, nonattendance of authoritative laborers staff, absence of specialists, insufficient coordination among parties by transitory specialist, delay in activation, wellbeing rules and guideline rehearses in the association, awkward specialized staff, uncouth specialized investigation by the temporary worker during the offering stage, lack of foresight and planning, ineffectual quality control, utilization of un satisfactory development procedures, monetary troubles and postponement in installment to subcontractors. Tumi *et al.* (2013) completed examination on reasons for delay in development industry and presumes that, ill-advised arranging and lack of supply, income issue during development, deficient experience, site mishap, carelessness, late conveyances materials and equipment's, botch by the contractual worker, arrangement during development, botch during development, struggle in work calendars and debate and deficiency of materials. Mohammed and Kishk, (2010) did explore on the elements and impacts of postponement in government development venture and reasons that, late conveyance of materials, slow activation of work, deficiency of talented work, work efficiency, work supply, truancy and strike, low inspiration, lacking quantities of hardware, gear assignment issue, problematic subcontractor, unseemly development techniques, deficient contractual worker experience, temporary workers money related challenges and mistaken site examination. Ayudhya (2011) additionally did assessment of regular defer reasons for development extends and presumes that, erroneous bill of amounts, failure of temporary worker to sublet the agreement during offering, disregarding states of the agreement, ineffectively composed agreement, contractual worker budgetary issue, swelling and conversion scale, precision of venture quote, change in materials cost and work during development, absence of gifted work and architects, inadequacies of association and low quality of finished works. Mehdi Riazi *et al.* (2011) carried out the utilization of flexibly bind the board to decrease delay and uncovered that, the utilization of gracefully tie the executives to lessen delays, Malaysian open division and development venture. Memon *et al.* (2011) drove look at on starter focus on causative

components inciting advancement attack and presumes that, nonappearance of experience by the authoritative worker, late conveyance of materials, connection among the executives and work, poor site the board, botch during development, money and budgetary troubles control nearby, delay in material acquirement, improve, deficiency of laborers and uncouth sub-temporary worker. Ali *et al.* (2010) and uncovered that work deficiency, contractual worker's money related challenges, development botch and flawed works, coordination issues, material lack, poor site the executives, gear and instrument deficiency, cost and time overwhelm, late installment, rescheduling and lost of profitability and productivity.

Besides, Hamza *et al.* (2012) did recognizable proof of the reasons for development delay and uncovered that, political circumstance, division of the west bank, Award task to least offer value, progress installment delay by the proprietor and lack of hardware. Akogbe *et al.* (2013) explored the significance of and positioning assessment of defer factors for advancement development extends and infers that the main components of contractual worker related variables are, budgetary ineptitude, money related challenges of the proprietor, horrible showing by subcontractor, material acquirement, changes in drawing, insufficient arranging and planning, slow examination of finished works, gear accessibility, arrangement and endorsement of drawing and tolerating lacking structure. Mahmid (2012) additionally completed research on reasons for delay in street development venture and found the accompanying as division of West Bank and obliged advancement between domains, political situation, progress portion delay by the owner, nonattendance of equipment adequacy, inconveniences in financing adventure by transitory laborer, workforce conflicts among works, poor correspondence by specialist, strife among temporary worker and different gatherings, grant task to most minimal offer cost and irrational undertaking time span by the proprietor.

The writing accessible spreads one many years of period, going from 2008 - 2018. Alwi and Hampson, (2003) distinguished twelve (12) temporary worker related reasons for delay in their

writing. The consequence of their examination demonstrates that absence of exchange aptitudes gradualness deciding, plan changes, and deferral in the conveyance of materials to site were fundamentally causes delay in development because of contractual worker slip by. In any case, the examination didn't contact the impacts of the deferral on the key players in the development business, which contractual worker is one of them.

What's more, Abd El-Razek, *et al.* (2008) led an examination in Egypt. The examination distinguished financing by the temporary worker, proprietors delay in installment; changes during development by the proprietor, halfway installment and non-use of expert authoritative administration were the most noteworthy components that caused delay. Out of these variables, financing by the temporary worker and non-usage of expert development the executives were identified with contractual worker. The outcome takes after Ren *et al.* (2008), where it shows that financing venture by the temporary worker is among the noteworthy factor that causes delay. Interestingly, Toor and Ogunlana (2008) recognized absence of

Another exploration leading by Ren, *et al.* (2008) expressed different variables of deferral brought about by the temporary worker. The discoveries of the exploration uncovered that getting ready technique explanation, financing venture by temporary worker, hierarchical outline, and correspondences (both inside and remotely) and botches during development caused delay from the contractual worker side. These most huge factors in the exploration most have consequences for the temporary worker. Since the postpone that rises up out of the contractual worker site is among the non-forgivable deferrals.

Institutionalization of configuration, absence of temporary worker experience, absence of skillful subcontractors and unreasonable task plan were the most huge variables. The examination recognized temporary worker monetary troubles as less huge. This might be because of geological areas where the inquires about were directed. Be that as it may, Sweis *et al.* (2008) affirmed that

lack of foresight and planning, money related challenges by the temporary worker were the most huge reasons for defer that are identified with contractual worker. Improper arranging and absence of powerful correspondence were the most noteworthy elements that caused delay in development venture identified with temporary worker as expressed by (Tumi *et al.*, 2009). However, on account of (Motaleb and Kishk, 2010), it was forming that late conveyance of materials, slow activation of work, deficiency of gifted work, work profitability and work gracefully were reasons for postpone that identified with contractual worker. Others are truancy, low inspiration, lacking hardware and their appropriate assignment, deficient standard gear, questionable sub-contractual workers and unseemly development techniques. Lacking temporary worker, contractual worker budgetary challenges and off base site examination were likewise contract based worker related reasons for delay. Nonetheless, the discoveries of the examination uncovered that change orders and unfit customer's agent were the most noteworthy components that cause delay. These are customer and the agent related reasons for delay.

The examination directed by Ayudhya (2011) communicated that standard brief specialist cash related issues is one of the colossal purposes behind deferral in Singapore. Be that as it may, in Malaysian

development industry, it was expressed that need temporary worker experience, late conveyance of materials and connection among work and the board were the huge components (Memon *et al.*, 2011).

Ali *et al.* (2010) delineated seven temporary worker related reasons for delay in Malaysia as work deficiency, budgetary challenges, botches, coordination issue, materials lack, poor site the executives and lack of hardware. They likewise diagram impacts of deferral as cost and time invade, late installment, rescheduling, influences organization notoriety, and low profitability and productivity.

In this way, taking a gander at all the postpone factors and their causes, conversation on the impacts of deferral isn't sufficient. All the more along these lines, the exploration led, which

examines the impacts of postponement on temporary worker in the development business is constrained.

2.8 Effects of Delay Factors

In light of the exploration directed by Mehdi Riazi and Lamari (2013) it recognizes time allotment expansion, increment in cost due the augmentation of time, government intermittent spending plan and plan execution, and cost overwhelm as impacts of postponements in development ventures. Besides, they said the notoriety is consistently in question in defer cases and the administration dangers losing open certainty, likewise the discouraging condition is dependent upon suit and intervention. Mehdi Riazi *et al.* (2011) expressed in their exploration that deferrals have genuine impact on development associations, which results to increment in cost of the undertaking, loss of chance cost, harm in notoriety, mediation, prosecution and even to the more regrettable circumstance of deserting of the task. Be that as it may, researchers worried on the impacts of deferrals on development association as a rule, however there is have to take a gander at the consequences for the notoriety of the associations since notoriety is an immaterial resource and it influences future business.

Postponement in fulfillment of ventures incorporates an expanded overheads and loss of chance of taking on other benefit gaining ventures with the assets secured on the deferred venture (Ndekugri *et al.*, 2008). Likewise, the postponement has impact on the development extends through the partner's, for example, contractual workers, customers and experts. Consequently, contractual worker is one of the partner and key members in development venture execution. Notoriety of the contractual worker is critical to be inspected and kept up. Therefore, Haseeb *et al.* (2011) referenced over expense and time, questions, arrangements, claims, case and surrender were the impacts of deferral. Cost invade, augmentation of time, late installment, rescheduling and loss of profitability and effectiveness were the impacts of postponement in development industry (Ali *et al.* 2010). The

examination expressed that rescheduling as one of the impacts of postpone influence organization notoriety. Tawil, *et al.* (2012) referenced seven impacts of postponement. Increment to unsettling influence of work, loss of profitability and late finishing of undertaking were the impacts with most noteworthy position. Others are increment in time related cost, outsider cases, relinquishment of agreement and end of agreement. Despite the fact that the impact of postponements in the development business has gone round everywhere throughout the creating nations on the planet.

