
DELAY IN NIGERIAN CONSTRUCTION INDUSTRY

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E-mail: danjumausman12@yahoo.com**ABSTRACT**

Delay is one of the biggest problems in Nigerian construction industry. Delay can lead to many negative effects such as disputes between the clients and contractors, increased costs, loss of productivity and revenue and termination of contract. However, comprehensive study on this delay is essential. Since the problems are rather contextual, the study focuses on specific causes of delay like insufficient coordination and ineffective communication between involved parties in construction projects. Literature review and a questionnaire survey were targeted at professionals in Nigerian construction industry and these questionnaires have been used as the tools to carry out this study. The study presents the findings of a survey aimed at identifying some of the most important causes of delay in construction projects in Nigeria. It is hoped that these findings will serve as a guide to enhance the performance of the construction Industry.

Keywords: Causes of Delay, Construction Industry, Client, Integration Device, Standard Deviation (SD).

INTRODUCTION

Mogbo (2004) stated that, construction is being used to control the economies of nations; it is always strongly related to politics, economics, sociology and the legal framework. Political contribution in construction planning is obligatory in the current world democracies. Construction cannot grow in a weak and docile economy. Construction cannot feature where there is social distress and social instability, (Mogbo, 1998). However, as defined in developed countries (Hillebrandt, 1985), construction is considered unique in that it can stimulate the growth of other industrial sectors. Hence to consider growth of the construction industry in terms of its contribution to GDP in isolation is somewhat misleading because of the crucial roles played by construction industry. Therefore, improving construction efficiency by means of cost effectiveness and timeliness would certainly contribute to cost saving for the country as a whole. Effort directed to cost and time effectiveness were associated with managing time and cost, which this study aimed at via investigating causes of delay at construction projects in Nigeria. Like other developing countries, such as Saudi Arabia (Assaf *et al.*, 1995), Libya (Saleh, 2009) and Malaysia (Yong, 1988), Nigerian construction industry has suffered many setbacks in terms of completion of projects at stipulated period within the predetermined sum. Majority of the construction projects in Nigeria experience time and cost overrun which in turn lead to the abandonment of projects. Many construction projects suffer from delay. Suspension means stoppage of work directed to the contractor by a form from the clients, while delay is a slowing down of work without stopping it entirely

(Bartholomew, 1998). Delay gives rise to disruption of work and loss of productivity, late completion of project increased time related costs, and third party claims and abandonment or termination of contract. It is important that general management keep track of project progress to reduce the possibility of delay occurrence or identify it at early stages (Martin, 1976). Construction planning has to be much more decentralized activity to cope with the inherently uncertain nature of task duration. These challenges are the motivating factors of this study.

The objectives of this study are:

1. To identify the major causes of delay in Nigerian construction industry.
2. To identify the effects of delay in construction projects.
3. To recommend strategies for improving project delivery based on the findings of the study.

DELAY IN CONSTRUCTION PROJECTS

The construction industry is large, volatile, and requires tremendous capital outlays. A unique element of risk in the industry is the manner in which disputes and claims are woven through the fiber of the construction process. Delay occurs in every construction project and the significance of this delay varies considerably from project to project. Bramble and Callahan (1987) have defined that; "a delay is the time during which some part of the construction project has been extended or not performed due to an unforeseen circumstance." An incident of delay can originate from within the contractor's organization or from any of the other factors interfacing upon construction project. Some projects are only a few days behind the schedule; some are delayed over a year. So it is essential to define the actual causes of delay in order to minimize and avoid the delay in construction project. Many and various studies were carried to assess the causes of delay in construction projects. Ogunlana *et al.*, (1996) studied the delays in building projects in Thailand, as an example of developing economies.

They concluded that the problems of the construction industry in developing economies could be nested in three layers:

- (1) Problem of shortages or inadequacies in industry infrastructure, mainly supply of resources;
- (2) Problems caused by clients and consultants; and
- (3) Problems caused by incompetence of contractors.

Kumaraswamy *et al.*, (1998) surveyed the causes of construction delay in Hong Kong as seen by clients, contractors and consultants, and examined the factors affecting productivity. The survey revealed differences in perception of the relative significance of factors between the three groups, indicative of their experiences, possible prejudices and lack of effective communication. Maura *et al.*, (2007) conducted a study on the time and cost overrun in Portuguese and stated that design errors; client liability; project specification and direct change order by the client are the major factors that cause the time and cost overrun. Assaf *et al.*, (1995) studied the causes of delay in large building construction projects in Saudi Arabia.

