ANALYSIS OF FACTORS MILITATING AGAINST SUCCESSFUL BUILDING CONSTRUCTION PROJECT DELIVERY IN SOUTH-EAST NIGERIA

BY

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CERTIFICATION

This is to certify that this research work on **"Analysis of Factors Militating against Successful Building Construction Project Delivery in South-East, Nigeria"** was carried out by **Ejiogu Ejike F.** with Registration Number (**20094704168**) in partial fulfillment for the award of an MSc in Project Management Technology in the Department of Project Management Technology of Federal University of Technology, Owerri.

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DEDICATION

I dedicate this work to God Almighty, whom in his infinite mercy showered me with His grace all through these years in FUTO.

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ABSTRACTS

The study examined the factors militating against successful building construction project delivery in the Southeast, Nigeria with the objective of identifying and analyzing the militating factors for decision purposes. Six (6) militating factors were identified. Based on this, five-point Likert's scale, questionnaire was designed and distributed to 226 respondents for assessment. The multiple regression analysis result show that the average performance achieved in building construction delivery is 27.017 which is statistically low. The model developed show that all the factors with the exception of government policies and level of skilled workmanship exhibited negative influence on building project delivery in the Southeast States. The hypotheses test show that non-adherence to standard building codes is most critical to building project delivery. In view of these findings, the study recommends strict adherence to professional building codes, the creation of enabling environment through policies and programmes that will encourage the proper planning and implementation of building construction projects, Government development policies should be strengthened in order to control inflation and avoid constant increase in the cost of materials for building construction projects. Also, skilled workers should be engaged and, the cost and process of obtaining government approval should be made more affordable and simple so as to encourage improved success in the building project delivery and enhancement of socioeconomic wellbeing of the citizens.

Keywords: Analysis, factors militating, successful building, construction, project delivery Southeast.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

Building construction projects have assumed a center position in southeastern Nigeria today, giving rise to massive building projects. They may take the form of market construction, ware houses, school buildings, church and hotel buildings, government and private estate development projects which are going on in every part of the region. Recent discussions among the development experts seem to revolve around the attainment of development through the provision of shelter to the people, businesses, worship and academic pursuit to mention but a few. Various efforts have been made by individuals, governments and international organizations to develop the region through massive building construction projects in order to provide shelter as a platform for development activities. Hence, in a bid to ensure effective building construction, critical inquiry and discussion of the socioeconomic constraints militating against building construction projects are considered paramount.

Nigeria today is littered with a lot of failed and abandoned building projects due to poor planning and implementation skills (Tyron, 2014). The major aim of project management in building construction is the use of project management techniques and practices to ensure that projects are carried out within the specified

time, budget and quality specifications as they are the main basis for judging project success (Akpan, Echeme & Ubani, 2017).

A lot of socioeconomic constraining factors militate against construction projects, but it appears that human and economic related factors are more prominent in building construction projects as they integrate some unforeseen risks which over time have not been treated seriously despite the threats they pose on building project performance (Ikpo, 2016).Human beings are major players in building construction and have sometimes posed a major threat towards the timely completion of building projects as well as their quality achievement. However, human factor have been identified by many authors as critical for success or failure of construction projects (Ikpo, 2016, Okorafor, 2008). They posited that human capital is the only factor of production that controls the other factors of production.

Economic nature of the South-eastern States of Nigeria appear to negatively influence efforts to plan and implement successful building projects in the South-eastern States and other states in Nigeria. Many scholars have complained on the dwindling economic situation in the country and its effect on the development of the nation. Arguments from various quarters have it that instability in the price of construction projects, and low-income level of citizens of the State have direct bearing on the issue of the study (Ikpo, 2016 & Tyron 2014). The question is whether these two the only economic factors that affect building construction projects. Other authors believe that economic recession, high fiscal taxes, etc also

have negative bearing on building construction project performance (Echeme, 2017, Madu, 2013, & Sadibo, 2001).

The study is therefore set to investigate in the above problem confronting successful delivery of building construction projects in South-eastern States of Nigeria so as to determine the ways of tackling this problem and solutions to improve the performance of building projects for the development of the South-East geopolitical zone and other Zones in Nigeria.

1.2 Problem Statement

Successful building projects provide platform for the take-off of economic activities like businesses, education, entertainment, etc. But when this is not realized, economic activities are hindered and development suffers. Unfortunately, the rate of building project failures, collapse and abandonment in South-eastern States of Nigeria have assumed a worrisome dimension, especially, when viewed from the angle of socioeconomic losses incurred. This is because a lot of funds, lives and properties are been lost in this mischief. There is no doubt that a lot of factors have bearing on this issue but human and economic factors are seen as majorly contributing to the menace of building project failure and abandonment in South-east, Nigeria. However, review of relevant literature have blamed it on delays experienced in the release of project funds, high cost of securing government approval, illegally imposed fees, changing of design order midway into project implementation, unstable government policies and

programmes, and price fluctuations. The study therefore, is set to investigate this problem and possibly suggest solutions that will assist the performance of building projects in South-eastern States and Nigeria in general.

To assist in seeking for solution to the problem of the study. The following research questions were raised;

i. What could be the major factors militating against successful building project delivery?
ii. To what extent does each factor militate against successful building project delivery?
iii. To what extent do the overall factors militate against successful building construction project delivery?
iv. What is the most critical factor that militates against building project delivery in the South-east, Nigeria?

1.3 Objectives of the Study

The main objective of this study is to identify and analyze the factors militating against successful building project delivery in South-east, Nigeria. The specific objectives include:

i. To identify factors militating against successful building construction project delivery in South-east, Nigeria.
ii. To analyze the effect of each factor on successful building construction project delivery in South-east, Nigeria.

iii. To analyze the effect of the overall factors on the successful building construction project delivery.

iv. To rank the factors so as to determine the most critical factor that affect successful building construction project delivery in South-east for decisive purposes.

1.4 Research Hypothesis

The formulated hypotheses include:

H_{01}: The effect of each factor on successful building construction project delivery in South-east, Nigeria is not significant.

H_{02}: The overall effect of the factors on successful building construction project delivery in South-east, Nigeria is not significant.

1.5 Justification of Study

The high level of building project failure and the attendant effect on the socioeconomic development of South-eastern States is on the increase. The high cost of developing building structures and high rates of rent with low level of income earners have become a thing of worry. As result, majority of the citizens of the five (Abia, Anambra, Ebonyi, Enugu and Imo) States live in uncompleted buildings, makeshift houses and slumps thereby attracting various diseases. This study came at the right time, since government and individual efforts in recent times have been channeled mostly to the provision of shelter. Shelter for

residential and business purposes are the center discussion of development analysts in developing nations.

Therefore, the impact of this research work on building construction in our society can never be under-estimated as it possesses a lot of economic benefits.

This research is intended to provide clients, project managers, designers and contractors with necessary information needed to better manage and avert the stated problems in building construction.

It is therefore geared towards finding lasting solutions to human and economic problems already mentioned using appropriate project management procedures.

1.6 Scope of the Study

The content scope of the study covered identification and analysis of factors that inhibit successful building construction projects.

The geographical scope is the South-eastern States of Nigeria which include; Abia, Anambra, Ebonyi, Enugu and Imo.

However, on the course of this research, a lot of challenges were encountered which include: fear of releasing official information, insufficient research materials and lack of inspiration which prolonged the writing of this work.

All limitations encountered were properly managed to ensure effective results and realization of this work. This was done through good personal relationship.

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Review

Building construction is a process of adding structure to real property. The vast majority of building construction projects are small renovations, such as addition of a room, or renovation of a bathroom. Often, the owner of the property acts as a labourer, paymaster and design team for the entire project.

However, all building construction projects include some elements in common – design, financial, estimating and legal considerations (Tyron, 2014). Many projects of varying sizes reach undesirable end results such as structural collapse, cost overruns and/or litigation. Those with experience in the field make detailed plans and maintain careful oversight during the project to ensure a positive outcome. Commercial building construction is procured privately or publicly utilizing various delivery methodologies, including cost estimating, hard bid, negotiated price, traditional, management contracting, construction management-at-risk, design and build and design-build bridging.

Okafor, (2016) however posited that residential construction practices, technologies and resources must conform to local building authority regulations and codes of practice. Materials readily available in the area generally dictate the construction materials used (e.g. Brick versus stone, versos timber). Cost of construction on per square meter basis for houses can vary dramatically based on

site conditions, local regulations, economics of scale (custom designed homes are always more expensive to build) and the availability of manpower. During construction a lot of waste is generated therefore careful planning is needed for effective disposal.

2.1.1 The Concept of Success, Failure, Abandonment and Collapse of Building Projects

In the actualization of a project, it is very imperative to understand the above terms.

a. Project Success

According to Cleland, Pinto and Slevin (1975), a project is termed successful if it passes four success test criterion completed on time; the cost or money criterion – completed within budget; the effectiveness criterion – completed in accordance with the original set performance and quality standards; and clients satisfaction criterion – accepted by the intended users or clients whether the client is internal or from outside the organization.

The above success criterion call for successful project implementation by the utilization of proven management techniques of planning, organizing, directing and control.

The issues on the life cycles management, time management, conflict resolution and management, networking and contracts management, project choice and project quality are key factors that contribute to project success.

Effective project choice, for example, which results in a good project selection, greatly improves the probability of project success especially when the project is executed in accordance with project management implementation guidelines.

The critical Path Method (CPM) and Programme Evaluation and Review Technique (PERT), for example, contribute a lot to project success as they foster a great discipline through definition of project scope, time scale/ schedule and cost (Akpan & Chizea, 2007). Empirical evidence, however, suggests that the importance of networking is far overweighed by the contribution of other projects tools, which include: work breakdown structure, life cycle planning, systems engineering, configuration management and status reports.

Networking contributes to better cost and schedule performance but not necessarily to better technical performance and better client acceptance. It is very paramount at the end of a project to meet its technical specification and at the same time attain a high level of satisfaction on the part of the clients, users and project team (Baker, 2008). The end project must perform satisfactorily in service.

b. Project Failure

Project failure is illustrated by the inability to achieve the four success criteria and is manifested by the lack of application of proven project management techniques. It does not mean that the project may not have been physically

completed, the question, according to Ikpo, (2016) is: when is the completion? Is there any time or cost overrun? Is the quality specified standard achieved? Can it stand the test of time? Is the client and end-user satisfied? If the answers to the above questions are in the affirmative, the project is termed successful but if negative, means it has failed.

c. Project Abandonment

Project abandonment is an unplanned suspension of an ongoing work or project at the execution stage such as refusal or failure to complete a contract after practical completion duration. One can find abandoned and failed projects all over our country Nigeria, particularly in the Southeast. Corrupt practices like bribing before one is awarded a contract and lack of technical know-how have greatly contributed to project abandonment today. Most contractors after bribing their way to securing a contract end up not having enough fund to execute it and instead of losing entirely abandon the job half way. Also, most people who claim to be builders end up eating the fund for projects without proper budgeting.

In addition to these, Echeme, (2009), and Ekeanyanwu, (2015) pointed out that difficulty in payment of contractors due to government bureaucracy, political instability, inability of sub-contractors to conform to schedule, increase in the scope of work, change in pre-contract consultants such as architects, ineffective project finance, change in original design, indiscriminate award of contracts without reference to funds availability, materials scarcity, poor planning, lack of

resources and non-availability of effective project management skills as stated above, are the major reasons why projects fail and are abandoned today.

d. Building Collapse

The collapse of buildings has become popular in recent times. Last few years in Owerri, Lagos and Abuja for instance many building were reported to have crumbled to the floor claiming innocent lives and properties. This has been as a result of:

- **i.** Poor supervision
- **ii.** Greed on the part of contractors
- **iii.** Insufficient resources
- **iv.** Lack of technical know-how
- **v.** Also, the inability of the urban development sector to properly check and ascertain that building structures conform to standards etc.