Past inquires about affirmed different impacts of postponement in development industry. Cost invade, time overwhelm, questions, mediation, case and absolute surrender were the impacts of postponement in development industry (Motaleb and Kishk 2010; Abedi, *et al.*, 2011 and Mehdi Riazi *et al.*, 2011). Also, Mehdi Riazi *et al.* (2011) referenced that, loss of chance expense and notoriety harm was the impacts of deferral in development industry. Ashnaari *et al.* (2010) led an examination and affirmed that expanded debates and costs, loss of yields, make social issues, influences social and monetary conditions in the undertaking is being fabricated were impacts of deferral. In spite of the fact that Alnuaimi *et al.* (2010) expressed referenced impacts of postponement as time invade, claims and questions, cost overwhelms, influence the presentation and lesson of work and extra expenses because of varieties.

2.9 Delay factors in the Nigerian Construction Industry

Components answerable for development postpones differed into numerous points of view and approaches.

As indicated by Mohammed and Isah, (2012) postpone factors in the Nigerian development industry especially temporary worker's connected are ill-advised arranging, absence of successful correspondence, , deficiency of supply like steel, budgetary issues, lack of material, income issues during development, increment in amounts and bungle by the contract based worker, clashes in

work timetables of subcontractors, contractual workers respected legally binding connections, site mishaps, carelessness, late conveyances of materials and gear, exchanged harm and questions.

Budgetary troubles looked by the temporary workers, inability to pay for finished works, deficiencies of assets, accelerations of material costs, late conveyance of materials, variances in assets cost, poor agreement the board, asset the board issues, insufficient contractual worker's understanding, absence of correspondence, mistaken site investigation, "most reduced offer successes" framework, work questions and strikes, poor specialized execution/workmanship, subcontracting frameworks (Akinsiku and Akinsulire, 2012).

Aibinu and Odeyinka, (2006) recorded 44 reasons for delay from their writing survey which structure part the poll they conveyed. They utilized concordance examination to see the prioritization of these components. Be that as it may, they utilized chi-square to test the organized time affecting component in development ventures. By relating the Pareto standard to examine the circulation example of the postpone factors, the work has had the option to watch old and continuous issue from a crisp edge. It has additionally conveyed some sign of the contribution of 44 defer elements to in general task delays. The aftereffect of Pareto examination built up the reliant idea of building exercises and jobs. The exploration said that, debates may emerge from questions identifying with causal elements, contract understanding, and quantum of the cases. Consequently, delays speak to a territory of spillages in the development business. In Nigeria, the issue of deferrals is more, particularly when one thinks about the present financial state of the nation (Sunjika and Jacob, 2013)

In another viewpoint, Sunjka and Jacob (2013) conveyed an examination on the reasons for delay in Nigerian development industry, they referenced poor coordination of subcontractors, unseemly development strategies, lacking arranging, deficient experience, botches during development organize, uncouth site the board, wrong selection of brokers, untalented site labor, inappropriate

gear choice and flawed hardware, work debates, low quality materials and material deficiencies as defer factors identified with temporary worker. Consequently, it is essential to additionally explore on the impacts of deferral on contractual worker notoriety in the Nigerian development industry.

2.10 Consequences of Construction Delay in the Nigerian Construction Industry

According to Akinsiku and Akinsulire (2012) effects of delay are always unbearable on construction projects. They additionally expressed that the impacts are cost and time invades, intrigue amassing on cash-flow to fund, wastage and under-use of labor assets and cases. It further expressed that under-use of gear, loss of certainty on the agreement (in this manner risking the notoriety of contractual worker on account of future offering possibilities) and late returns of salary are impacts of deferral. Among the impacts likewise incorporate decrease of business openings, question between parties included, guides the lessening in the rhythm of monetary exercises in the country, extra protection charges, extra duties and duty because of postponement.

Aibinu and Jagboro (2002) directed an examination on impacts of development delay on venture conveyance and found the followings as impacts, for example, time overwhelm, cost invade, question, mediation, case and all out deserting. Likewise Olushegun and Michael (2011) examined Nonetheless, Akinsiku and Akinsulere (2012) directed an examination on partners impression of the circumstances and end results of development delay on venture conveyance and infers that, cost and time overwhelms intrigue gathering on funding to back, wastage and underutilization of labor assets, claims, underutilization of hardware, lost of certainty on the agreement, late returns of salary, decrease of work openings, question between parties included, guides the lessening in the rhythm of financial exercises in the country, extra protection charges, extra expenses and because of deferral and intervention/suit and all out abandonments. Likewise Mohammed and Isah (2012) led investigate on reasons for delay in Nigeria development industry and uncovered that , inappropriate arranging, absence of compelling correspondence, plan blunders, deficiency of supply

like steel, slow dynamic, account issues, lack of material, income issue during development, increment in amounts and bungle by the contractual worker, loss of enthusiasm by the partners, boycott by specialists, misuse of cash and time and declination of notoriety. further more, Sujka and Jacob (2013) did inquire about on huge circumstances and end results of undertaking delay in the Niger delta area and reasons that, time overwhelm and spending invade, questions and claims are the significant impacts of venture delays.

Others incorporate indebtedness of the temporary worker, failure to satisfy the living guideline, intervention/prosecution and all out abandonments as impacts of postponements in Nigerian development industry.

Ibironke *et al.* (2013) led an exploration titled as "examination of non-passable postpone factors impacting temporary worker's presentation in Lagos state, Nigeria". The examination expresses that, the Nigerian development industry has gained notoriety for adapting to delays. Thusly, it is altogether evident that defer influences the contractual workers' presentation just as their notoriety in the development business.

CHAPTER THREE

3.0

RESEARCH METHODOLOGY

3.1 Research Design

This examination work concentrated on significant causes and outcomes of deferral on tertiary institutional development extends in Niger State. This part traces the examination philosophy that was received to guarantee the unwavering quality and appropriate comprehension of this exploration. These incorporate research configuration, examine populace, testing casing, and inspecting size, testing systems, technique for information assortment and strategy for information investigation. The point by point of clarification of every unit was given to help comprehension of the system for accomplishing the point and goals. The examination program were presented in Figure 3.1 below