The most important causes of delay included approval of shop drawings, delay in payments to contractors and the resulting cash-flow problems during construction, design changes, conflicts in work schedules of subcontractors, slow decision making and executive bureaucracy in the owners' organizations, design errors, labour shortage and inadequate labour skills. Mezher *et al.*, (1998) conducted a survey on the causes of delays in the construction industry in Lebanon from the viewpoint of owners, contractors and architectural/engineering firms. It was found that owners had more concerns with regard to financial issues; contractors regarded contractual relationships the most important, while consultants considered project management issues to be the most important causes of delays. Abdullah & Battaineh (2000) evaluated the progress reports of 164 building and 28 highway projects constructed during the period of 1997 to 1999 in Jordan. The results indicate that delay is extensive: the average ratio of actual completion time to the planned contract duration is 160.5% for road projects and 120.3% for building projects. Al-Momani (2000) conducted a quantitative analysis of construction delays by examining the records of 130 public building projects constructed in Jordan during the period of 1990 to 1997. The researcher presented regression models of the relationship between actual and planned project duration for different types of building facilities. The analysis also included the reported frequencies of time extensions for the different causes of delay. The researcher concluded that the main causes of delay in construction projects relate to designers, user changes, weather, site conditions, late deliveries, economic conditions, and increase in quantities. Ogunlana (1995) presented a paper on method for computing activity delay and assessing their contributions to project delay. The method consisted of a set of equations, which could be easily coded into a computer program that would allow speedy access to project delay information and activity contributions. There has been a considerable and continued interest on the effects of construction delay. The information available is diverse and widespread.

Despite the necessity for such research, little work has been described in the literature concerning public projects. The previously proposed factors contributing to construction delay were frequently observed in public projects. The actual frequency and magnitude of these factors is not known, which has proven to be a serious and very expensive problem for the construction industry.

However, Ballard and Howell (1998) argued that construction planners should make only "quality assignments" where the tasks are not meeting these criteria:

- (1) Sufficiently well defined (to be coordinated with other work and the inputs to be identified and assembled);
- (2) Are ready to start (material, design, and precedent works complete);
- (3) Have priority in the critical path for delivery to the customer;
- (4) Are commensurate in scale with the available labour for the coming week; and
- (5) Are carried out within a system where the causes of incomplete or poor quality assignments are investigated and identified should be deferred.

Monitoring gives early warning of the possibility of contractor's delay and help in anticipating the consequences of changes that may be needed (Cleland, 1999;

Abdul-Rahman and Berawi, 2002). Young and Jinijoo (1998) explained that top management support is required and this can be defined as the willingness of top management to provide necessary resources, authority and power. Decision making at the right time is important especially with a fast-track project in preventing delay because the concept of using fast-tracking can be applied to traditional contract projects whereby construction starts prior to completion of the design/contract document (Abd majid *et al.*, 1998). Decision making process is used as the key to effective project management especially in value and risk analysis (Stuckenburck, 1982).

Types of Delay in Construction Projects

There are two types of delay:

Inexcusable Delay (Non- Excusable Delay): Is caused solely by the contractor or its suppliers. The contractor is generally not entitled to relief and must either make up the lost time through acceleration or compensate the owner. This compensation may come about through either liquidated damages or actual damages, provided there is no liquidated damages clause in the contract. Liquidated damages are generally expressed as a daily rate that is based on a forecast of costs the owner is likely to incur in the event of late completion by the contractor.

Excusable Delay: Basically divided into two (2):

- i. **Non-Compensable Delay** is caused by third parties or incidents beyond the control of both the owner and the contractor. Example typically includes acts of God, unusual weather, strikes, fires, acts of government in its sovereign capacity, etc. In this case, the contractor is normally entitled to a time extension but no compensation for delay damages.
- ii. **Compensable Delay** is caused by the owner or the owner's agents. An example of this would be the late release of drawings from the owner's architect. An excusable, compensable delay usually leads to a schedule extension and exposes the owner to financial damages claimed by the contractor. In this case, the contractor incurs additional indirect costs for both extended field office and home office overhead and unabsorbed home office overhead.

RESEARCH METHODOLOGY

The objectives defined in the preceding section were achieved through the accomplishment of the following tasks: The preliminary data for this research was collected through a literature review and the use of a questionnaire survey targeted at some contractors, clients and consultants in the construction industry in Nigeria.

The literature review was conducted through books, conference proceedings, the Internet and the international journals of project management. In this step, some of the causes of delay that may be encountered in a construction project were identified. The causes of delay are then classified into six (6) broad categories (acts of God; design-related; construction-related; financial/economic; management/administrative; code-related) depending on their nature and mode of occurrence.

The data collected through questionnaire surveys are analyzed and recommendations are made to mitigate the delay.