Ekeanyanwu (2015) complained that most of the building projects in Nigeria and other developing countries lack proper supervision of construction materials, workmanship and funds, thus creating scarcity of the resources needed to actualize the project objectives. Consequently, Adeleke, (2014) posited that most construction contractors are corrupt and indiscipline, as a result are in the habit of engaging unskilled labour which drastically affects quality of most building projects, hence building collapse. This is the situation confronting most construction projects, especially, building projects.

2.1.2 Project Life Cycle Concept and Organization

Project management take place in an environment that is broader than that of the project itself; therefore, work must be carried out in alignment with the organizational goals and managed in accordance with the established practice methodologies.

2.1.2.1 Project Life Cycle

A life cycle is a progression through a series of different stages of development. Two methodologies are involved in completing a project life cycle. They include, what you need to do the work (project) and the project management practices. The project management makes use of the life cycle concept as a valuable tool for better understanding of the stages of a project and likely resources required for its successful implementation. The life cycle is used to pictorially explain the rise and demise of organizational phases in building of structures, production line and sales life cycle of a product. It is also one of the work and budgetary requirements of the project.

The basic life cycle concept holds for all projects and systems. Life cycle management is needed because the life cycle reflects every different management requirements at its various stages. In the beginning, for example, in terms of manpower –human resources – research personnel predominate, subsequently, their role diminishes at the planning stage. The execution which is more of concrete work features more of engineers and finally marketing and sales

personnel become more important. In a product development, for example, performance would be assessed by the degree to which the product meets the specification or goal for it.

However, Weiss and Gershon (2011) identified three stages of project management processes in their work, which consists of:

i. Project Definition

ii. Project Planning

iii. Project Implementation and control.

According to them, the definition stage, at which the mission, the objectives, and the specifications of the project output are identified, is the first stage.

The planning processes is the second during which the activities / tasks necessary, the resources and the time required for each task and the timing of the tasks are established. The author recommends the use of Network planning techniques of PERT or CPM at the planning Work Breakdown Structure (WBS).

At the project implementation and control stage, Weiss and Gershon, (2011) consider application of time-cost tradeoffs of CPM and PERT as quite useful in the proper implementation process. This stage, the plan is translated into reality.

In the same vein, Schwalbe (2008) opines that since projects operate as part of a system and involve uncertainty, it is good practice to divide projects into several phases. Hence, define a project life as a collection of project phases.

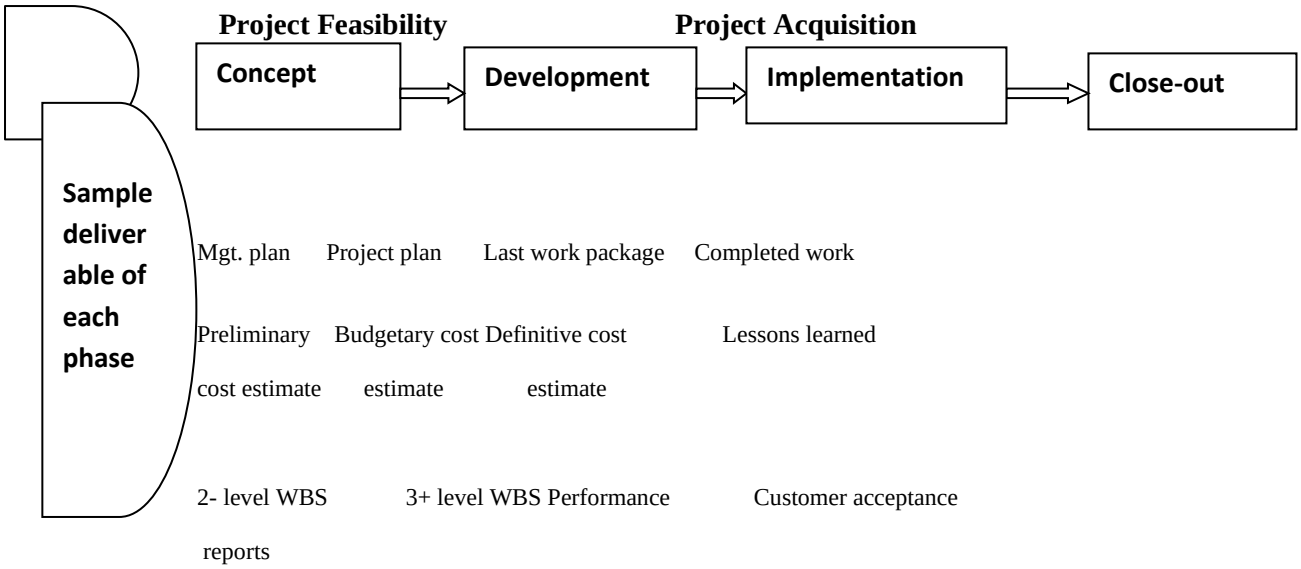

Figure 2.1: Phases of The Traditional project life cycle.

Source: Schwalbe (2008): Project Phases and the Project Life Cycle, Information Technology Project Management, 4th edition, pp. 55.

Schwalbe argued that a project life cycle defines what work will be performed in each phases, which deliverables will be produced and when, who is involved in each phase, and how management will control and approve work produced in each phases. The first two phases (Concept and development) focus on planning and arc often referred to *Project Feasibility*. The last two phases (implementation and close-out) focus on delivering the actual work and are often referred to as *Project Acquisition.*

In the concept phase, managers usually briefly describe the project – they develop very high – level or summary plan for the project, which describes the need for the project and basic underlying concepts. A preliminary or rough cost estimate is developed in this first phase, and an overview of the work involved is created.

A Work Breakdown Structure (WBS) outlines project work and it is a deliverable – oriented document that defines the total scope of the project.

After the concept phase is completed, *Development Phase begins*. In this stage, the project team creates more detailed project plans, a more accurate cost estimate, and a more thorough WBS.

During the *implementation phase* – the third phase – the project team creates a definitive or very accurate cost estimate, delivers the required work, and provides performance reports to stakeholders.

The last phase of the traditional project life cycle is *Close – out.* In the close – out phase, all of the work is completed, and there should be some sort of customer or user acceptance of the entire project. The project problems are stated in a lesson - learned report.

Another project cycle suggested in the Project Management Handbook (2007) is shown in Figure 2.2:

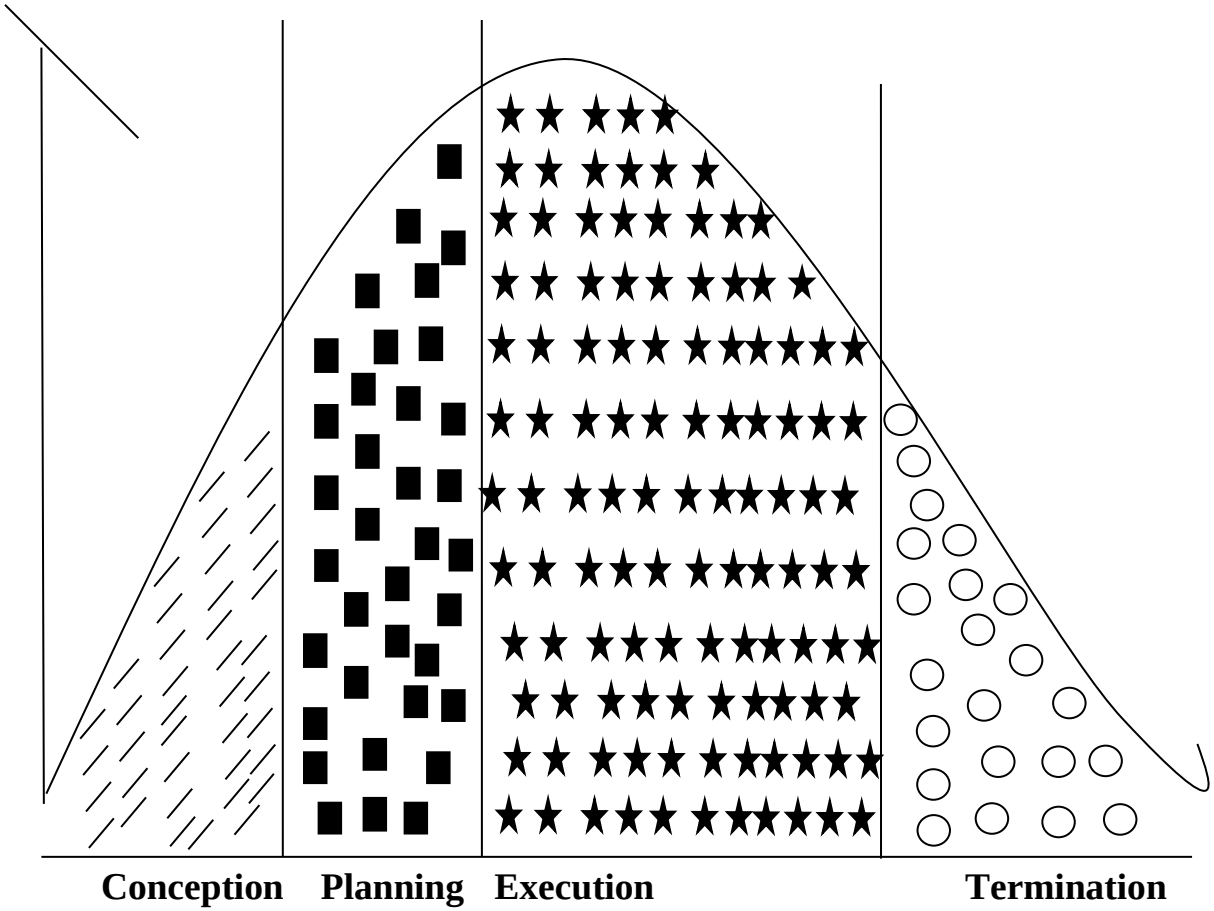

Figure 2.2: Life Cycle phases and Tasks accomplished by project phases
Source: Project Management Handbook (2007)

The detailed explanation of the activities of the phases is reflected in Table 2.1 as posited by the Project Management Handbook (2007).

Table 2.1 Project Life Cycle Activities

CONCEPTION PHASE	PLANNING PHASE	EXECUTION PHASE	TERMINATION
* Identify need	* prepare detailed schedule	* Procure materials	* Train functional personnel
* Establish feasibility	* Conduct studies and analyses	* Build and test tooling	*Transfer materials
*Identify Alternatives	* Design systems	* Develop support requirements	* Transfer responsibility
* Prepare proposal	* Build and test prototypes	* Produce system	* Release resources
* Develop basic budget and schedule	* Analyzes results	* Verify performance	* Reassign project team members
* Identify project team	* Obtain approval for construction	* Modify as required	

Source: Project Management Handbook (2007)

It is pertinent to note that all projects irrespective of size and complexity can be mapped to the afore-mentioned cycle structure.

At the conception phase of the project cycle in Table 2.1, the need for the project is identified which clearly states the objectives for the project. Also, the possibility and viability of the project is established in form of the feasibility study. Alternative projects are also identified, proposals prepared and development of the basic budgets and schedule.

During the planning phase, the activities involve include the preparation of a detailed project schedule, conduct studies and analyses to determine the background information of the project site, design systems, build and test prototype, and obtain approval for construction or execution of the project.

According to Table 2.2, the execution phase is characterized by the following activities, procure project materials, build and test tooling and equipment, develop support requirements, produce systems, verify performance and modify as required by the clients brief.

The termination phase involve training functional performance, transfer materials, transfer responsibility, release resources, and reassign project team members to other projects, if any.

These project life cycles approach provides better management control and appropriate links to the ongoing operations of an organization. They also minimize the time and money spent in developing inappropriate projects. However, this study adopts the traditional project life cycle as propounded by

Schwelbe (2008) which recognizes the need for feasibility study before initiating construction projects like building construction projects.