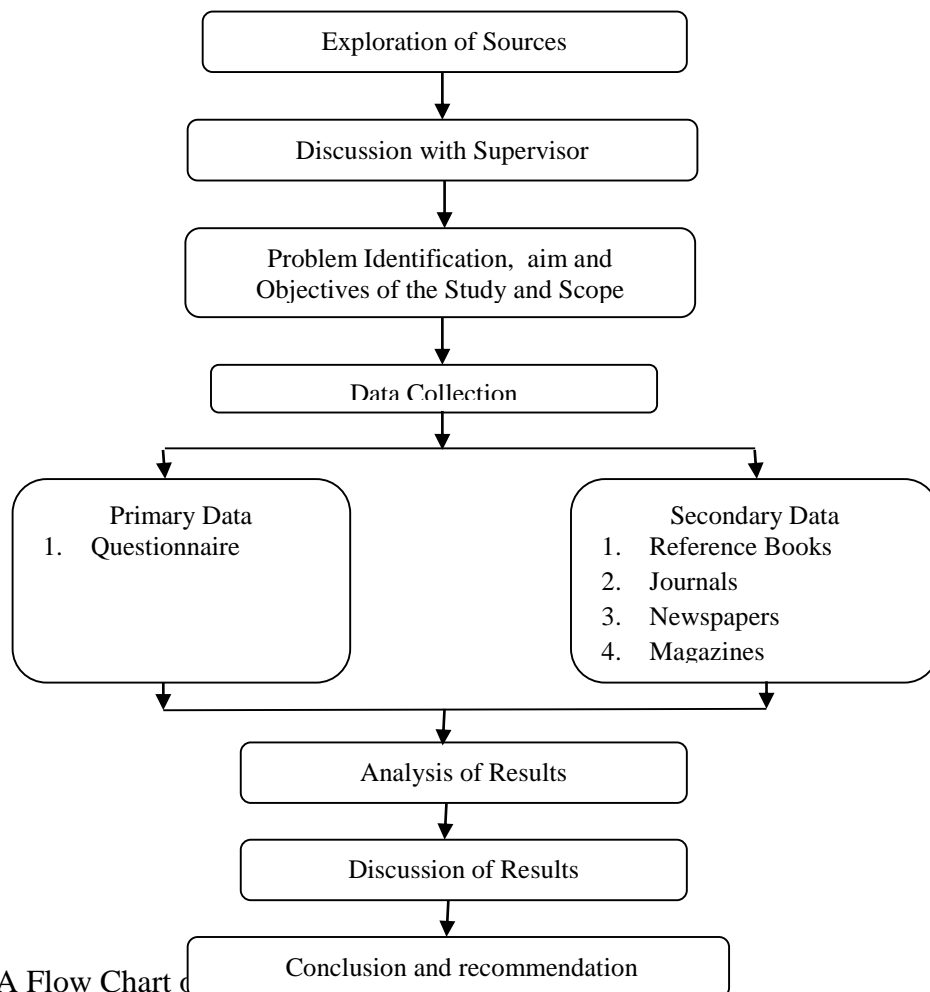


Figure 3.1: A Flow Chart of

Research design is a plan and structure adopted to investigate and obtain solution to research questions, depending on the problems or questions addressed (Creswell, 2003).

The choice of proper research configuration considered the time measurement, and control of the factors, and the level of sign of the issues (Creswell and Tashakkori, 2007). Research configuration is the diagram of research that manage in any event four issues; what inquiries to contemplate; which information are applicable; what information to gather; and how to dissect the outcome (Yin, 1994). Research configuration contains testing methods, recognizable proof of populace, poll structure or instrument and information assortment.

The review look into right now an exploration approach where one gathers information from all or some portion of the populace to survey the relative frequency, conveyance and interrelation of normally happening factors (Hafner, 1998; Powell and Silipigni, 2004).

Nonetheless, for the smooth direct of this exploration, the examination configuration received for this investigation was study inquire about methodology. The decision of the review strategy was because of the intricacy, broadening and fracture of Nigeria development industry.

3.2 Research populace

Populace is an assortment of components about which we wish to make a derivation this alludes to a lot of every single imaginable instance of enthusiasm for a given research action, it is an assortment of articles or people whose properties are to be broke down, it could be ordered into limited populace (when the component of the populace could be genuinely recorded) and interminable populace (when the component of the populace couldn't be truly recorded) (Rasaq and Ajayi,2000).

In any case, the focused on populace for this exploration work comprise of the experts in the Works and Services Department in Niger State Tertiary Institutions, Niger State Ministry of Works, Transport and Housing, Niger State Housing Cooperation, Ministry of Environment, Consultant

Firms and Contractor's Firms in Niger State. These specialists are Quantity Surveyors, Architects, Builders, Engineers, Contractors, Client, Project Manager and Construction Manager. The hard and fast masses of this investigation work was 150 number of specialists in the above recorded affiliations. Though, only 135 number of specialists respond appropriately which address 90% of the Questionnaires used for the assessment.

3.3 The Research Sampling Technique

The testing method is the methodology embraced for the choice of an example from the populace. The objective of each assessing approach is to have a model that addresses the characteristics of the masses especially the advancement affiliations that are spread wherever all through the country. Moore and McCabe (2005) expressed that reviewing technique is the consistent strategy for picking those testing units that gives the fundamental appraisals related edges of weakness rising up out of investigating only a segment not the aggregate.

As such, this assessment work grasped comfort reviewing procedure by virtue of its effortlessness of accessibility and increasingly moderate. Toward the day's end, the specialists, counsels and legally binding laborers that are accessible are used which satisfied this assessment. Solace looking at is in any case called inadvertent investigating this is basically done by getting what you need where you can get it successfully and use it (Davies, 2007). Regardless, favorable examining strategy is exceptionally thorough and steady method. This strategy chose the most helpful items and time, exertion and cash is being considered right now (and Ross, 2010).

3.4 Sampling Frame

Sampling frame is the list containing the records of members of population of the study and from which samples can be drawn (Morenikeji, 2006). A sample is a collection of sampling units drawn from frame. Sample means a part of whole population which is drawn to show what the rest is like

(Naoum, 2007). The sampling frame for this study constitutes of contractors and consultants and other relevant professionals involved in building construction projects in Niger State.

3.5 Method of Data Collection

The data collection is the most critical part of the study, since the accuracy of the data is related to the success or failure of the research. The data for this research was obtained through questionnaires that was designed to access the causes and effects of construction project delay on tertiary institutional projects and mitigation measures to overcome the challenges of delay factors.

3.6 Research Instrument

The research instrument adopted for this research was questionnaire. The questionnaire was structure in two part. The first part contains demographic profiles of the respondents and the second part contains the technical aspects of research objectives and questions.

3.6.1 The questionnaire design

The questionnaire was designed in a closed ended format based on the research objectives and research questions. The choice of the questionnaire design scale was based on quantitative research approach adopted in this study. The survey was planned in five (5) point Likert scales so as to give the chance to the respondents to show their degree of commitment, and fulfillment with proclamations made by methods for ordinal scale. This was in accordance with Oppenheim (1992) idea that the unwavering quality of the five (5) point scale is acceptable and permits high scope of answers to respondents contrasted with littler point scale. The sorts scale received in this exploration are: [5= exceptionally high, 4= high, 3= somewhat high, 2= low and 1=very low]. All through planning poll, endeavors were made to guarantee the essential research question have secured all zones of intrigue. For instance, the main area looked for data on the segment profile of the respondents, and these are scholarly capability, kind of calling, long periods of working

experience, the limit of respondent's association in the tasks and so on. The subsequent segment looked for data on the specialized part of the exploration. These are factors causes delay in tertiary institutional activities, the impacts of postponements and alleviation measures to conquer the difficulties of defer factors in tertiary institutional undertakings.

3.7 Pilot Survey

The pilot overview was directed in the readiness of this exploration work. The pilot study approved the exploration strategy and research approach received. It gave a preliminary rush to the survey which includes testing the procedure before it was utilized to gather the information. The pilot review furnished the analyst with the see of the sort of reactions that was envisioned and decides the ideal period of time in noting the survey. It assisted with refining the information assortment plans regarding both substance and the strategy that will follow. A sum of 30 respondents was utilized for the pilot study. The reactions of the inquiries and the different remarks were utilized to improve the last overview instrument. Be that as it may, just the outcomes from the last fundamental review are introduced right now.

3.8 Method of Data Analyses

The Statistical Package for Social Scientist (IBM SPSS) adaptation 22 was the product utilized in information examination. The strategy for information investigation received for this examination work instigated graphic investigation, relative significant list (RII) and connection investigation. The elucidating investigation was utilized to analyze the reasons for postponed installment in building ventures and furthermore used to distinguish the measures for alleviating deferred installment in building ventures. While relative significant file was to analyze the impacts of deferred installment in building ventures. Furthermore, the connection investigation was utilized to build up the connection between deferred installment and genuine finishing period.

3.8.1 Descriptive analysis

The descriptive method of analysis was adopted to summarise the sample, rather than use data to learn about the population and sample. It was also used to summarise transactions contained in the data set, that either represent the entire population or sample (Creswell and Tashskori, 2007). The descriptive method of analysis was adopted to use the mean score to rank the opinion of the respondents.

3.8.2 The Mean Item Score

The descriptive statistic is the arithmetic mean (\bar{X}). This is used to calculate the average of a series of observations of a continuous variable. Given that a sample consists of several observations X_1, \dots, X_n , then

the mean is calculated as: $\bar{X} = \frac{\sum x}{N}$ Where x = the opinion of the respondents and N is the total number of respondents.

The mean score was used to rank the causes of delayed payment in building projects. It was also used rank the mitigation measures to reduce delayed payment in building projects.

