

CAUSES OF TIME OVERRUN IN BUILDING PROJECTS IN NIGERIA: CONTRACTING AND CONSULTING PERSPECTIVES

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ABSTRACT: *Completion time is one of the yardsticks for measuring the level of project success in the construction industry. Thus, timely completion of construction projects is of great concern to construction projects participants. However, time overrun in building projects has been observed to be one of the major problems of the industry for many years. This paper examined the causes of time overrun in building projects with a view to attracting policy response which could enhance project time performance. Copies of structured questionnaire were administered on 95 construction professionals in contracting and consulting firms in Lagos State, Nigeria out of which 70 were properly filled and used for analysis. Mean score and Spearman's rank correlation were used to analyse the data collected. The study indicates that both contractors and consultants were in agreement that time overrun was mostly due to financial difficulties, incomplete project details and clients' interference.*

KEYWORDS: Building Projects, Consulting, Contracting, Nigeria, Time Overrun

INTRODUCTION

The strategic position of the construction industry in any nation's economy is never in doubt. Ogbebor (2002) affirmed that the construction industry worldwide is regarded as a potent motivator of national economy because it provides the driving force necessary for sustaining a buoyant economy or reviving a depressed one. The noticeable development and aesthetic transformation of the environment is bound up with and predicated on the construction industry. Owing to the dominant role it plays in the economy of any nation, it has been described to be the 'workboat' for development. It is proven to be the cornerstone and bedrock of rapid economic growth of the nation. On the average, it contributes between five and eight percent to the annual gross domestic product (GDP) and between one-third and one-half of the total fixed capital investment of most countries (Omole, 2000; Ogunlana, 2002; Arditi & Mochtar, 2000). In Nigeria, for example, the industry produces nearly 70% of the nation's fixed capital formation and contributes between one and three percent (1-3%) to employment generation. The foregoing contributions of the industry to national economic growth and development necessitates improved efficiency by means of cost effectiveness and timeliness.

However, one of the criticisms against the industry has been its penchant for delay. According to Idoro (2009), delay in the delivery of projects remained the major problem confronting the construction industry in Nigeria. It was against this background therefore that this study compared contractors' and consultants' perceptions of the causes of time overrun in building projects in Lagos State, Nigeria with a view to attracting policy response that will enhance projects' time performance in the study area.

Previous works

Several studies have identified the causes of time overrun in the construction industry worldwide. In most of these studies, time overrun was used interchangeably with construction delay or simply time delay. Odeh and Battaineh (2001) studied the causes of construction delay in traditional contracts in Jordan. The study identified 28 causes to be responsible for construction delay. One hundred and fifty (150) copies of questionnaire were administered on contracting and consulting firms to elicit information on the causes of delay in mixed construction types including private buildings, large public buildings, roads and water works. The study adopted relative importance index and spearman's ranking as analysis techniques. The major conclusions of the study were that inadequate contractor experience, owner interference and slow decision-making by owners in that order were responsible for delay. Others were improper planning and low productivity.

Odeyinka and Yusuf (1997) considered the causes of delay in Nigerian construction projects. The study classified the causes of project delay into contractor-related, client-related and external-related. Using the random sampling technique, 150 copies of questionnaire were administered out of which 100 were retrieved and used for analysis. The study concluded that variation orders, slow decision taking and cash-flow problems were among the major causes of delay in construction projects in Nigeria. Others were natural disaster, weather conditions, financial difficulties and poor site supervision. Ahmed *et al* (2003) investigated delays in Florida construction industry. The study which was mainly contractor-based identified 50 causes of construction delay and retrieved 35 out of the 380 copies of questionnaire distributed. The study concluded that the most critical causes of delay in Florida were building permits approval, variations (change orders and changes in drawings), in complete documents and shop drawings approval.

Ameh and Osegbo (2011) studied the relationship between time overrun and productivity on construction sites in Nigeria. The study identified 18 causes of time overrun and 14 causes of low productivity. Using the 43 copies of questionnaire retrieved from selected technical and management staff of medium and large scale contracting firms, the study established that inadequate funding of projects, inadequate planning before take-off and inadequate tools and equipment and delay in delivery of materials to site, in that descending order, were the major causes of project delay in Nigeria.