To enhance project success the following strategies or guidelines are recommended; as much as possible adopt the project management approach, project objectives should be clearly spelt out, clear objective create the conditions for the attainment of good results, project requirements should be clearly defined in terms of resources, time scale, technical approach and the required technology (Schwelbe, 2008, New York Office of Technology, 2015). The operators should develop the ability to manage change which is a major objective of the project management approach. Plan soundly, good information flow is necessary, there should be a clear definition of responsibilities, project scope and knowledge of factors that can affect the project scope and pay critical attention to project financing.

In general, life cycle events very with phases. Project size is quite different across the phases. The planning and the execution phase have by far the largest project teams. The level of bureaucracy parallels this pattern, with the greatest level corresponding to the greater sizes; the organizational climate is such that in the early and later phases it is more participative while it is different in the middle phases. Conflict entirely decreases consistently across the phases. Job satisfaction seems to be highest for the smallest, more organic organizations and lower for those organizations mostly mechanistic in nature (Adams 1990). In process,

involving initial strategic actions and supporting tactical activities, there are further implications for project performance based on a consideration of strategic and tactical issues.

2.1.3 Constraining Factors that Militate against Building Construction Projects

Aside the factors confronting building projects in Southeast, Nigeria which is our area of concentration in this review, other factors that pose serious threat to building construction in Nigeria and other developing countries Onyeulor, (2013) include: change in project design, change in schedule, non-adherence to building codes, weather condition, poor coordination among labourers and site manager, increase materials cost, shortage of materials during construction, improper design specification, lack of und for payment, improper planning, instability in government policies, materials theft and pilferages, poor project evaluation, high cost of project approval, and inadequate procurement procedure.

Many other authors have identified factors that discourage successful project planning and implementation to include;

i.) Poor Planning and Implementation Skills

Many projects do end successfully, while many others are outright disasters. However, usually projects end up in the gray area on the project success scale. It is common to complete a project but over the deadline or over the budget or to have a dissatisfied client due to poor quality of output. These variations or

overruns according to Okafor (2016) are mostly caused by engaging unskilled personnel in the planning and implementation process of projects. The skills of the people vested with the responsibility of project planning and implementation should be experts with proven records of success.

Inadequate project definition and planning has always been a problem in project execution. Many project managers think that they need to jump right into project by gathering business requirement. They think that if they do a good job with that, they are ready to run or the project. That is simply not true. In fact, you must complete a definition and planning process before you start gathering the business requirements.

Before the project work begins, one must make sure that the work is properly understood and agreed to by the project sponsor and key stakeholders. The project manager need to work with the sponsor and stakeholders to ensure that there is a common perception of what the project will deliver, when it will be complete, what it will cost, who will do the work, how the work will be done and what the benefits will be. The larger the project, the more important it is that this information be mapped out formally and explicitly. All projects should start with this type of output planning to prevent problems caused by different viewpoints on the basic terms of the project.

Usually, a project needs to have a budget and deadline before the business requirements are completed. In many cases, if the definition and planning are not done ahead of time, the project team starts off with inadequate resources and time,

the project manager may not realize it until the project is already in progress. Many projects that could be successful are viewed as failures because they overshot their budgets and deadlines. This situation is often caused by the project manager committing to numbers that are too low, based on lack of up-front planning.

ii.) Poor Certainty and Visioning Skills

Before the commencement of any building project, it is very necessary to get a detailed job specification in order to plan well and make accurate projections on what it will take to realize the project.

In certainty, we have cost and time certainty. Cost certainty represents the probability of completing a project within the budget agreed between clients and contractors before the commencement of construction. Time certainty and the reliability of completing projects on time compared with the plan are usually the top priorities for top construction clients (Daveport, 2017; Chinyio, 2012; Flanagan,2009). This is because cost overruns and delay, Poor certainty and visioning has always posed a major problem in building construction and is therefore the task of the project manager to minimize or eliminate surprises to clients (Winch,2009).

iii.) Poor Communication Skills

Communication in building construction is a means by which operatives and other members of the building team a linked in order to achieve the goal of the

project. Communication can be described as a two-way process as information is not only sent but also received, understood and implemented (Adeleke, 2014).

In construction, communication could also be achieved through, letters, drawings, symbols, signs, posters and word through which members of an organization send and receive information and also transforms this information into a finished goal which is realized in a construction project. To understand, apply and replicate their job specification is very paramount. Therefore, in a situation where there is breach or poor communication, it hampers effective project execution.

iv.) No Clear Work Breakdown Structure

A Work Breakdown Structure (WBS) is a decomposition of all the work necessary to complete a project. A WBS is arranged in a hierarchy and constructed to allow for clear and logical groupings, either by activities or components. Akpan and Chizea, (2007) posited that the WBS should represent the work identified in the approved project scope statement and serves as an early foundation for effective schedule and cost estimating. Project manager will develop a WBS Dictionary, which defines all the WBS elements.

The goals of developing a WBS and WBS Dictionary are:-

a.) For the project team to proactively and logically plan out the project to completion.

b.) To collect the information about work that needs to be done for a project.

c.) To organize activities into management components that will achieve project objectives. The WBS and WBS Dictionary are not the schedule, but rather the building blocks to it.

The progression of WBS and WBS Dictionary development is as follows:

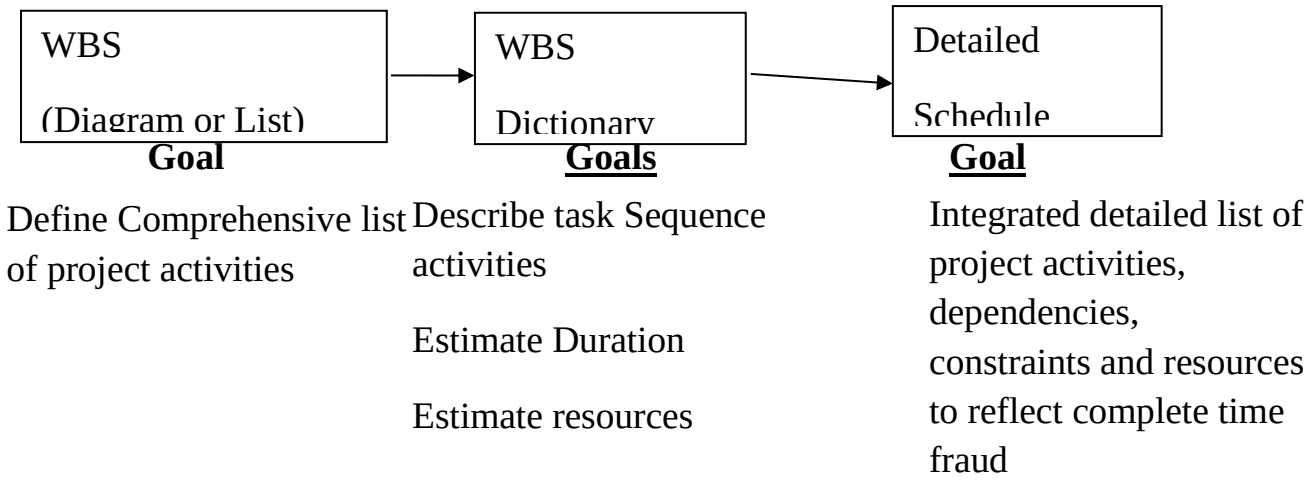

Figure 2.3: Work Breakdown Structure and Work Breakdown Structure Dictionary
Source: Project Management Body of Knowledge (2007)

v.) Changing Order at Mid-Project

This is one of the factors that has persistently affected building projects in Nigeria and around the world. Most of the time, after a project manager has scheduled, planned and made financial projections about a building, it is shattered after the commencement of the project either by the owner or change in the objective for which the building is constructed. Example: Conversion of a residential building to a commercial building.

As a result, Winch (2009) warned that the whole schedule might be changed leading to:

a. The destruction of already constructed parts

b. Added number of construction days (time)

c. Increased labour

d. Involved cost and cost of the destruction of already constructed parts

e. Added number of construction days (time)

f. Increased labour

g. Involved cost overrun

vi.) Unrealistic Expectations

Sometimes clients as well as contractors tend to make tight budgets in the bid to maximize profit in building construction. Instances where expectations are not realized include:

(a) Building on water ways: A building constructed in this type of area will not stand the test of time to serve the expected purpose as it will be evaded by erosion.

(b) Building out of the town planning's specification eg: erecting a storey building where bungalows are meant.

(c) Many poor budgets which cannot see the project to finish.

Other factors which will not be elaborated are:

(i) Conflicting priorities

(j) Insufficient resources (time, money, equipment, manpower, knowledge and expertise)

(k) Over allocation of resources

However, building construction projects have numerous factors militating against its successful delivery. Many authors have made various contributions in the past relating to this area of study, but this study have identified the following human and economic related factors based on the nature of the Southeastern Nigeria and the problems faced by both the private and public experts in delivering building projects in the region.

a. Funding Gap

Bureaucracy and all manner of delay experienced before funds are release have been a major problem facing the performance of most building construction projects in Nigeria. Variations in costs most times contribute to stoppages or delays in funding projects especially when it relates to construction materials. Ikpo, (2016), warned that building construction projects hardly succeed if funds are release in a haphazard manner. He suggested prompt and adequate delivery of funds in order to achieve planned objectives for the satisfaction of the stakeholders. After preparing the schedule for a building, it is most a time breached because of the mode of payment observed by the firm or organization. Payment goes through a lot of processes before it gets to the builder or contractor. The time it takes for project fund to get to the builder is never included in the schedule prepared by the project manager and as such, delays the job and continues to as long as installmental payments lasts.

b. Cost of Securing Government Approval

The high cost of obtaining the government approval for building construction projects is another cog in the wheel of progress of building projects in the South-east, and other Zones in Nigeria. In the South-east, those vested with the authority to approve projects most time demand kick-backs before certifying projects. The time and money taken to approve a building plan, fencing plan, etc. normally affect the smooth take off of the projects. The experience most times discourage housing developers from executing their projects and those who endured and completed the building projects end up renting it at a high price due to the high cost of construction. The activities of the employees of the State Planning Authorities should be monitored to avoid unnecessary interventions of the middle touts in the process of obtaining approval for building development.

c. Imposed Development Fees

In some communities, idle youths and elders gang up and illegally force intended builders and developers to pay huge amount of money as "development fee". This fee differs in different communities and negatively contribute to delays and high cost of building projects in Imo state. Ekeanyanwu (2015) commented that immediately land is purchased, 10% to 15% of the cost is paid as youth fee, while the type of building determines the development fee to be paid to the community for development. This creates discouragement in the minds of the-would-be building developer or owner. This has led to the exhaustion of a great part of the budgeted capital before the completion of the building as the workers are

constantly maltreated and the job frustrated at intervals until the whole ransom charged is paid.

d. Government Policies

The policies of government affect the activities of the construction industry in one way or the other. Unfortunately, the high level of instability in government policies have forced building experts to restrict their investment in building projects due fear of losing their investments to one form of government policy or the other (Okafor, 2016). Government should serve as an encouragement in the construction industry rather than threats to investors in building construction business.

e. Price Fluctuation

Frequent change in the prices of construction materials and labour cost create difficulty in estimating the actual project costs and durations. The fluctuation in the prices of building materials have in no small measure created an environment of mistrust and conflict between project owners and their contractors. The effect normally result in court cases and abandonment of projects. This is a constant occurrence in Imo state and the Southeast in general. Echeme (2009) have blamed this on high level of instability in Nigeria which is characterized by corruption and all manner of indiscipline among the government and the governed.