Table 3.1: Decision Rule for Mean Ranking

SCALE	MEAN SCORE	Decision/ Remark
5	4.50 to 5.00	Very High
4	3.50 to 4.49	High
3	2.50 to 3.49	Slightly High
2	1.50 to 2.49	Low
1	0.00 to 1.49	None

Source: Morenikeji (2006)

CH34APTER FOUR

4.0 RESULTS ANALYSIS AND DISCUSSION

4.1 Data Presentation

This chapter covers presentation of results of the analysis. The analysis was based on the objectives of the study. The personal data of the respondents were analyzed as well as their responses with a view of achieving the aim of the study.

4.1.1 Demographical Survey

This section primarily described the information or background of respondents in relation to the type of organization, years of organisation in construction works, position of respondent in the firm, years of their working experience, and respondent's' academic qualification and professional bodies of the respondents.

4.2 Nature of organisation

Figure 4.2 shows that 34% of respondents worked with construction firms 26% were with consulting firms while 40% were from client organisations.

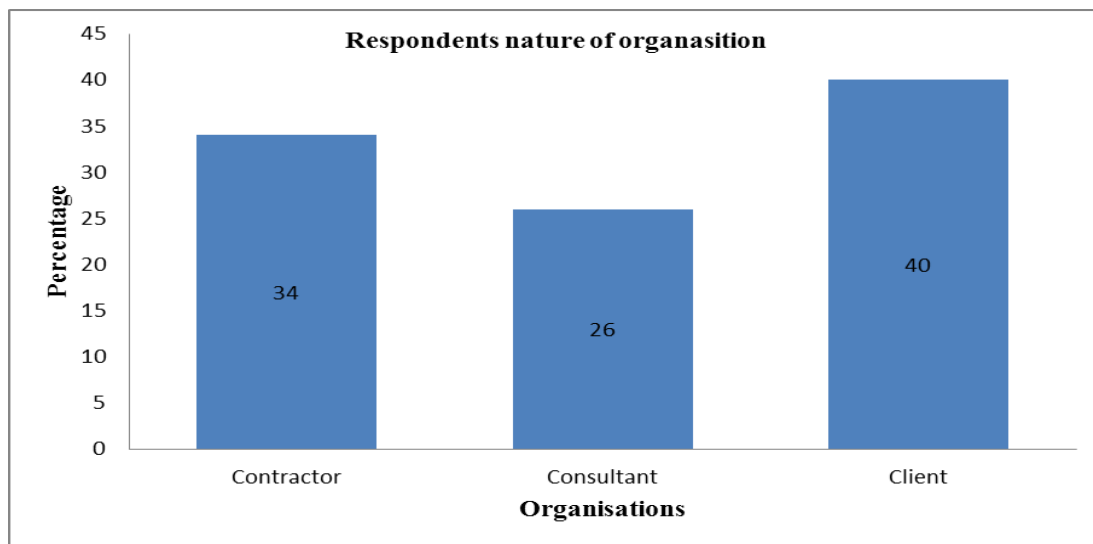


Figure: 4.2 Respondents' nature of organisation. Field Work (2019)

4.2.1 Respondents position in the organisation

Figure 4.2.1 indicates that 11% numbers of respondents sampled for the study were Architects in their respective organisations, 26% were Quantity Surveyors, while 18% 24% and 21% held positions of Project Managers, Contractor and Civil Engineers respectively

Inferences drawn from this was that the respondents sampled are knowledgeable enough to comprehend the contents of the questionnaires, thus providing suitable responses.

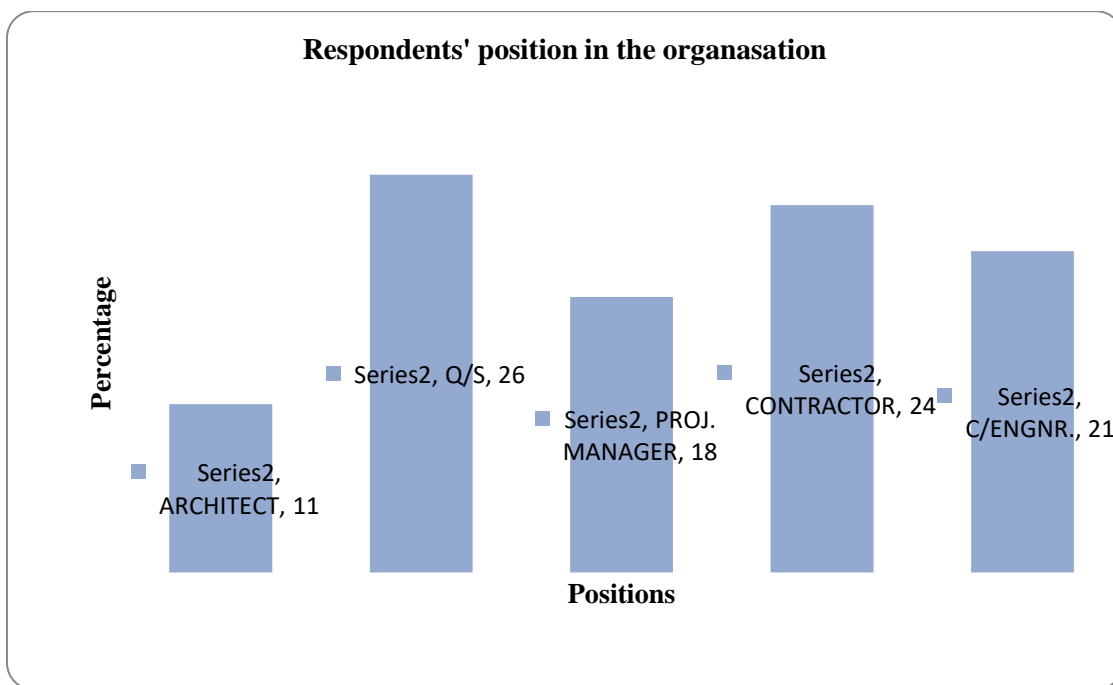


Figure: 4.2.1 Respondents position in organisation

4.3 The professional bodies of respondents

Figure 4.3 indicates that 19% of respondents had professional membership of Nigerian Institute of Builders (NIOB), 28% were holders of Nigerian Institution of Quantity Surveyors while members with NIA, NSE and NITP were 22%, 17% and 14% respectively. Inferences drawn from this was

that the respondents sampled are certified professional with adequate knowledge related to the aim of this study to comprehend the contents of the questionnaires, thus providing suitable responses.