RESULTS AND DISCUSSIONS

The results of factor analysis of the items of contractor’s factors that causes delays in construction projects and their ranking are shown below. Based on the mean value criterion, the first ranking captured the respondents’ general feeling that “improper planning” is the major factor that causes delay in construction projects in Nigeria. Followed by “lack of effective communication” as the second ranked factor which causes delays, this finding can be agreed with what was found by Frimpong *et al.*, (2003). The factors “Design Errors” and “Shortage of supply like steel, concrete etc” are the third-ranked factors that cause delays in construction projects in Nigeria. Consequently, factors such as “Slow Decision Making” and “Financial Issues” were ranked fourth. Abdul-Rahman *et al.*, (2006) conducted a study on delay mitigation in the Malaysian construction industry; they proved that a financial problem is confirmed by the survey as the main cause of delay. The next important factor that causes delays in construction projects in Nigeria is “Shortage of Material”, it was ranked as number fifth. The details of the results are shown below:

Factors	Mean	SD
Improper planning	5.0	0.3
Lack of effective communication.....	4.7	0.4
Design errors.....	3.8	0.4
Shortage of supply like steel, concrete	3.8	0.4
Slow decision making.....	3.7	0.5
Financial issues.....	3.7	0.5
Shortage of material.....	3.6	0.9
Cash-flow problems during construction.....	3.6	0.9
Increase in quantities.....	3.5	0.8
Mismanagement by the contractor (financial, supplier support, sub-contractor).....	3.5	0.7
Executive bureaucracy in the owners' organizations.....	3.4	0.8
Notification of extra work.....	3.4	0.5
Changes in site conditions.....	3.3	0.8
Date of notice to proceed.....	3.3	0.5

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Financing matters.....	3.2	0.7
Payment for completed works.....	3.2	0.7
Indicative of experiences.....	3.1	1.0
Conflicts in work schedules of subcontractors.....	3.1	1.0
Contractors regarded contractual relationships.....	3.1	0.8
Late confirmation from client and consultant regarding cost, quality and time	3.0	0.6
Experience of project team.....	3.0	0.8
Quality assurance / control.....	3.0	0.8
Long period for approval of tests and inspections.....	3.0	0.8
Political influence.....	2.9	1.0
Social influence (feedback from resident) EIA.....	2.9	1.0
Failure of RIBA plan of work application.....	2.8	0.8
Site accidents.....	2.8	1.0
Negligence.....	2.8	0.7
Project management issues.....	2.8	0.8
Late deliveries of materials and equipments.....	2.8	0.9
Economic conditions.....	2.7	0.9
Changes of design.....	2.7	0.8
User changes.....	2.6	1.2
Liquated damage (LAD).....	2.6	0.6
Negotiation during construction.....	2.6	1.0
Designers.....	2.3	0.9
Mistakes during construction.....	2.2	0.6

Possible prejudices.....	2.2	0.7
Changed orders and mistakes and discrepancies in contract Documents	2.0	0.8
Dispute (variation order).....	1.8	0.4
Religions factors.....	1.7	0.7
Weather condition (<i>Force-Marjue</i>).....	1.6	0.5
Conflicts of the drawing and specification.....	1.5	0.0

Finally, an analysis is needed to identify the impact of delay on time and cost followed by taking the appropriate action to ease delay and minimize the cost required (Clogh, 1981). It is important to improve the estimated activity duration according to the actual skills levels, unexpected events, efficiency of work time and mistakes and misunderstanding (Okpala & Aniekwu, 1998). However, it was revealed from the study that "loss of interest by the stakeholders" was ranked first by the respondents with a Mean of 4.9 and Standard Deviation of 0.3 as one of the most important impacts (noticeable effects) on construction project delays in Nigeria. Second ranked factor is "blacklist by authorities" with a Mean of 4.6 and Standard Deviation of 0.8. The third ranked factor is "waste of money and time" with a Mean of 4.3 and Standard Deviation of 0.7. The fourth ranked factor with a Mean of 4.1 and Standard Deviation of 0.6 is "declination of reputation."

CONCLUSION

Construction delay is a critical function in construction projects. Projects investigated in this study exhibit a delay during the construction projects. In practice, this phenomenon is expected to continue unless management takes action to control these causes right from design stages. Adequate planning, co-ordination and proper monitoring of the construction projects by an experience and qualify professionals will reduce the impact of delay. It is believed that the arguments and findings presented in this study will provide a good guidance for managerial intervention and provide some guidelines and actionable information that project managers can utilize to manage their projects and also enable contractor organizations to develop in-house competitiveness for effective projects delivery and client's satisfaction within the stipulated time schedule.

RECOMMENDATIONS

A research by Abdelnaser *et al.*, (2005) recommended that in order to avoid delays during construction stage, proper planning must be considered. Therefore, the study recommends the following based on the conclusions reached.

- i. Risk management practices should be excellently used.
- ii. There should be proper planning and proper payment from client.
- iii. A very good preparation of insurance claims and scheduling of programmes should be encouraged.

- iv. There should always be a client's representative for a project and selecting experts that understand their assignments.
- v. Clear contract and Bills of Quantities (BOQ) and computation of amount of financial damages should also be encouraged.

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