2.1.4 Conceptual Framework

Conceptual framework is a pictorial description of the variables that affect the successful realization of building construction projects. Therefore, this conceptual framework describes the nature of the dependent and independent variables identified in this study. The dependent variable is the level of building construction delivery while the independent variables are the identified socioeconomic factors the constrain building construction projects in the Southeast as shown in Figure 2.3;

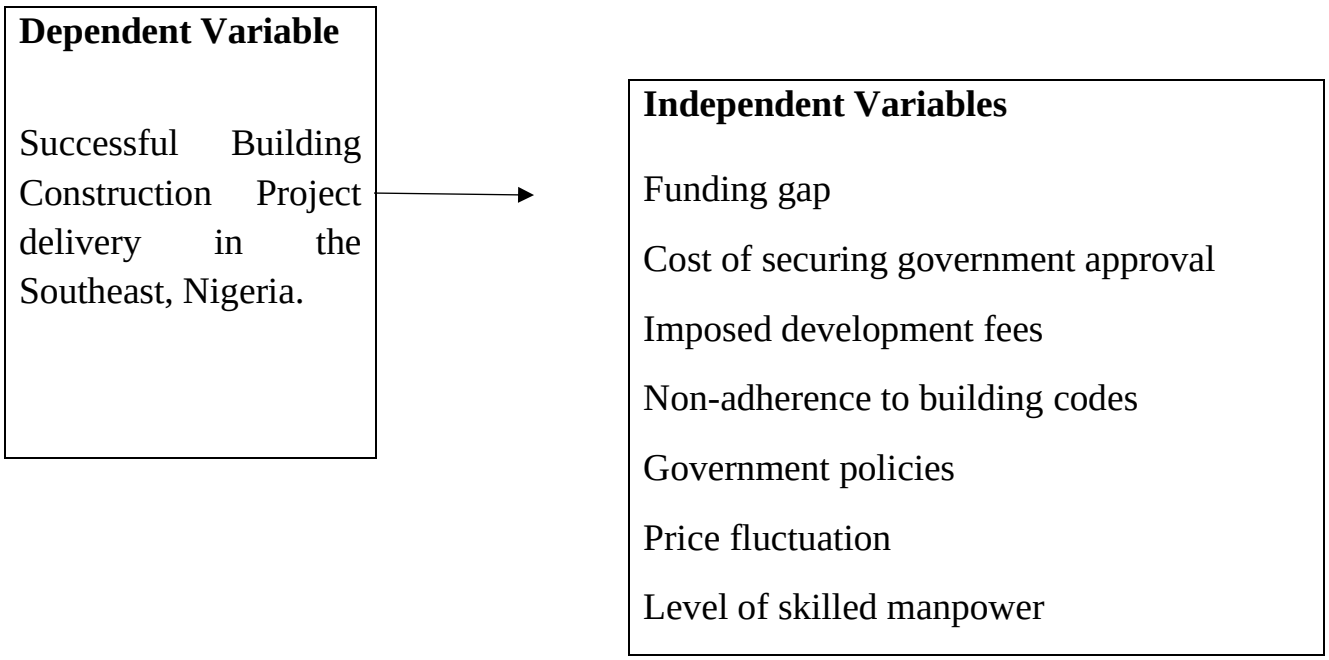

Fig 2.4: Conceptual Framework Showing the Dependent and Independent Variables
Source: Content Analysis (Appendix II)

2.2 Theoretical Framework

The relevant theories and models available in construction project management can be broadly categorized into two divisions. First according to Nwachukwu, (2016) relate to the overall project implementation process from conception through to the completion stages of the project while the second relate to the factors during the use of the facility as different from the success of project management efforts. This study focused on the theories relating to the first category. In line with this, Morris et al (1987) developed a theoretical model on the evaluation of factors that constrain project management success in the construction industry. They emphasized mainly on direct and indirect factors of time, cost and quality as major factors that normally lead to project time overrun; their study on direct factors mentioned materials delay in developing the model. Although they mentioned materials delay but they saw it as a weak factor to delays in construction projects.

However, this study is based on the models developed by Pinto and Sleivin in 1987 and Schwelbe in 2008 on the factors that influence project success either positively or negatively. The strength of the ten factors developed by Pinto and Sleivin (1987) and Schwelbe (2008) can be measured based on project achievement within cost, time and technical specifications coupled with client acceptance. This is because project realization within time, cost, specification and user acceptance are known criteria for judging project success. They recognized

the role of top management as a key factor that guaranties project success. However, Kezner (2003) added that a successful project implementation occurs if the project, comes on-time, on-budget, achieves all the goals originally set for it, and is adopted and used by the clients for whom the project is intended. It implies the successful achievement of time, cost and quality objectives, as well as the quality of the project process.

2.2.1 Project Success Implementation Factors

According to Cleland, Pinto and Sleivin (1987), the process of project implementation involving the successful development and introduction of projects in the organization, presents an ongoing challenge for managers. The building implementation process is complex, usually requiring simultaneous attention to a wide variety of human, budgetary and technical variables. A project manager is often faced with difficult job characterized by role overload, frenetic activity, fragmentation and superficiality. A project manager in spite of all these has the responsibility for successful project outcomes without sufficient power, budget or people to handle all of the elements essential for project success. In addition, projects are often imitated in the context of a turbulent, unpredictable, and dynamic environment. A project manager would be well served by more information about those factors critical to project success. The project manager requires the necessary tools for him to focus attention on important areas and send different priorities across different project elements. It can be demonstrated that

set of factors under the project manager's control can have a significant impact on project implementation success. The project manager should be better able to efficiently and effectively deal with many demands created by his job, channeling his energy more efficiently in attempting to successfully implement the project under development. His controlling ability is demonstrated in the ten key factor model of the project implementation profile (PIP) below:

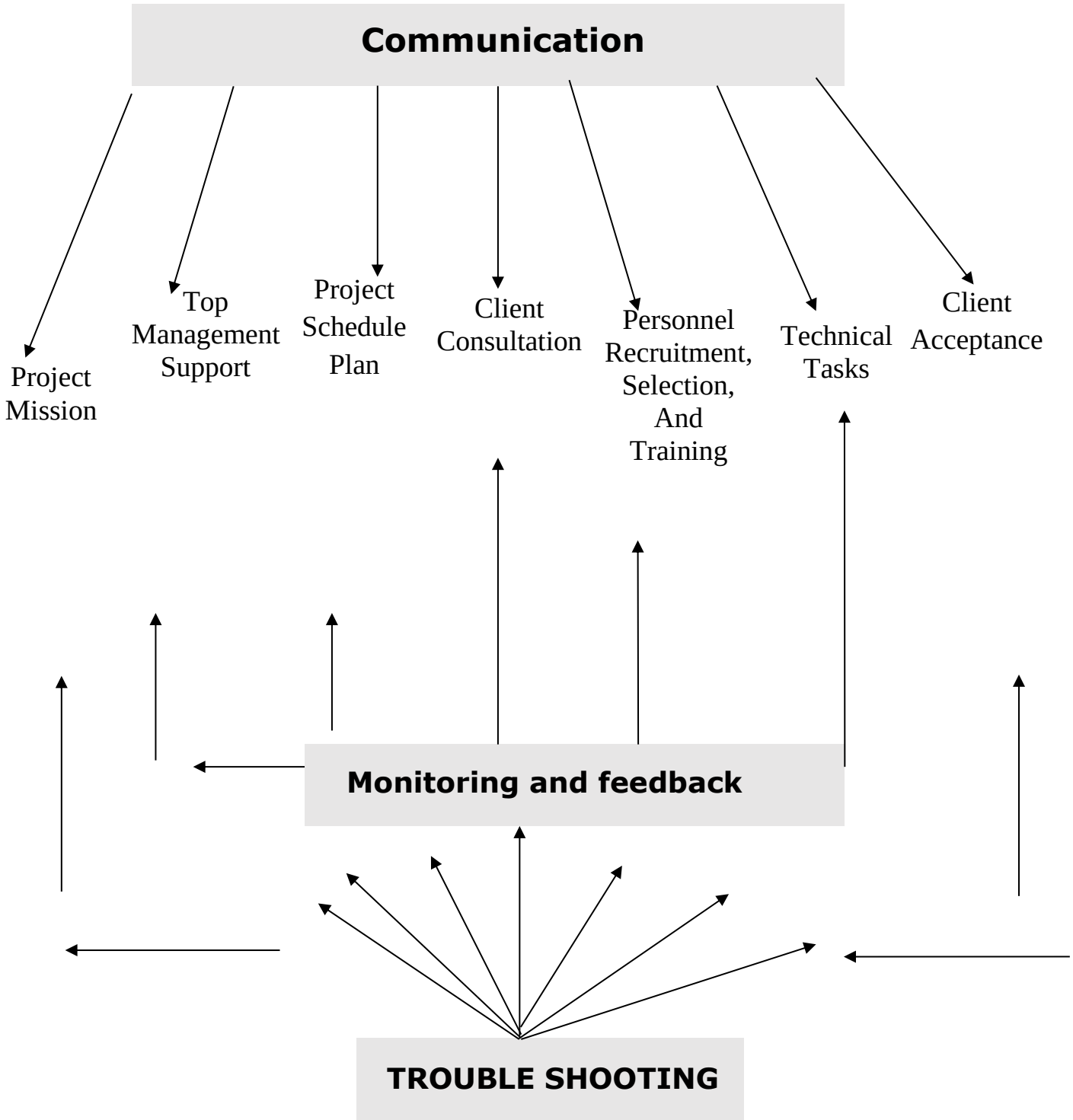

Figure 2.5: Ten Key Factors of Project Implementation Profile (PIP)
Source: Project Management Handbook

Slevin et al (1986) studied many projects in their bid to evaluate factors that constraint success in project management; they articulated many factors but narrowed them down to what they christened ten key factors of project implementation profile a reflected pictorially above.

a. Communication

The need for adequate communication channel is extremely important in creating an atmosphere for successful implementation of a building project. Communication could best be described as the life wire of any project implementation success. There should be prompt communication to the building or project mission, good information flow with the top management, the building or project scheduled plan, always consulting the client, adequate communication to personnel issues like recruitment, motivation and training etc, good understanding of the technical task and staff, sequential monitoring of all work and processes given feedback the stakeholders, always active in communication with trouble shooting indicators, communicating with the client at all times sensitizing him with every issue that will enable him to accept the product after execution.

b. Project Mission

Project mission is the same as clearly defined goals and objectives. Project mission has been found to refer to the condition where the goals of the building project are clear and understood not only by the project team involved but by the other departments in the organizations.

c. Top Management Support

Slevin, et al (1979) noted that management support of project especially building construction has long been considered of great importance in distinguishing between their ultimate success or failure. Beck (1979), sees project management as not only dependent on top management for authority, direction, and support, but as ultimately the conduct of implementing top managements plan as goal for the entire project organization. The degree of ultimate acceptance or resistance to the project shows the degree of management support of the project.

d. Project Scheduled Plan

According to Pinto et al (1989) this refers to the importance of developing a detailed plan of the required stages of the implementation process. This is the origin of life cycle concept in building constructing projects.

e. Client Consultation

The need client consultation has been found to be increasingly important in attempting to successfully implement a building project. Manly, (1987) found out that the degree to which clients are personally involved in the implementation process will cause great variation in their support for the project.

f. Personnel Issues

Personnel issues include recruitment, selection and staff training for the building project. An important, but often overlooked aspect of the building implementation process concerns the nature of the personnel involved. In many situations, personnel for the building team are chosen by the client especially in

the public section building construction with less than full regard for the skills necessary to actively contribute to the implementation success.

g. Technical Tasks

This is very important in that the people who understand the project must manage the implementation. Slevin (1987) writing on implementation risk analysis identifies two of the eight risk factors as being caused by technical incompatibility.

h. Monitoring and Feedback

Monitoring and feedback refer to building project control system or processes by which at each stage of the implementation, key personnel receive feedback on how the project is comparing or conforming to initial projections in time management, cost, quality and materials.

i. Trouble Shooting

Problem always exist in almost every project especially building construction, they could be seen as conflicts which lead to the success or failure based on how it is being managed by the stakeholders. In fact, conflicts which lead to the success or failure based on how it is being managed by the stakeholders. Conflict according to Nwachukwu, (2010) is seen as an indispensable force that propels the wheel of success in any building project implementation process.

j. Client Acceptance

This is the final stage in building project implementation process at which time the ultimate efficiency of the project is determined. For there to be a successful

handover of the developmental product, there is need to carry the client along by prompt communication and feedback throughout the stages of the building project life cycle.