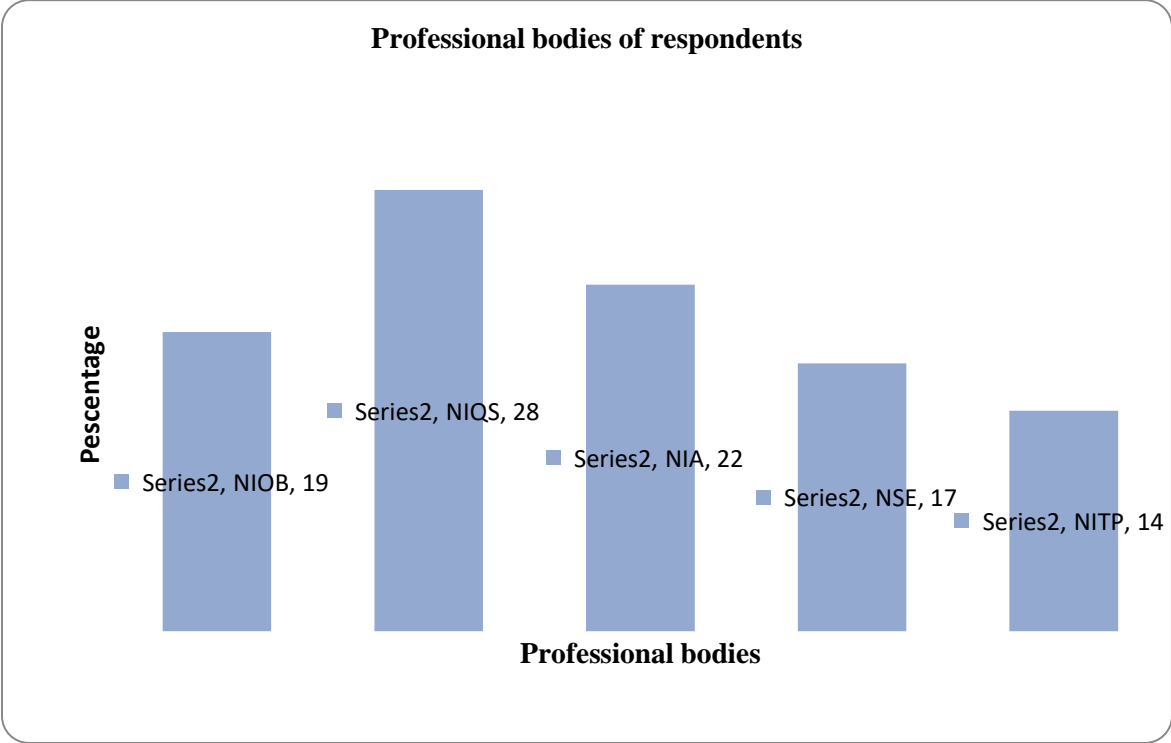


Figure: 4.3 Respondents professional body

4.4 Years of experience of respondents in construction

figure 4.40 shows that 10% of respondents sample had working experience of less than 5 years in the building industry, 19% had between 5- 15 years working experience, while 30% had spent 11-15 and 41% had 15 years and above working experience in the building industry. This is an indication that the respondents had spent reasonable time within the industry to have familiarizes with issues related to delayed in completion of building projects.

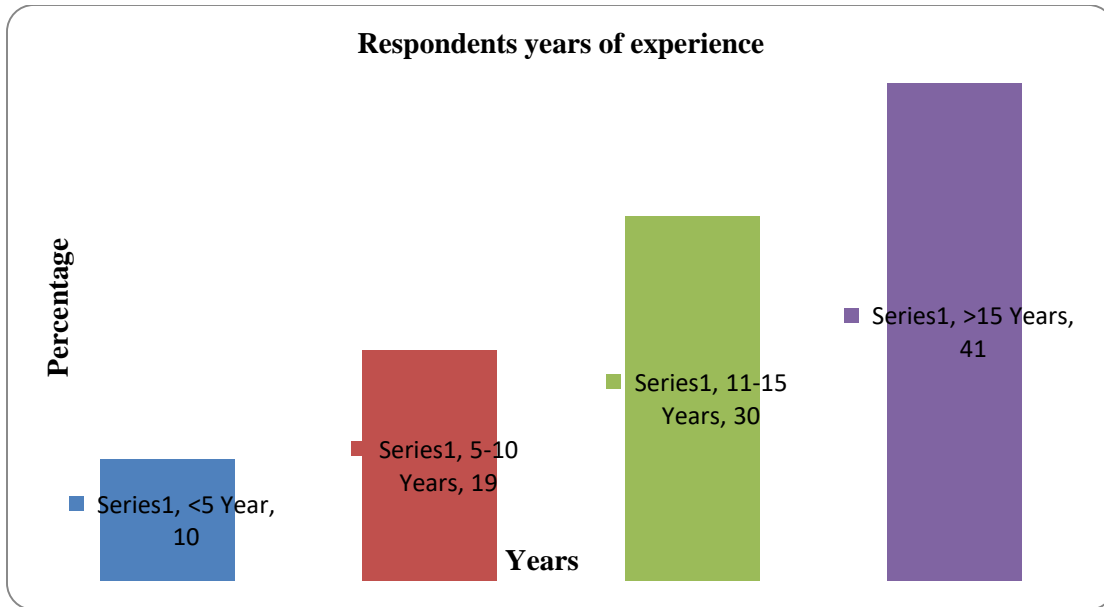


Figure: 4.4 Years of experience of respondents in construction

4.5 Causes of project delayed in tertiary institutions

This section covered client related factors, contractor related factors, consultant related factors and external related factors that caused delay in project delivery. Each factor of delay was studied using the Statistical Mean Score to examine level of importance such as (4.5 to 5.0 VS, 3.5-4.49 Sign, 2.5-3.49 Moderat, 1.5-2.49 fair, 0.0-1.49) of delay factors and group in construction projects. The ranking of delay factors which were examined by the researcher from the view point of all respondents were shown in the tables below.

Table 4.1 Client related factors

Client Related Causes	Mean scores	S. dev	Rank	Remarks
Insufficient funding	4.25	.87	1	High
Delay or non-payment for completed works	3.94	1.0	2	
Cash flow problem during construction	3.89	.92	3	
Interference with project performance	3.87	1.07	4	
Financial issues	3.86	1.10	5	
Increase in quantities	3.73	1.01	6	
Impractical allocation of resources	3.65	.94	7	
Slow decision making	3.62	1.06	8	
Date of notice to proceed	3.58	.76	9	
Wrong choice of consultant and contractors.	3.54	.81	10	
Design alteration and change order	3.44	1.20	11	Slightly
Unrealistic contract duration	3.27	.89	12	
Dispute variation order	3.14	.82	13	
Possible prejudice	1.68	1.23	14	Low

Source: Researcher's data (2019)

Table 4.1, shows that fourteen (14) factors were identified in this group from literature. The mean scores revealed that: insufficient funding (4.25), Delay or non-payment for completed works (3.94), Cash flow problem during construction (3.89), Interference with project performance and financial issues has the mean item score of 3.87 and 3.86 respectively are top most five factors of delay of building project in Niger state thus ranked 1st, 2nd, 3rd, 4th and 5th respectively. This result agrees with Yates and Epstein (2006) that financial issues, cash flow problems, slow decision making and insufficient funding are the main causes of delay in construction projects.

In the same way, Increase in quantities, Impractical allocation of resources, slow decision making, Date of notice to proceed and wrong choice of consultant and contractors were ranked 6th., 7th, 8th, 9th and 10th with statistical mean values of 3.73, 3.65, 3.62, 3.58 and 3.54 respectively.

Findings are in agreement with Muhamad (2010) studied that failure of contractor to mobilize the site and start the work in a timely manner, delay in the submission of shop drawings to the owner for approval, inadequate construction equipment and defective works were responsible for delay in progress of works. However, the calculated mean scores were above 3.50 indicated that these factors were highly responsible for delay in project.

Meanwhile, Design alteration and change order, Unrealistic contract duration and Dispute variation order had statistical mean values of 3.44, 3.27 and 3.14 and were ranked as 11th, 12th and 13th respectively. Although these factors were having a mean scores between 3.14 and 3.44 and this shows that there were slightly highly responsible for delayed in project delivery. These results were in line with the findings of Yates and Epstein, (2006) studied the causes of delay and cost overrun in construction project in Nigeria. Also, possible prejudice (1.68) was ranked 14th among all the factors responsible for delay of project delivery.

Table 4.2 Contractor related factors

Contractor Related Causes	Mean scores	S. dev	Rank	Remarks
Project management issues	4.74	.73	1	Very High
Inappropriate construction method	4.70	.92	2	
Mistake during construction	4.67	.82	3	
Mistaken during construction stage	4.67	.92	4	
Improper planning	4.64	.87	5	
Lack of effective communication	4.64	.85	6	
Shortage of supply like steel, and concrete	4.59	.89	7	
Financial matters	4.59	.79	8	
Indicative of experience	4.53	.97	9	
Conflict in works schedule of subcontractor	3.87	1.02	10	High
Contractor regarded contractual relationship	3.86	1.00	11	
Experience of project team	3.85	1.20	12	
Quality assurance /control	3.81	1.05	13	
Poor coordination	3.79	.96	14	
Site accident	3.72	.878	15	
Negligence	3.70	1.21	16	
Late delivery of materials & equipment	3.66	1.22	17	
Economic condition	3.65	1.14	18	
Liquidated damages	3.61	1.22	19	
Negotiation during construction	3.58	.926	20	
Inadequate experience	3.53	1.20	21	
Possible prejudice	3.49	1.32	22	Slightly High
Change order and mistake	3.42	1.11	23	
Incompetent site management	3.42	1.22	24	
Wrong choice of bankers	3.41	1.19	25	
Dispute	3.40	1.28	26	
Shortage of material	3.30	1.42	27	
Management by the contractor (Financial, suppliers support	2.35	1.11	28	Low

Source: Researchers' data, (2019)

Table 4.2 examined contractor related factors responsible for delayed in project completion. It was revealed from the table that out of twenty-eight (28) factors identified by the study, nine (9) factors which includes: Project management issues, inappropriate construction method, Mistake during construction, Improper planning, Lack of effective communication, Shortage of supply like steel,

and concrete, Financial matters and Indicative of experience, with the corresponding mean values of 4.74, 4.70, 4.67, were ranked 1st, 2nd, 3rd, respectively. The mean scores related to these factors were observed greater 4.50 indicating their very highly responsible for project delays. Findings from the above in agreement with Muhamad (2010) that mistake during construction, variations, improper planning and management, lack of effective communication and method of construction adopted are the causes of projects delay.