2.3 Empirical Review

Poor building construction project performance in terms of schedule and cost overruns do not just occur naturally, there are a number of factors during the construction process that when not managed properly can lead to schedule and cost overruns. Causes of schedule overruns are factors that lead to construction projects not being realized according to the planned scheduled time at the inception of project; while causes of cost overruns are factors that lead to project budget overshoot and actual project cost exceeding the planned project cost.

According to Ade and Babatunde (2015), there are six (6) major causes that would lead to poor construction project performance in the South-east Geopolitical Zone. The identified causes were ranked as follows: design error, poor site condition, delay in payment, financial incapability of client, financial incapability of contractor and non-adherence to building codes, and availability of subcontractor and supplier. Analysis of the factors using Relative Severity Index (RSI) technique, financial incapability of the client was ranked highest in the Niger Delta States and this causes poor funding of the projects leading to failure and abandonment. But these authors have failed to consider the combine effect of the six factors to project funding in the Zone.

While Hassan (2012) identified a total of 42 factors that causes poor performance of construction projects in Northern Part of Nigeria. The Factor Analysis result ranked the top ten causes as follows: technical incompetence, poor organizational structure, and failures of the enterprise, the low level of experience personnel, high cost of acquiring and securing land, inadequate project preparation, planning and implementation, delays in issuing information to the contractor during construction stage, lack of coordination at design phase, negligence of professional building codes, change in the scope of the project, Government policies, tendering maneuvers by contractors, such as front-loading of rates, incomplete design at the time of tender, bad allocation of labour inside the site and delays in decisions making by government were ranked the top ten causes of construction project performance. The t-test result show that change in the scope of the project by clients is the most critical factor inhibiting construction project performance in the area. Hassan's study only reduced the factors to ten and used t-test to determine their effects on the performance of construction projects. But, the collective effects of these ten factors are yet to be ascertained.

However, in a related work by Kwesi (2014) in Ghana on the factors that constrain public building project in Accra. This was conducted based on the rising cases of building collapse in the area and its effects on economic condition of the citizens. He identified 5 major factors that contributes to the rising cases of building collapse in Accra Metropolis. They include; intentional negligence of the existing building codes, low level of manpower, use of substandard materials,

low level of monitoring by the constituted Government authority, and increase in the cost of building materials. The correlation result of his study show that all the five factors are significant contributors to building collapse in Accra. This is because of significant correlations with building collapse. The study also show that intentional negligence of the existing building codes is a major contributor because that is suspected to be reason behind the low level of manpower, use of substandard materials, and low level of monitoring by the constituted Government authority. However, he failed to analyze the overall impact of his findings to the economic condition of Accra as he earlier claimed. Furthermore, Eshofonie (2008) revealed a total of 40 causes of construction project low performance in Ogun State, with the top ten causes being the following: cost of materials, project approval cost and bureaucratic processes, incorrect planning, wrong method of estimation, ignorance of building ethics and regulations, contract management, fluctuation of prices of materials, previous experience of contractor, Absence of construction cost data, additional cost and project financing. After analysis with discriminant analysis methodology, it revealed that the identified factors are significant to building construction project performance with fluctuation of material prices.

It is pertinent to indicate that construction project performance regarding schedule and cost are intertwined, and as such, a serious challenge in one will definitely affect the other. This fact is revealed in the work of Akinsiku and Akinsulire (2012) which shows that, financial or cash flow difficulties, financial

difficulties faced by contractors and public agencies, frequent change order and design, failure to pay for completed works, shortages of resources, considerable additional work, escalations of material prices, increases in the scope of work, delay in design work and late delivery of materials are the top ten causes of schedule and cost overruns on construction projects. The economic implication of these factors on construction projects are yet to be established.

In another related study, Ndukaku, (2016) when studying the level of monitoring and implementation of projects in Nigeria mentioned that increase materials cost, shortage of materials during construction, use of non-professionals, improper design specification, non-adherence to professional building codes, lack of fund for payment, improper planning, instability in government policies, materials theft and pilferages, poor project evaluation, are responsible for project failure and abandonment in Nigeria and other developing countries in the world. After analysis with the aid of Relative Importance index, concluded discovered that instability in government policies and lack of fund for payment as the most pressurizing factors that contributed to low level of successful project delivery witnessed in most developing countries, Nigeria inclusive.

Barbara (2015), however identified poor funding of projects by the clients and contractors, negligence of the contractors to building codes, bureaucratic problem in securing government approval for project plan and its associated costs, price fluctuation of construction materials and labour, low skilled workmen, and indiscipline in the award of construction contracts, as the factors that influence

project delivery in Niger Republic. The main objective of his study is to identify the success factors for the developmental team projects in Niger. His findings after analysis with t-test show that all the factors are significant with poor funding being the most critical factor affecting the success of the projects in the area. Okonkwo (2015) identified unstable government policies, ignorance of building ethics, fluctuation in price of construction materials, use of unskilled and inexperience workmen, as the critical factors that impede success in the construction projects in Delta State. He adopted Chi-square in the analysis which show significant effects. But he failed to determine whether there is a collective effect of the critical factors on the dependent variable of his study.

Based on the content analysis conducted on the above literature review, the following factors were identified as critical to building construction projects in the South-east, Nigeria. They include: funding gap, cost of government approval, non-adherence to building codes, instability in government policies, constant price fluctuations, and low level of skilled workmen.

Research Gap

Most of the researchers in this study have studied problem of construction projects in different parts of Nigeria but none have been able to investigate the problem as it relates to the Southeastern States. The economic effects of these factors were not determined by the reviewed studies. Also, the individual and collective effect of the identified factors on project performance have not been ascertained. This study adopted Multiple Regressions Analysis technique in the

analysis of the factors identified whereas no previous study reviewed adopted the technique in data analysis.

This study intends to fill these existing gaps through a critical study and analysis of these factors and proffer solution that will improve the performance of building construction projects in the South-eastern Zone of Nigeria.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

Various research design exist but this study adopted a survey design. This is because this study involves field study. The design enabled the researcher to visit many building construction sites and civil engineering firms within the study area in order to have a better understanding of the factors militating against the successful delivery of building projects. Also, the design was adopted to know the extent to which multiple regression analysis model and correlation analysis method, which have gained the attention of many scholars in social science studies, can be applied in the analysis of the factors constraining building construction projects in the Southeast, Nigeria. Based on this, questionnaire was designed using Likert's five-point scale to solicit responses from the target respondents (participants) in building construction projects in order to gather firsthand information on the level of influence posed by these identified socioeconomic factors constraining building project delivery.

3.2 Population of the Study

The population of the study is estimated at seven hundred and fifty (750) participants in the building construction activities in the Southeast, Nigeria. They comprise of both the private and public participants in building construction

projects. They include the building contractors, architects, civil engineers, estate surveyors and clients.

3.2.1 Sampling Procedure

In order to ascertain the true representation of the population of the study, the study adopted Yaro Yamani sample size formula in determining the sample size.

Hence, $n = N/1 + N(e)^2$

Where n = sample size, N = population, e = error term which is estimated at 5%.

So, $n = 750 / 1 + 750 (0.05)^2$

$n = 750 / 1 + 750 (0.0025) = 261$

The study therefore sampled two hundred and sixty-one respondents out of the 750estimated population of the study. This was done using purposive sampling technique in order to retrieve data from those that were directly involved building construction projects.

3.3 Method of Data Collection

The data for the study were collected through questionnaire and discussion with some experts in the area of building construction projects. Based on the problem identification gathered from the survey of different literatures, they were compiled and structured into questions that depict the issue of the factors militating against building construction project delivery.

However, both primary and secondary sources of data are utilized for this study. This is to ensure adequate historical background is set for the study by way of comprehensive literature search, while the practical implication/realities of the subject matter is assessed by way of field survey for the collection of first-hand information from the key building construction stakeholders.

a. Primary Data

The primary data used in this study is questionnaire designed by surveying the Factors militating against building construction projects in the Southeast, Nigeria. This process marked a framework for the study, after which some of the factors militating against building construction faced during construction execution stage highlighted by different authors guided the researcher in constructing a questionnaire for this purpose. The questionnaire was issued to major construction stakeholders in order to collect first-hand information from them which guided the findings to be made in this study.

The questionnaire used for this study incorporated the Likert Five Point Scale to facilitate an evaluation of responses between the minor to major ranges. Likert's scale allows the respondents to indicate their level of agreement or disagreement on the statements made in the questionnaire. The scale ranges from strongly agreed (SA) = 5 points, Agreed (A) = 4, Neutral (N) = 3, Disagreed (D) = 2, and Strongly Disagreed (SD) = 1. The table below depicts the format for the questionnaire.

Scale	SD	→		→	SA
	1	2	3	4	5

b. Secondary Data

Secondary sources of data for this study include the Building construction firms, Ministry of Housing and Rural Development, Private Estate Developers, Relevant literatures, textbooks, journals, internet, etc.

3.4 Pilot Study

Pilot studies are conducted to pre-test the study instruments which are validated in the process (Kothari, 2004). The pilot study for this study was carried out in Imo State. The drafted questionnaire was administered thirty (30) respondents, four (4) from each category mentioned (contractors, architects, civil engineers, estate surveyors and clients) in the area. The data collected from them were analyzed and tested for validity and reliability of the research instruments.

3.4.1 Validity of Research Instrument

Nworuh (2007) opined that all data measuring instruments particularly in the social sciences contain some degree of errors no matter how precise and careful the efforts of the observation may seem to be. Our research instrument (via questionnaires) was duly evaluated by the research supervisor and its administration in the selected areas under study. Besides, the instrument was also

sent to research professionals outside the pressure audience, and the result also confirms the genuineness and authenticity both in framing and content.

3.4.2 Reliability Test

Reliability referred to the degree to which it is measuring; meaning that instrument should generate similar results when repeated overtime. Several methods of ascertaining reliability of data exists, but for the purpose of this study, the test-retest method was adopted after the instrument has been retrieved from the sample used for the pilot study. Hence, the research instrument was administered to a certain group of the respondents, the result collected and after two weeks, the same questionnaire was also given to the same respondent group. The two results were correlated and a result of r= 0.88 confirms the reliability of the research data.

3.5 Method of Data Analysis

The method of data analysis employed in this study comprises both descriptive and inferential statistics. The inferential analysis involved Multiple Regression Analysis (MRA) techniques.

3.5.1 Descriptive Statistics

Descriptive statistics, which includes frequencies, percentages, were used to analyze the data obtained from respondents citing their experience in the building construction projects in Imo State.

3.5.2 Inferential Statistics

The data collected were analyzed and modeled using Multiple Regression Analysis (MRA) involving coefficient of multiple correlation (R), coefficient of determination (R^2), and the F-test. The result of the Multiple Regression Analysis was used to develop a model that will be used to make the conclusions and recommendations. The data analysis was thus conducted in following ways;

The tests of significance of the derived models were carried out through a combination of F – test and t – test. In doing this, we apply a regression model of the form:

$$Y=b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \ldots\ldots + b_nx_n + e_0 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3.1)$$

Where: Y = Building Construction Project delivery in Imo State, Nigeria (Dependent variable).

X_1, X_2, . . .X_n= identified constraining factors in the project performance (Independent variables).

b_0, b_1, b_2, . . .b_n = coefficients to be estimated. e_0 = Error margin in the estimation.