Similarly, the results presented in the Table 4.2 identify that, Conflict in works schedule of subcontractor (3.87), Contractor regarded contractual relationship (3.86), Experience of project team (3.85), Quality assurance /control, Poor coordination (3.81), Site accident (3.79), Negligence (3.72), Late delivery of materials & equipment (3.66), Economic condition (3.65), Liquidated damages (3.61), Negotiation during construction (3.53) and Inadequate experience (3.49), were ranked 10th, 11th, 13th, 14th, 15th,16th,17th,18th,19th,20th,21st, and 22nd respectively. Inferences drawn from the analysis indicated that the factors mentioned above were slightly highly responsible for delayed of completion of construction projects in educational institution in Niger State.

Table 4.3 Consultant Related Causes

Consultant Related Causes	Mean scores	S. dev	Rank	Remarks
Inappropriate design	3.93	.866	1	High
Poor contract management	3.89	.975	2	
Design errors	3.81	.974	3	
Late preparation of drawings and other contract documents	3.76	.796	4	
Improper contract packaging/delivery strategy	3.73	1.193	5	
Over inspection	3.64	.934	6	
Long waiting time for inspection & testing	3.58	.996	7	
Inappropriate coordination of information	3.55	.798	8	
Change orders and mistakes and discrepancies in contract documents	3.53	.771	9	
Quality assurance/control	3.51	.921	10	
Long period of approval of tests and inspections	3.25	.912	11	Slightly
Experience of project team	3.24	.932	12	High
Failure of RIBA plan of work application	3.21	1.127	13	
Late identification & resolution of drawings & specification error & omission	3.13	1.278	14	
Conflict of the drawing and specification	3.11	0.78	15	

Source: Researchers' data 2019

Table 4.3 Substantiated the factors of delayed payment caused by projects consultants, it was discovered from the table via statistical mean scores that: Inappropriate design is the most significant factor of delayed in construction projects with a mean score of (3.93) and ranked 1st, this was preceded by poor contract management (3.81) and ranked 2nd. While design errors, late preparation of drawings and other contract documents, Improper contract packaging/delivery strategy, over inspection, long waiting time for inspection & testing, inappropriate coordination of information, change orders and mistakes and discrepancies in contract documents and quality

assurance/control have mean scores of 3.81, 3.76, 3.73, 3.64, 3.58, 3.55, 3.53 and 3.51 respectively and ranked 3rd, 4th, 5th, 6th, 7th, 8th, 9th and 10th respectively. The mean scores of these factors were observed to have valued more than average indicating that they were slightly and highly responsible for delayed in delivery of construction projects in tertiary institutions in Niger state. However, findings from the study were in agreement with the study of Al- Momani (2000), that conducted a quantitative analysis of construction delays by examining the records of 130 public building projects constructed in Jordan during the period 1990 – 1997.

Conversely, the table identified that the factors with lowest mean values were: Long period of approval of tests and inspections (3.25), experience of project team (3.24), failure of RIBA plan of work application (3.21) and late identification & resolution of drawings (3.13) and specification error & omission (3.11) respectively were ranked 11th, 12th, 13th, 14th and 15th respectively.

Table 4.4 External Related Causes

External Related Causes	Mean scores	S. dev	Rank	Remarks
Natural disasters (for example. floods, lightning strikes)	4.42	.918	1	
Weather conditions	4.33	.937	2	
Change in government’s leadership & politics.	3.70	1.264	3	High
Interference by political leaders	3.59	1.186	4	
Religious factors	3.58	1.200	5	

Source: Researchers’ data (2019)

Table 4.4 examines the external related factors that were observed to have responsible for delayed in projects delivery. Five factors were identified by the study, the factor with highest mean score values are natural disasters (for example, floods, lightning strikes) having a mean scores of 4.42 and ranked 1st. while weather conditions had a mean score of 4.33 and ranked 2nd, similarly, Change in government’s leadership & politics (3.70), Interference by political leaders (3.59) and Religious factors (3.58) were ranked 3rd, 4th, and 5th respectively.

Finding from the study were in (Aibinu and Jagboro, 2002) that delay will affect the client funding budget because the contractor can claim for damages for all the causes emerged from the side of the client or his representatives.

Table 4.5: Effects of delay factors on construction projects

Effects Of Construction Delayed	Mean scores	S. dev	Rank	Remarks
Abandonment of building projects	4.23	1.05	1	High
Inadequate planning	3.94	1.08	2	
Variation of project scope	3.93	1.11	3	
Incompetent project manager	3.80	1.20	4	
Delay in progress payment by client	3.77	1.11	5	
Reduction of employment opportunities	3.74	1.26	6	
Faulty design	3.67	1.15	7	
Wrong estimate	3.64	1.01	8	
Unrealistic contract duration by the clients	3.64	1.27	9	
Shortage of materials	3.62	.92	10	
Blacklist by authorities	3.61	1.08	11	
Difficulties in attracting foreign loan	3.59	1.10	12	
Variation of project scope	3.58	.74	13	
Inadequate cost control	3.57	.97	14	
Lack of efficiency by the contractors	3.54	1.16	15	Slightly High
Termination of contracts	3.48	1.20	16	
Quality of work	3.47	1.23	17	
loss of confidence on the contract by the community	3.46	1.15	18	
Reduction of contractors confidence on economic activities	3.45	1.05	19	
Wastage and under-utilization	3.41	1.41	20	
Reduction of profit	3.40	1.05	21	
Litigation in construction projects	3.40	1.12	22	
Abandonment of works in construction projects	3.39	1.11	23	
Low performance of contractor	3.35	1.03	24	
Late payment to sub- contractors	3.33	1.24	25	
Rescheduling of works in projects	3.33	1.06	26	
Loss of productivity in construction projects	3.30	1.21	27	
Time overrun in construction projects	3.27	1.09	28	
Cost overrun in construction projects	3.16	1.31	29	
Dispute between contractor and client	3.12	1.00	30	
Arbitration in construction projects	2.79	0.95	31	

Source: Researchers' data (2019)

Table 4.5 examined the effects of delayed of project completion of tertiary institutions in Niger state. It was established based on the mean scores that: abandonment of building projects was the most significance effects of project delay with mean score of 4.29 and ranked 1st while inadequate

planning (3.94), variation of project scope (3.93), incompetent project manager (3.80), delay in progress payment by client (3.77), reduction of employment opportunities (3.74), faulty design (3.67), wrong estimate (3.64), unrealistic contract duration by the clients (3.64), shortage of materials (3.59), variation of project scope (3.58) and inadequate cost control (3.57) were ranked 2nd , 3rd ,4th, 5th, 6th, 7th,8th,9th, 10th 11th, 12th, 13th, 14th and 15th respectively.

4.6 Result of Paired Samples t-test

Paired Samples t-test was carried out to established the difference between the perceptions of stakeholders on the causes of the delay in Niger State tertiary institutional projects. The results were summarized in Table 4.6 to 4.8 below.

Table 4.6: The differences between the opinion of Clients, Consultants and Contractors on the client related factors that causes project delayed in tertiary institutions

Pairs	Mean	Sd.dev	95% Confidence interval of the Difference	t	Sig. (2tailed)
			<u>Upper</u>		
Pair 1: Client – Contractor	.01000	-.12857	.45734	.048	.962
Pair 2: Client – Consultant	-.26357	.84962	.22699	-1.161	.267
Pair4:Consultant Contractor	- 27357	.20831	.39385	4.914	.000

Source: Field work (2019)

A paired sample t-test was used to determine whether there was a statistically significant difference between the opinions (means) of Client versus Contractors, Client versus Consultants and Consultants versus Contractors.

The paired sample t-test revealed that P-values for all the samples paired except Consultants versus Contractors to be greater than 0.05 (0.962 and 0.267) which can be concluded that there is no statistically significant difference between the mean scores of their responses at 95% confidence interval. Inferences drawn from the above revealed that there is no agreement between the opinions

of these stakeholders on the client related factors that causes delay in Niger State educational institutional projects. While the P. Values for the samples paired between Consultants and Contractors was observed to be lower than 0.05 (.000) indicating that the differences between the mean scores of their responses is statistically significant at 95% confidence interval. Inferences drawn also revealed that the stakeholders are in agreement on the client related factors that causes delay in Niger State educational institutional projects.

Table 4.7: The differences between the opinion of Clients, Consultants and Contractors on the Contractor related factors that causes project delayed in tertiary institutions

Pairs	Mean	Sd.dev	95% Confidence interval of the Difference		T value	Sig. (2tailed)
			Lower	Upper		
Pair 1: Client – Contractor	-.54893	.93589	-.91183	-.18603	-3.104	.004
Pair 2: Client – Consultant	.11393	.80945	-.19994	.42780	.745	.463
Pair 4: Consultant – Contractor	-.66286	.46960	-.84495	-.48076	-7.469	.000

Source: Field work (2019)

A paired sample t-test was used to determine whether there was a statistically significant difference between the means (opinions) of Client versus Contractors, Client versus Consultants and Consultants versus Contractors.

The result in Table 4.7 shows that the P-values are less than 0.005 (0.004 and 0.000), which can be resolved that there is statistically significant difference between the mean scores of their responses at 95% confidence interval. Inferences drawn from the above revealed that the level of agreement between the opinions of these stakeholders on the contractor related factors that causes delay in Niger State educational institutions projects is significant.

While the P values for the samples paired between Client versus Consultant was observed to be greater than 0.05 (0.43). This indicate that the differences between the mean scores of their responses is not statistically significant at 95% confidence interval.

Table 4.8: The differences between the opinion of Clients, Consultants and Contractors on the Consultant related factors that causes project delayed in educational institutions

Pairs	Mean	Sd.dev	95% Confidence interval of the Difference		T value	Sig. (2tailed)
			Lower	Upper		
Pair 1: Client – Contractor	.30733	1.02622	-.26097	.87563	1.160	.265
Pair 2: Client – Consultant	-.31067	.50281	-.58912	-.03222	-2.393	.031
Pair 4: Consultant – Contractor	-.61800	1.00686	-1.17558	-.06042	-2.377	.032

Source: Field work (2019)

A paired sample t-test was used to determine whether there was a statistically significant difference between the means (opinions) of Client versus Contractors, Client versus Consultants and Consultants versus Contractors.

The result obtained from Table 4.8 shows that the P value of the above are greater than 0.005. This signify that the differences between the mean scores of their responses is not statistically significant at 95% confidence interval. Inferences drawn from the above revealed that there is no agreement between the opinions of these stakeholders on the consultant related factors that causes delay in Niger State educational institutional projects

4.7 The mitigating measures to overcome the challenges of delay factors

Table 4.9: Mitigating Measures

Mitigating Measures	Mean scores	S. dev	Rank
Use of appropriate construction methods	4.42	.918	1
Systematic control mechanism	4.33	.937	2
Proper emphasis on past experience	3.93	1.11	3
Developing human resources in the construction industry	3.80	1.20	4
Comprehensive contract administration	3.77	1.11	5
Use up to date technology utilization	3.74	1.26	6
Clear information and communication channels	3.67	1.15	7
Effective strategic planning	3.64	1.01	8
Proper project planning and schedule	3.64	1.27	9
Effective site management and supervision	3.62	.92	10
Perform a preconstruction planning of project tasks and resources need	3.58	.996	11
Frequent coordination between the parties	3.55	.798	12
Improving contract award procedure by giving less weight to prices and more weight to the capacities and past performance of contractors	3.53	.771	13
Frequent progress meeting	3.51	.921	14

Source: Researchers' data (2019)

Table 4.9 established the factors employed to mitigate the occurrence of delayed of construction project. It was revealed that the factors identified in the study were very effective in tackling delays of project delivery in tertiary institutions in Niger State, use of appropriate construction methods (4.42), systematic control mechanism (4.43), proper emphasis on past experience (3.93), developing human resources in this construction industry (3.80), comprehensive contract administration (3.77), use up to date technology (3.74), effective strategic planning (3.64), frequent coordination between the parties (3.58).were ranked 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, and 8th respectively.

In addition, the factors with least mean scores are; Improving contract award procedure by giving less weight to prices and more weight to the capacities and past performance of contractors and frequent progress meeting were ranked 13th and 14th respectively.

4.8 Summary of Findings

The results were summarised based on the set objectives of the research as shown below.

1. The causes of delay factors

a) The followings were established as main causes of delay by client are: (1) insufficient funding, (2) interference with project performance, (3) delay or nonpayment for completed works, (4) impractical allocation of resources, (5) unrealistic contract duration, and (6) wrong choice of consultant. This signify that client contributes immensely to the causes of delay in educational institutional projects in Niger State.

b) The following were established as main causes of delay by contractors: (1) inappropriate construction method, (2) inadequate experience, (3) mistaken during construction stage, (4) incompetent site management, and (5) wrong choice of bankers. This reflects that the contractors contribute to the causes of delay in educational institutional projects in Niger State.

c) The followings were established as main causes of delay by consultants: (1) inappropriate design, (2) poor contract management, (3) late identification, resolution of drawings, specification error & omission, (4) late preparation of drawings and other contract documents, and (5) improper contract packaging/delivery strategy. This shows that consultant also contribute to the causes of educational institutional projects in Niger State.

2. The effects of delay factors on tertiary institutional projects

The following were established as effects of delay on educational institutional projects: (1) abandonment of building projects, (2) inadequate planning, (3) variation of project scope, (4) incompetent project manager, and (5) delay in progress payment by client.

3. The difference between the stakeholder's perception on the causes of delay

The findings from the stakeholder's perception were summarized as:

- a) There is no agreement in stakeholder's perception on client related factors that causes project delay in Niger State educational institutions.
- b) There is agreement in stakeholder's perception on contractor related factors that causes project delay in Niger State educational institutions.
- c) There is no agreement in stakeholder's perception on consultant related factors that causes project delay in Niger State educational institutions.

4. The mitigation measures to overcome the challenges of delays factors

The followings were established as main mitigation measures to overcome the challenges of delay factors in educational institutional projects: (1) effective strategic planning, (2) proper project planning and schedule, (3) effective site management and supervision, (4) use of appropriate construction methods, (5) systematic control mechanism, (6) proper emphasis on past experience and (7) developing human resources in the construction industry. The above mitigation strategies if adopted and implemented in Niger State educational institutional projects will reduce the causes and effects of delay in construction works.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Based on the findings of this research, the study concludes that, insufficient funding, nonpayment of completed works, cash flow problem during construction and interference with project performance were identified to be the major factors that causes delay in tertiary institutions construction project in relation to clients.

Be that as it may, temporary worker related reasons for delay in tertiary foundation development extends in Niger state are, the board issues, wrong development strategy, botch during development organize and ill-advised arranging were recorded as the main considerations. Further more, specialist related reasons for delays are wrong structure, poor agreement the board, plan blunder, late planning of drawing and other agreement archive were recorded as the main considerations. In the part of outer related causes cataclysmic event, climate conditions, change in government initiative/legislative issues and obstruction by political pioneers were uncovered as the significant reasons for delay according to the outside components. The examination likewise reasons that the significant impacts of development delay are surrender of the structure ventures, deficient arranging, variety of task scope, uncouth undertaking supervisor and postponement in progress installment by the customers.

The exploration additionally presumes that relationship coefficient between customer related components of deferral and customer related causes was seen to be sure. The examination likewise infers that the connection between the customer related components and outer related variables was additionally positive. Notwithstanding, the relief gauges in their request for

significance are utilization of suitable development technique, methodical control instrument, legitimate accentuation on past experience and creating HR in the development business.