The regression coefficient (b_i) is estimated using the formula:

$$\frac{\text{b1} = \Sigma X1Y\Sigma X22 - \Sigma X2\Sigma X1X2}{\Sigma X12\Sigma\ X22 - (\Sigma X1X2)2} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.2)$$

$$\frac{b_2 = \Sigma X2Y\Sigma X12 - \Sigma X1\Sigma X1X2}{\Sigma X12\Sigma\ X22 - (\Sigma X1X2)2} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (3.3)$$

$$b_0 = Y - (b_1x_1 + b_2x_2) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.4)$$

The correlation coefficient (R) which measures the magnitude of the relationship between the dependent variable (Y) and independent variables (X_1, X_2, ……X_n) is determined using:

$$R = \frac{N\sum Xi\ Yi - (\sum Xi)\ (\sum Yi)}{\{[N\sum Xi2 - (\sum Xi)2]\ [N\sum Yi2 - (\sum Yi)2\ \}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.5)$$

Also, the coefficient of determination (R^2) which measures the extent of variation in the dependent variable (Y) that is being explained by the variation in the independent variables (Xi) is given by:

$$R^2 = \frac{SSR}{SST} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.6)$$

Where SSR (Sum of Squares due to Regression) is given as:

$$SSR = \frac{b\Sigma XiYi - (\Sigma XiYi)}{N} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.7)$$

And

SST (Total Sum of Squares) is given by:

$$SST = \frac{\Sigma Yi2\ - (\Sigma Yi)2}{N} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.8)$$

However, the Sum of Squares due to Error is given by:

$$SSE = SST - SSR \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.9)$$

In testing the stated hypotheses, the F – test and t – test were used.

The F- test statistic is calculated using the formula:

$$F * cal = \frac{MSR}{MSE} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.10)$$

Where MSR (Mean Squares due to Regression) is given as:

$$MSR = \frac{SSR}{K} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.11)$$

where “k” is the number of independent variables.

Also the MSE (Mean Square due to Error) is given by:

$$MSE = \frac{SSE}{n-k-1} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.12)$$

where “n” is the number of observations or sample size.

All the above parameters are summarized in a table of Analysis of Variance (ANOVA) as follows:

Table 3.1 ANOVA for Multiple Regression

Source of Variation	Sum of square (SS)	Degree of Freedom (df)	Mean Square (MS)	F– ratio
Regression	SSE $=R^2\Sigma Y^2$	K	MSR = SSR / K	F*= MSR / MSE
Error	SSE=SST-SSR $=\Sigma Y^2(1-R^2)$	n-k-1	MSE = SSE / n-k-1	
Total	SST=SSR+SSE $=\Sigma y^2$	n-1		

Source: Nworuh, (2007):Test for Significance in Multiple Regression; *Fundamentals of Applied Quantitative Techniques for Management Decision*, Bon Associates – HRDC, Nigeria, pp. 90

3.5.3 Decision Rule for Testing Hypotheses

F – test:

Accept the null hypothesis (Ho) if $F^* < F_{1-\alpha}$; k, n-k-1 degree of freedom, otherwise the null hypothesis (Ho) is rejected. $F_{1-\alpha}$; k, n-k-1 is the critical value obtainable from the standard F – distribution table, and α = the chosen level of significance, which for the purposes of this study is 0.5 or 5%.

The F-Statistic will test the joint hypothesis that:

H_O: $b_1=b_2=b_3\ldots\ldots\ldots\ldots b_k = 0$

H_A: not all bk are equal to zero.

t - test

The null hypothesis (Ho) i.e. b = 0 is accepted at α level of significance and n-k-1 degree of freedom, if $t^*_{cal} < t_{1-\alpha}$, n-k-1 degree of freedom. Otherwise, the null hypothesis (Ho) is rejected. $t_{1-\alpha}$; k, n-k-1 is the critical value obtainable from the standard t – distribution table, and α = the chosen level of significance, which for the purposes of this study is 0.5 or 5%.

Alternatively, the null hypothesis is accepted if the p-value is less than 0.05 the level of significance.

3.6 Definition of the Variables Used for Analysis

i. Funding gap (X_1),
ii. Cost of securing government approval (X_2),
iii. non-adherence to building codes (X_3)
iv. Government policies (X_4)
v. Price fluctuation (X_5)
vi. Level of skilled workmanship (X_6)
vii. Successful Building Construction Project delivery (Y)

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Analysis of the Respondents Scores on the Effects of the Factors Militating against Successful Building Construction Projects Delivery Southeast, Nigeria (Primary Data from Questionnaire Distributed)

The Statistics of questionnaire distribution and data collected were shown below in Table 4.1.

Table 4.1: Statistics of Questionnaire Distributed and Returned.

Category of Respondent	No. Distributed	No. Returned	No. Discarded for Errors	No. Used for Analysis
Contractors	50	46	2	44
Civil Engineers	50	42	1	41
Architects	50	49	2	47
Quantity and Estate Surveyors	50	43	1	42
Clients	50	48	5	43
Project supervisors	11	9	0	9
Total	**261**	**237**	**11**	**226**

Two hundred and sixty-one (261) sets of questionnaires were distributed to the respondents, two hundred and thirty-seven (237) were returned. Out of this 237, eleven (11) were discarded due to error in filling the questionnaire, hence two hundred and twenty-six (226) were used for analysis representing 86.6% of the total population, implying that there is a high level of response rate. The analysis

made in this study is based on the 226 questionnaire retrieved from the target respondents.

Appendix III presents the summary of the two hundred and twenty-six respondents, on their assessment of the effects of the factors militating against building construction project delivery in the Southeast, Nigeria.

Tables 4.2 and 4.3 below illustrates how Appendix III, which summarizes the scores of 226 respondents, were derived.

Table 4.2: Scores for X_1 to $X_6$for Respondent 1

FACTORS	1	2	3	4	5	TOTAL
X1	5	5	5	5	5	25
X2	4	1	3	2	4	14
X3	5	4	3	3	3	18
X4	5	4	5	4	2	23
X5	4	2	4	4	3	17
X6	4	5	5	5	3	22

For example, in the questionnaire (Appendix 1), each respondent was to indicate the degree of agreement or disagreement with five statements related to the independent variable, “funding gap” (X_1). The first respondent scored 5 for each of the five statements, giving a total score of 25. This is based the Likert

summated scale in which the maximum score for each independent factor is 25 and minimum score is 5.

Table 4.3: Building Construction Project Delivery for Respondent 1.

Dependent Variable	QUESTIONS/SCORES												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
Y	2	4	3	3	4	4	5	5	4	4	5	5	48

Table 4.3 which is also based on the Likert's scale has a maximum score of 60 and a minimum score of 12. The questions/statements from where the scores were derived are in the questionnaire, in Appendix I. Twelve questions/statements on the factors against building construction project delivery in the Southeast, Nigeria were considered adequate.

4.1.1 The Mean Scores of Each of the Factors. (Y, X_1 to X_6)

The Table 4.4 show the average level of performance of building construction projects with respect to the contribution of each independent factors.

Table 4.4: The Descriptive Statistics Scores of the Factors (226 Respondents)

	Mean	Std. Deviation	N
Y	27.7434	4.26621	226
X1	19.1327	4.31227	226
X2	18.4381	4.83856	226
X3	16.7876	4.27489	226

X4	18.8982	4.02031	226
X5	18.4735	4.50301	226
X6	17.1814	4.80072	226

Table 4.4 below, summarized from Appendix II, reveals that 27.74 is the average level of success achieved in delivery of building construction projects, given the effects of six key militating factors; Funding gap, Cost of securing Government approval, Non-adherence to building codes, Government policies, Price fluctuations and Level of skilled workmanship, have strong influence on building construction project delivery in Southeastern States.

4.1.2 The Regression of Building Construction Delivery on the Six-Factor Model of the Militating Factors

Table 4.5, shows the result of regression analysis executed with Statistical Package for Social Sciences.

Table 4.5: Result of Multiple Regression Coefficients of Y on X_1 to X_6

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.158	2.597		10.072	.000
	X1	-.295	.070	-.128	-4.807	.003
	X2	-.107	.059	-.121	-3.192	.035
	X3	-.310	.068	-.211	-5.113	.000
	X4	.274	.071	.164	4.455	.015
	X5	-.207	.062	-.113	-4.727	.006
	X6	.237	.057	.154	3.377	.018

a Dependent Variable: Y

The multiple regression model that can assist to predict the level of building construction project delivery in the Southeast, Nigeria as depicted by the analysis is as follows:

$Y = 26.158 - 0.295X_1 - 0.107X_2 - 0.310X_3 + 0.274X_4 - 0.207X_5 + 0.237X_6$… (Model Derived)

With the derived equation, we can estimate the level of successful building construction project delivery when the values of the six variables are known. The coefficients in the equation indicate the marginal effect of each of the factors on the delivery of building construction projects, when all the other factors are held

constant. They represent the increase in Y, if each factor is increased one unit, while holding all the other factors constant.

Four factors (X_1, X_2, X_3 and X_5) exhibited negative effect on the delivery of building construction projects. This means that as any of the factors increase, the level of building project delivery decrease.

To illustrate, X_2 = -0.107 indicates that the level of building construction project delivery decreases by 0.107 for every one unit increase in Cost of obtaining Government approval, when all the other factors are held constant. We can make similar arguments for each of the remaining factors.

On the other hand, Government policies (X_4) and level of skilled workmanship (X_6) show positive effect on the level of building construction project delivery in the Southeast, Nigeria. This implies that as Government policies and level of skilled workmanship improves, building construction project delivery increases.

Table 4.6: Model Summary of the Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.803(a)	.745	.621	.99934	3.675

a Predictors: (Constant), X6, X4, X5, X2, X3, X1

b Dependent Variable: Y

The multiple correlation coefficient (r) of 0.803 indicated a very strong positive relationship between building construction project delivery and the six major predetermined militating variables.

The multiple coefficient of determination (r^2) of 0.745 indicates the proportion of the variance in the level of delivery of building construction projects explained by all the independent (explanatory) variables. An r^2 value of 0.745 indicates that funding gap, cost of obtaining government approval, non-adherence to building codes, government policies, price fluctuations and level of skilled workmanship jointly account for 74.5% of the variance in the success level of building construction projects in Imo State, while 25.5% of the variations remained unexplained. A Durbin-Watson value of 3.675 is good and confirms the high level of correlation existing between building construction project delivery and the identified militating factors.

The t-values in column 5 of Table 4.5 are quite large and significant and are used to test the significance of each of the six major militating factors in the delivery of building construction projects.

4.1.3 Hypotheses Testing

The dependent variable Y was regressed on each of the independent variables to determine the importance of each factor. The t-test statistics, which test the significance between means is effective when the standard deviation of the population is unknown, is used to test the significance of the independent variable in the model. We wish to estimate the extent to which each constraining factors contributes to level of building construction project delivery in the Southeast, Nigeria. The t-test result in Table 4.5 modified to Table 4.7 were used for this purpose.

Table 4.7: t-test Result of Multiple Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.158	2.597		10.072	.000
	X1	-.295	.070	-.128	-4.807	.003
	X2	-.107	.059	-.121	-3.192	.035
	X3	-.310	.068	-.211	-5.113	.000
	X4	.274	.071	.164	4.455	.015
	X5	-.207	.062	-.113	-4.727	.006
	X6	.237	.057	.154	3.377	.018

a Dependent Variable: Y

Hypothesis One

H_{01}: The effect of each factor on successful building construction project delivery in South-east, Nigeria is not significant.

Factor I: Funding gap

The t-cal. value of -4.807is significant at 0.05 level, implying that at 0.05 level of significance X_1 is negatively significant to Y. We therefore reject null hypothesis with a conclusion that funding gap can significantly contribute to the problem to building construction project success.

Factor II: The Cost of Government Approval

The t – cal value of -3.192 is significant at 0.035 level, implying that at 0.05 the cost of securing government approval is significant to successful building construction project performance in the Southeast, Nigeria.