5.2 Recommendation

The followings were suggested dependent on the discoveries:

1. The top administration of development industry need to embrace viable vital administration approach, through legitimate arranging and planning.
2. The administration of development extends in tertiary organizations should utilize suitable development techniques and methodical control system.
3. There is requirement for advancement of human asset the executives and legitimate accentuation on past encounters so as to improve profitability.
4. There is requirement for complete agreement organization using modern innovation

5.3 Contribution to the information

The examination featured main considerations that makes delay in regard customer, contractual workers and outer related variables were positioned to help the expert for taking choice in improving cost execution and appropriate administration of components that causes delay in tertiary establishment development ventures.

5.4 Area of further study

Further studies could be carried out on;

- i. Factors and effects of delay in railway construction
- ii. Factors that causes delay in road construction project in Niger state
- iii. Delay and effects of construction in tertiary institutions of other states in Nigeria.

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APPENDICES

APPENDIX I: QUESTIONNAIRE



Federal University of Technology Minna

School of Environmental Technology

Department of Quantity Surveying

27thSeptember, 2019.

Dear Sir/Madam,

QUESTIONNAIRE SURVEY ON THE CAUSES AND EFFECTS OF PROJECTS DELAY IN NIGER STATE TERTIARY INSTITUTIONS.

I am presently pursuing a Degree of Master of Technology in Quantity Surveying at the Federal University of Technology Minna. My research is titled; “The Causes and Effects of Projects Delay in Niger State Tertiary Institutions”

Enclosed herewith, is the copy of the Questionnaire. Based on your experience as a professional in the field of construction, kindly spare a few minute(s) of your valuable time to complete it. Please answer all questions where possible, all information gathered will be kept strictly confidential and will be used only for this research.

Your assistance and cooperation will be highly appreciated. Thank you in advance for your time and kind cooperation.

Yours Faithfully

Isyaku Ladan Mohammed

Aim of the research is to appraise the main causes and effects of delay on tertiary institution construction projects in Niger state, Questionnaire is to achieve first objectives which is:

1. To examine the causes of project delay in Niger state tertiary institutions.
2. To examine the effects of project delay in Niger state tertiary.
3. To examine the relationship between the stakeholder's perception on the causes of delay in Niger State tertiary institutional projects.
4. To establish mitigation strategic measures to minimize the effects and causes of delays on tertiary institution projects.

Please respond to the following questions either by ticking appropriately or by writing your answer in the space provided.

Please note:

The answers should be based on your experience in construction projects.

All information provided will be treated in the strictest of confidence.

SECTION 1:RESPONDENT'S EXPERIENCE.

1.1. What Business in Construction is your Organisation involved in?

- A. Contractor
- B. Consultant
- C. Client /Client representative
- D. Financier
- E. Other please specified

1.2. How long have you been dealing with Construction Projects?

- A. < 5 years
- B. 5- 10 years
- C. 11- 15 years
- D. > 15 years

1.3. What Professional Membership do you belong to?

- A. NIQS
- B. NIOB
- C. NIA
- D. NSE

E. Other please specify

1.4. What is your Area of specialization in

Construction?

A. Architect

B. Quantity Surveyor

C. Project Manager

D. Contractor

E. Civil Engineer

SECTION 2A: EFFECTS OF DELAY ON CONSTRUCTION PROJECTS

Please kindly indicate your level of agreement on the following effects of project delays in tertiary institutions in Niger State.

Level of causes	Very Low	Low	Slightly high	High	Very high
Scale	1	2	3	4	5

2A.1 Causes responsible for project delays

S/N	Causes	Level of agreement				
		1	2	3	4	5
	CLIENT RELATED ISSUES	None	Low	Slight	High	Very High
1	Insufficient funding					
2	Interference with project performance					
3	Delay or nonpayment for completed works					
4	Impractical allocation of resources					
5	Unrealistic contract duration					
6	Wrong choice of consultant & contractors					
7	Slow decision making					
8	Design alteration & change orders					
9	Dispute variation order					
10	Possible prejudices					
11	Date of notice to proceed					
12	Increase in quantities					
13	Cash flow problems during construction					

14	Financial issues					
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2A.2 Causes of project delays

S/N	Causes of delay	Level of agreement				
		1	2	3	4	5
	CONTRACTOR RELATED CAUSES	None	Low	Slight	High	Very High
1	Poor coordination of subcontractors					
2	Inappropriate construction method					
3	Inadequate experience					
4	Mistaken during construction stage					
5	Incompetent site management					
6	Wrong choice of bankers					
7	Improper planning					
8	Lack of effective communication					
9	Shortage of supply like steal, concrete					
10	Shortage of materials					
11	Management by the contractor (financial, supplier support, sub-contractor)					
12	Financial matters					
13	Indicative of experiences					
14	Conflict in works schedules of sub-contractors					
15	Contractor regarded contractual relationship					
16	Experience of project team					
17	Quality assurance/control					
18	Project management issues					
19	Site accident					
20	Negligence					
21	Late delivery of materials \$ equipment					
22	Economic condition					
23	Liquidated damage (LAD)					

24	Negotiation during construction					
25	Mistake during construction					
26	Possible prejudices					
27	Change orders and mistakes and discrepancies in contract documents					
28	Dispute (variation order)					

2A.3 Causes of project delays

S/N	Causes	Level of agreement				
		1	2	3	4	5
	CONSULTANT RELATED CAUSES	None	Low	Slight	High	Very High
1	Inappropriate design					
2	Poor contract management					
3	Late identification & resolution of drawings & specification error & omission					
4	Late preparation of drawings and other contract documents					
5	Improper contract packaging/delivery strategy					
6	Over inspection					
7	Long waiting time for inspection & testing					
8	Inappropriate coordination of information					
9	Design errors					
10	Quality assurance/control					
11	Long period of approval of tests and inspections					
12	Failure of RIBA plan of work application					
13	Change orders and mistakes and discrepancies in contract documents					
14	Conflict of the drawing and specification					
15	Experience of project team					

2A.4 Causes of project delays

S/N	Causes	Level of agreement				
		1	2	3	4	5
	EXTERNAL CAUSES	None	Low	Slight	High	Very High
1	Change in government's leadership & politics					
2	Weather conditions					
3	Natural disasters (e.g. floods, lightning strikes)					
4	Interference by political leaders					
5	Religious factors					

2A.5: Please kindly indicate the level of effects of project delays.

S/N	Effects	Level of agreement				
		1	2	3	4	5
		None	Low	Slight	High	Very High
1	Time overrun in construction projects					
2	Cost overrun in construction projects					
3	Dispute between contractor and client					
4	Arbitration in construction projects					
5	Litigation in construction projects					
6	Abandonment of works in construction projects					
7	Low performance of contractor					
8	Late payment to sub- contractors					
9	Rescheduling of works in projects					
10	Loss of productivity in construction projects					
11	Lack of efficiency by the contractors					
12	Termination of contracts					
13	Quality of work					
14	loss of confidence on the contract by the community					
15	Reduction of contractors confidence on economic activities					
16	Wastage and under-utilization					
17	Reduction of profit					
18	Abandonment of building projects					
19	Inadequate planning					
20	Variation of project scope					
21	Incompetent project manager					
22	Delay in progress payment by client					
23	Reduction of employment opportunities					
24	Faulty design					

25	Wrong estimate					
26	Unrealistic contract duration by the clients					
27	Shortage of materials					
28	Blacklist by authorities					
29	Difficulties in attracting foreign loan					
30	Variation of project scope					
31	Inadequate cost control					

3A. Please kindly pick the most appropriate mitigation measure to overcome challenges of effects of project delays

S/N	MITIGATION MEASURES	Level of agreement				
		1	2	3	4	5
		None	Low	Slight	High	Very High
1	Effective strategic planning					
2	Proper project planning and schedule					
3	Effective site management and supervision					
4	Use of appropriate construction methods					
5	Systematic control mechanism					
6	Proper emphasis on past experience					
7	Developing human resources in the construction industry					
8	Comprehensive contract administration					
9	Frequent coordination between the parties					
10	Use up to date technology utilization					
11	Clear information and communication channels					
12	Improving contract award procedure by giving less weight to prices and more weight to the capacities and performance of contractors					
13	Frequent progress meeting					
14	Use of experienced subcontractor and suppliers					
15	Perform a preconstruction planning of project tasks and resources need					