Factor III: Non-adherence to building codes

The t- cal value of -5.113is significant at 0.000 level, implying that at 0.05 level of significance, X_3as indicated in derived model (equation) is a significant predictor of Y.

Factor IV: Government policies

The t-cal value of 4.455is significant at 0.0001 level, implying that at 0.05 level significance, government policies is a significant predictor of successful building construction projects in the Southeast, Nigeria.

Factor V: Price fluctuation

Table 4.7 show a t-calculated value of -4.727 which is significant at 0.0001 level of significance. This means that price fluctuation is a significant militating factor to successful building construction delivery in the Southeast, Nigeria.

Factor VI: Level of Skilled Workmanship

The t-value of 3.377 in Table 4.7 show that the level of skilled workmanship is also significant at 0.05. This means that the level of skilled workmanship critically affected the level of successful building construction projects in the Southeastern Nigeria.

Conclusion: Based on the hypotheses tests, we reject the null hypothesis. Therefore, the study concludes that the effect of each factor on successful building construction project delivery in South-east, Nigeria is significant.

Hypothesis Two

H_{02}: The overall effect of the factors on successful building construction project delivery in South-east, Nigeria is not significant.

This test was done using the ANOVA result from the multiple regression output.

Table 4.8: Analysis of Variance (ANOVA) for Multiple Regression

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	592.267	6	98.711	6.171	.000(a)
	Residual	3502.848	219	15.995		
	Total	4095.115	225			

a Predictors: (Constant), X6, X4, X5, X2, X3, X1

b Dependent Variable: Y

The F-statistic provided by the regression analysis is suitable for this test. From the regression analysis, calculated F-test value of6.171 is significant at 0.000 level of significance. At a level of significance of 5%, then we reject H_{02}, and accept H_{A2}, and conclude that the overall effect of the factors on successful building construction project delivery in South-east, Nigeria is significant.

So, the derived model is also significant in predicting the level of building construction project delivery while considering the militating factors like funding gap, cost of obtaining government approval, non-adherence to professional building codes, government policies, price fluctuations, and level of skilled workmanship.

4.1.3 Priority Ranking

The priority ranking of the factors was done to determine the most significant factors that affects successful building construction delivery in the Southeast, Nigeria. This was done based on their level of effect on the delivery of building construction projects by considering their t-test values.

Table 4.9: Priority Ranking of the Factors

S/No.	Identified Militating Factors	t-calculated Values	Ranks
1	Funding gap	-4.807	2nd
2	Cost of obtaining Government approval	-3.192	6th
3	Non-adherence to professional building codes	-5.113	1st
4	Government policies	4.455	4th
5	Price fluctuations	-4.727	3rd
6	Level of skilled workmanship	3.377	5th

From the above tests and analyses, we observed that non-adherence to professional building codes exert the greatest effect on successful building construction project delivery in the Southeast, Nigeria, followed by poor funding,

price fluctuations, etc. This not unconnected to the high level of negligence of most contractors to professional building codes established by the Government agency. This is caused by poor funding of building projects which does not allow the contractors to seek for building codes, since the nature of the funding may be irregular and hardly support the completion of building construction projects. This instability in government policies may have contributed to high level of poor funding, non-adherence to professional codes and instability in the price of building construction materials within the South-eastern States and its environs.

4.2 Discussion of Results

Following a critical analysis made in the study, the discussions were made in line with the study objectives. Based on that, the following points can be made:

a. To identify factors militating against successful building construction project delivery in South-east, Nigeria.

The high level of failure and abandonment in most building projects in the Southeast, Nigeria are becoming worrisome. This study investigated the factors that can lead to this abysmal performances and identified six major militating factors constraining the successful delivery of building construction projects. They include; unstable government policies, price fluctuations, funding gap, non-adherence to the professional building codes, high cost of obtaining government approval and the low level of skilled workmanship witnessed in most building construction sites. The study revealed that these militating factors constrained

building construction project performance in one way or the other. Hence, influence of these factors contributed to the 27.74 average performance of building projects in the Southeastern Nigeria (see Table 4.4).

b. To analyze the effect of each factor on successful building construction project delivery in South-east, Nigeria.

The derived equation from Table 4.5 show that four factors (X_1, X_2, X_3 and X_5) exhibited negative effect on the delivery of building construction projects, meaning that they increase as the level of building project delivery decrease. The implication is that high level of funding gap, cost of securing government approval, non-adherence to standard building codes and price fluctuations minimizes the level of delivery of building projects in the Southeast, Nigeria. This finding is not far from the findings of Hassan (2012). In his study, he emphasized on the problem of price fluctuations and the inverse relationship with construction project delivery in Zimbabwe. However, government policies (X_4) and level of workmanship (X_6) show positive effects meaning that an increase or decrease in any of the two factors increase or decrease successful building construction projects in the area. Hence, Government policies should be made to support development to improve building construction project delivery. Also, contractors of building projects should endeavor to employ the services of skilled personnel in all aspects of building construction activities to ensure standard delivery of projects.

The hypothesis testing from the calculated t-values in Table 4.7, show that all the identified militating factors have significant effect on the level of building project delivery in the Southeast, Nigeria.

i. Funding is one of the major factors that has been hunting successful delivery of projects in the Southeast and Nigeria in general. This is because of the critical roles that proper funding play in ensuring project success. So the funding gap witnessed in most building project activities have in no small measure affected the delivery of building projects as posited by Ikpo (2016). Going by this, there is an urgent need to ensure proper flow of funds throughout the project cycle in order to guarantee success in the execution of projects, especially, building projects.

ii. Cost of securing government approval most times discourage the continuation of construction project activities, especially, those stopped by Government agencies due to lack of evidence of project approval by the necessary authorities. The delay experienced in seeking approval from the Government building planning offices due to bureaucratic bottlenecks delay the smooth execution of projects, most cases lead to failure to deliver projects according to plan or outright abandonment of projects. This view has equally been pointed out by Onyeulor, (2013), Ade and Babatunde (2015), and Ndukaku, (2016).

iii. Non-adherence to building codes is also significant in predicting the level of successful building project delivery in the Southeast geopolitical zone of Nigeria. Unfortunately, the rate at which building contractors neglect the established standard professional building codes and ethics has assumed a critical dimension as this has led to many building projects collapse in Nigeria as posited by Onyeulor, (2013). Evidences are bound in most States in Nigeria, especially, the Southeastern States. The most recent case is the collapse of an 8-storey building that collapsed under construction in New Owerri at Musa Yar' Adua Drive, Imo State on 2nd May, 2020. Field study show that there was no adherence to building codes as the level of materials used in the building construction are below standards. Most pillars and beams were constructed with a mixture of 10mm and 12 mm rods which encouraged the collapse. Again, most of the workers seen appear to be road side workmen who not to understand the need for quality materials in such high rise building as poor quality of blocks were seen littered all over the construction site. Contractors of building projects should be admonished to adhere strictly to the approved building codes and appropriate sanction should be given to any erring contractor. The appropriate authorities like COREN, Nigeria Society of Engineers should equally ensure that contractors are registered to help discriminate the fake contractors.

iv. Government policies is another factor militating against building project delivery in the Southeast, Nigeria (see Tables 4.7). The study therefore

agree that the high level of instability witnessed in the policies of the Government of Southeast States is paramount because policies affect the economic variables which determines the effectiveness and/or ineffectiveness of construction projects delivery (Okafor, 2016). This instability in government policies may have contributed to high level of instability in the price of building construction materials and non-adherence of contractors to building codes within the Southeast States and other States in Nigeria. So, various Government in the Southeast should formulate and enforce policies will reduce and stabilize the economic variables like interest rates, prices of construction materials, etc. Hence, stability in policies mean economic stability and development.

v. Price fluctuation is also a significant factor militating against successful delivery of building projects in the Southeast, Nigeria. This is a product of policy somersault and instability witnessed in Nigeria. Incessant price fluctuations does not allow smooth execution of plans, no matter how accurate the plan is. There are evidences that every month, price of construction materials must move up and down many times. This explains the level of inflation the Country is facing which agrees with the study of Ikpo (2016) and Onyeulor, (2013). There is also the tendency that price fluctuation frustrates smooth funding of building projects and disrupt successful delivery of projects.

vi. Level of skilled workmanship employed by most building contractors to handle construction activities is highly affecting successful delivery of such projects. However, appropriate workmen that are skilled in building construction should be hired to execute construction activities quality delivery performance. It important to stress here that human factor is the only productive factor that controls the other factors of production (Okorafor, 2007). If the wrong personnel are chosen, they will deliver wrong output. Hence, Okonkwo (2015), Barbara (2015), and Onyeulor, (2013), have it that skilled workmanship is critical to successful delivery of construction projects, especially, building construction projects.

c.) To analyze the effect of the overall factors on the successful building construction project delivery.

The overall effect of the factors on successful building construction project delivery in South-east, Nigeria is significant as seen in Table 4.8. In as much as the militating factors individually affected building project success, the factors also collectively affected building project success in the Southeast, Nigeria. this implies that the findings are consistent and should be considered in the implementation of building projects and other construction projects in the Southeastern States of Nigeria.

d.) To rank the factors so as to determine the most critical factor that affect successful building construction project delivery in South-east for decisive purposes.

The priority ranking in Table 4.9 revealed that non-adherence to professional building codes exert the greatest effect on successful building construction project delivery in the Southeast, Nigeria, followed by poor funding, price fluctuations, etc. This finding depicts reality and not unconnected to the high level of negligence of most contractors to professional building codes established by the Government agency. The non-adherence to standard building codes and ethics encourage the use of substandard building materials and the employment of inexperienced and unskilled worker whose activities frustrate successful delivery of projects. Instability in government policies may have contributed to high level of poor funding, non-adherence to professional codes and instability in the price of building construction materials. This call for the awareness and enforcement of the necessary policies and regulations that coerce contractors to strictly adhere to the laid down building codes and professional ethics against all odds.

This study has no doubt justified the empirical review of most building construction projects in Imo state. It has also awakened the call for proper probe into the factors constraining the successful implementation of construction projects, especially, building construction projects in Nigeria for improved national development and standard of living.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

5.2 Summary

Successful delivery of projects is the building blocks of economic growth and development. And successful project delivery can only occur in a favorable internal and external environment. Most writers agree that Nigeria economy is in recession and that public and private projects are generally poorly planned and implemented because of the inherent constraints. From the findings of the analyzed data, the following conclusions were drawn:

a. Appropriate and adequate funding of building construction projects, high cost of securing government approval for building plans, non-adherence to the professional building codes and ethics, stable and favourable government policies that will encourage effective planning and implementation of projects, reduction and stability of construction materials costs and experienced and skillful workmanship are critical for effective planning and delivery of construction projects, especially building projects.

b. Although timely and reliable funding are vital to successful building project planning and implementation, proper funding required from clients for proper planning and implementation are most times late, and this delays project delivery.

c. Easy and low cost of acquiring government approval are necessary to facilitate the successful delivery of building projects, but accidentally this is not easily obtainable because of bribery and bureaucracy, hence leads to frustration of most building/estate developers.

d. Strict and judicious adherence to standard established building codes is essential to discourage the use of substandard materials and unskilled personnel, thus encouraging proper monitoring and supervision. As a result, collapse of building projects will be reduced and lives and properties saved. But lack of adherence, neglect or ignorance of the standard building codes and ethics witness in Nigeria, especially, the Southeast creates problem and as such militate against successful building construction delivery. Hence, the need to create awareness and enforce strict adherence to the established building codes for the State in the Southeast geopolitical zone of Nigeria.

e. Government development policies should be strengthened and inflation controlled to avoid constant increase in the cost of materials for building construction projects.

f. Requisite experience and skills are needed for proper execution of building projects. Experienced and skilled personnel are most times not engaged by contractors, especially, Government contractors possibly due to the cost of payment associated with attracting the right workmanship. It has becomes expedient for laws to be made to discourage and penalized defaulting corrupt contractors who go into contract for selfish gains.

5.3 Recommendations

Based on the findings and conclusions of the study, the following recommendations are made to improve the quality of planning and implementation of building construction projects in Southeastern States of Nigeria:

a. Timely and adequate funding of building construction projects should be maintained throughout the project life cycle in order to bridge the funding gap and timely and adequate funding to facilitate smooth delivery of building construction projects in Nigeria, particularly the Southeastern States.

b. The cost and process of obtaining government approval should be made more affordable and simple. Touts that pose as middlemen should be chased out of the Government offices. This will reduce the frustration that intending house owners and estate developers experience before securing government authorization and encourage both the private and public investors to invest in building projects for the economic development of the Zone.

c. The necessary authorities should monitor and apprehend the contractors that fail to adhere to the laid down building standard and codes. Policies should be formulated to ensure that professional bodies like COREN and NSE penalize and cancel the certificate of operation given to such dubious contractors if found wanton.

d. The Government should create enabling environment through policies and programmes that will encourage the proper planning and implementation of

building construction projects and criminalize project failure or abandonment in Nigeria, especially, the Southeast geopolitical zone. Stable and favourable government policies that will encourage effective planning and implementation of projects should be pursued by all the building project stakeholders in the Southeastern States in order to achieve the needed development and enhance the socio-economic wellbeing of the citizens of the Southeast, Nigeria.

e. Government development policies should be strengthened in order to control inflation and avoid constant increase in the cost of materials for building construction projects. There should be stability of construction material costs to allow for effective planning and delivery of construction projects, especially building projects.

f. Appropriate punishment should be meted out to the contractors that engage the services of inexperienced and roadside workers to forestall building project failure and encourage successful delivery of building projects. This will assist achieve the needed economic development of the Southeastern States in particular and Nigeria in general.

5.4 Contributions to Knowledge

The study have been able to establish the fact that non-adherence to building codes and ethics by most contractors, especially, the State Government contractors is the major factor militating against successful performance of

building construction projects in the Southeast States and other States of the federation.

The study also made exposed the level of corruption and bureaucracy that characterize the process of securing government approval hence making the process costly and difficult.

Lastly, the individual and collective effects of these identified militating factors on successful building construction projects in the Southeast geopolitical zone and other Zones have been established.

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APPENDIX I

QUESTIONNAIRE

Using the scale provided, please circle or tick the cell that indicated the extent to which you agree or disagree with the statement as they relate to the militating factors or event that occurred in the building project(s) which you have participated. The values attached to the scale are as follows:

SD = Strongly Disagree = 1 Point

D = Disagree = 2 Points

N = Neutral = 3 Points

A = Agree = 4 Points

SA = Strongly Agree = 5 Points.

Factor 1:Funding Gap		**SD**	**D**	**N**	**A**	**SA**
1	The building construction project received adequate and timely funding throughout the planning and implementation stages.					
2	Poor funding of building projects did not affect project delivery schedule.					
3.	If building projects funds are delayed, the project will also suffer cost escalation which may hinder successful delivery.					
4.	Funding gap exist because the client is not satisfied with the progress and quality of work.					
5.	Poor project funding is most time times caused by the disagreement between contractors and their clients.					

Factor 2: Cost of Securing Government Approval		**SD**	**D**	**N**	**A**	**SA**
1	High cost building permit discourage builders from investing in building projects in South Eastern Nigeria.					
2	Corruption and delay in certifying building plans affect the timely delivery of building construction projects.					
3.	Bureaucratic bottleneck and activities of politician contributed to the high cost of obtaining building permit from the necessary authorities.					
4.	The cost of building certification increase the cost of building construction projects in South Eastern Nigeria.					
5.	Government policies and regulatory activities do not really promote the rapid development of the economy through successful delivery of building projects.					

Appendix I contd

Factor 3: Non-adherence to Building Codes		**SD**	**D**	**N**	**A**	**SA**
1	Most contractors neglect the established building codes in executing building construction projects.					
2	The level of ignorance made building contractors unaware of the existence of the code.					
3.	The level of ignorance of the contractors to the building codes imply that most building contractors in the Southeast, Nigeria are not qualified and experienced.					
4.	Some contractors intentionally ignore the building codes and ethic due to corruption.					
5.	As a result of the above situations, substandard materials and low level of personnel are deployed to handle the construction of building projects.					

Appendix I contd

Factor 4: Government Policies		**SD**	**D**	**N**	**A**	**SA**
1	In project management, government policies affect the planning and implementation of building projects.					
2	Policies of the government regarding development should be made to favour real estate development in order to provide shelter which is one of the major criteria for judging development level.					
3.	Government policy makers are most time ignorant of the need to provide shelter for the development of the people self-esteem.					
4.	Government policies in the Imo state contributed to the increasing activities of touts in the name of "TASKFORCE" aimed at exploiting building construction owners and contractors.					
5.	Government policy regarding "Certificate of Occupant" is making building projects expensive and discouraging.					

Factor 5: Price Fluctuation		**SD**	**D**	**N**	**A**	**SA**
1	The constant fluctuation witnessed in the price of building materials distorts effective planning and implementation projects.					
2	Inflation is responsible for the high level of fluctuation of building materials costs.					
3.	Economic depression in Nigeria does not allow the manufactures of building materials to reduce cost of production, hence the continuous increase seen in the cost of building materials.					
4.	The level of corruption seen in the country amidst the middle men negatively affect the price of building materials.					
5.	Poor road network and high cost of transportation contributes negatively on the cost of construction materials, especially building materials.					

Appendix I contd

Factor 6: Level of Skilled Personnel		**SD**	**D**	**N**	**A**	**SA**
1.	Most building contractors usually employ nonprofessionals for building project execution					
2.	Unskilled worker contribute to building project failure					
3.	Non-adherence to building codes encourage the engagement of unskilled workers.					
4.	Contractors should be monitored against the use of unprofessional builders in the implementation of building projects					
5.	Poor funding of building projects make contractors to resort to the use of unskilled workmanship which frustrates project success.					

Appendix I contd

Successful Building Project Delivery		**SD**	**D**	**N**	**A**	**SA**
1	Demand for development fees by the community leaders and or youths delay the process of project implementation.					
2	Non-adherence to building codes encourage the engagement of unskilled workers.					
3	Contractors should be monitored against the use of unprofessional builders in the implementation of building projects					
4	The level of ignorance of the contractors to the building codes imply that most building contractors in the Southeast, Nigeria are not qualified and experienced.					
5	Most contractors neglect the established building codes in executing building construction projects.					
6	High cost of "Certificate of Occupant" negatively affect building projects delivery.					
7	Inflation is responsible for the high level of fluctuation of building materials costs.					
8	Poor funding of building projects did not affect project delivery schedule.					
9	Bureaucratic bottleneck and activities of politician contributed to the high cost of obtaining building permit from the necessary authorities.					
10	The constant fluctuation witnessed in the price of building materials distorts effective planning and implementation projects.					
11	Policies of the government regarding development should be made to favour real estate development in order to provide shelter which is one of the major criteria for judging development level.					
12	Most communities in Imo State engage in various illegal activities of imposing development fees on building contractors/ clients before implementing any construction project, especially building projects.					

Thank you and God Bless.

Appendix II

CONTENT ANALYSIS

Reviewed Authors	**Associated Factors in the Literature**
Onyeulor, (2013)	change in project design, change in schedule, non-adherence to building codes, weather condition, poor coordination among labourers and site manager, increase materials cost, shortage of materials during construction, improper design specification, lack of und for payment, improper planning, instability in government policies, materials theft and pilferages, poor project evaluation, high cost of project approval, and inadequate procurement procedure.
Okafor (2016)	Poor Planning and Implementation Skills, Government Policies
Daveport, 2017; Chinyio, 2012; Flanagan, 2009,	Poor Certainty and Visioning Skills
Adeleke, 2014	Poor Communication Skills
Akpan and Chizea, (2007	No Clear Work Breakdown Structure
Winch (2009)	Poor Certainty and Visioning Skills, Changing Order at Mid-Project,
Ikpo, (2016)	Funding Gap
Ekeanyanwu (2015)	Imposed Development Fees
Echeme (2009)	Price Fluctuation
Ade and Babatunde (2015)	unstable government policies, ignorance of building ethics, fluctuation in price of construction materials, use of unskilled and inexperience workmen, design error, poor site condition, delay in payment, financial incapability of client, financial incapability of contractor and non-availability of subcontractor and supplier.

Hassan (2012)	technical incompetence, poor organizational structure, and failures of the enterprise, the low level of experience personnel, high cost of acquiring and securing land, inadequate project preparation, planning and implementation, delays in issuing information to the contractor during construction stage, lack of coordination at design phase, negligence of professional building codes, change in the scope of the project, Government policies, tendering maneuvers by contractors, such as front-loading of rates, incomplete design at the time of tender, bad allocation of labour inside the site and delays in decisions making by government
Eshofonie (2008)	cost of materials, project approval cost and bureaucratic processes, incorrect planning, wrong method of estimation, ignorance of building ethics and regulations, contract management, fluctuation of prices of materials, previous experience of contractor, Absence of construction cost data, additional cost and project financing.
Akinsiku and Akinsulire (2012)	financial or cash flow difficulties, financial difficulties faced by contractors and public agencies, frequent change order and design, failure to pay for completed works, shortages of resources, considerable additional work, escalations of material prices, increases in the scope of work, delay in design work and late delivery of materials
Ndukaku, (2016)	increase materials cost, shortage of materials during construction, use of non-professionals, improper design specification, non-adherence to professional building codes, lack of fund for payment, improper planning, instability in government policies, materials theft and pilferages, poor project evaluation
Barbara (2015)	poor funding of projects by the clients and contractors, negligence of the contractors to building codes, bureaucratic problem in

	securing government approval for project plan and its associated costs, price fluctuation of construction materials and labour, low skilled workmen, and indiscipline in the award of construction contracts
Kwesi (2014)	intentional negligence of the existing building codes, low level of manpower, use of substandard materials, low level of monitoring by the constituted Government authority, and increase in the cost of building materials.
Okonkwo (2015)	Unstable government policies, ignorance of building ethics, fluctuation in price of construction materials, use of unskilled and inexperience workmen

Appendix II (Contd.)

IDENTIFICATION OF THE MAJOR FACTORS ACCORDING TO THEIR FREQUENCY OF OCCURRENCE IN THE LITERATURE

S/No.	Factors	Frequency
1	Change in project design	**4**
2	Change in schedule	**1**
3	weather condition	**1**
4	poor coordination among labourers and site manager	**1**
5	Fluctuation of materials cost	**6**
6	Non-adherence to building codes and ethics	**7**
7	shortage of materials during construction	**2**
8	improper design specification	**2**

9	lack of fund for payment	**9**
10	improper planning	**4**
11	instability in government policies	**7**
12	materials theft and pilferages	**3**
13	poor project evaluation	**2**
14	high cost of project approval	**5**
15	Inadequate procurement procedure.	**2**
16	Poor Planning and Implementation Skills,	**2**
17	Poor Certainty and Visioning Skills	**1**
18	Poor Communication Skills	**1**
19	Imposed Development Fees	**3**
20	poor site condition	**1**
21	Non-availability of subcontractor and supplier.	**1**
22	Level skilled personnel/ technical incompetence	**8**
23	failures of the enterprise	**1**
24	Tendering maneuvers by contractors	**1**
25	Bad allocation of labour inside the site	**1**
26	wrong method of estimation	**1**
27	contract management	**1**
28	Absence of construction cost data	**1**
29	increases in the scope of work,	**1**

NOTE: The factors that occurred five time or more were selected for analysis. Hence, **lack of fund for payment, fluctuation of materials cost, instability in government policies, high cost of project approval, non-adherence to building codes, and Level of Skilled Workmanship.**