Majid (2006) investigated the causes and effects of delay in Malaysia. The study which made use of mixed developments including building, civil engineering and communication projects analysed 100 copies of questionnaire administered on contracting and consulting firms. In all, 57 causes grouped into eight factor-related causes were used. The major conclusions from the study were that insufficient equipment, inaccurate time estimates, interim payment difficulties and change orders, in that order, were the major causes of delay. Others were poor site management and supervision, shortage of construction materials, incompetent project team, improper project planning and scheduling and contractors' financial difficulties, amongst others. Haseeb *et al.* (2011) studied the causes and effects of delays in large construction projects of Pakistan. Analysis of the 100 copies of questionnaire retrieved out of the 150 administered established 16 important causes of delays. These were delay in interim payments, inaccurate time estimation, poor site management, obsolete technology, natural disaster and unforeseen site conditions. Others were change in design, material shortages, change orders and inaccurate cost estimates, amongst others. From the foregoing, there

appears to be scanty literature on comparative assessment of stakeholders' perspectives on the causes of time overrun. This study therefore was undertaken to fill this gap.

STUDY METHODOLOGY AND SAMPLE COVERAGE

Questionnaire design

A questionnaire survey was undertaken to determine the opinion of contracting and consulting firms regarding causes of time overrun in building projects in the Nigerian construction industry. A structured questionnaire accompanied with a covering letter was sent to the Managing Directors and Principals of sample firms the selection being based on a combination of both random and quota sampling methods. The questionnaire elicited information on the characteristics of the respondents and responding firms as well as issues on the objectives of the study.

The random sampling of contracting firms was supplemented with quota sampling of consulting firms of Architects, Engineers, Builders and Quantity Surveyors who are actively involved in building projects execution in Nigeria. A total of 70 copies of usable questionnaire representing 87.5% response rate made up of 31 contracting and 39 consulting firms were retrieve out of a total number of 95 copies distributed. The data collected were analysed using mean score. To compare the perspectives of contractors and consultants on the causes of time overrun, spearman's rank correlation and t-test were used to test the hypothesis proposed for the purpose.

Data Analysis and Results

Table 1 shows that 44% of the respondents worked with contracting firms while 56% worked with consulting firms. Regarding academic qualification, 39% of the respondents had Bachelor Degree, 38% had Diploma Certificates and 21% had Master Degree. Similarly, 87% of the respondents were professionally qualified as against 13% who were not. The modal years of experience of the respondents was 12 years with an average years of experience of 13 on overall. Sixty-eight percent (68%) of the respondents' organisation worked for both public and private clients, 29% worked for only private clients with 3% working for only public clients. On time overrun, 57% of the respondents claimed that it was a frequent occurrence on their projects with 40% and 3% claiming rear and frequent occurrence respectively. By implication, majority of the respondents possessed adequate cognate experience on the subject matter to justify the robustness of the data used for the study.

Table 1: Summary of Background Information of Respondents

Category	Classification	No.	%
Name of Organisation	Contracting	31	
	Consulting	39	
	Total	70	
Academic Qualification	OND	1	
	HND	16	
	PGD	10	
	B.Sc./B.Tech	27	
	M.Sc./M.Tech	15	
	Others	1	
	Total	70	

Professional Qualification	MNIQS	40
	MNIOB	7
	MNIA	4
	MNSE	10
	Others	9
	Total	70
Years of Experience	0-5	4
	5-10	18
	10-15	24
	15-20	11
	>20	13
	Total	70
	Mean=13.3 years	
Major Clients of Organisations	Public Sector	2
	Private Sector	20
	Both Public and Private	48
	Total	70
Occurrence of delay on Projects	Very frequent	2
	Frequent	40
	Rarely	28
	Total	70

Table 2 presents the top ten causes of time overrun perceived by contractors. Lack of experience of clients in construction was the top major cause of time overrun. It was followed by clients' financial difficulties, inadequate fund allocation and incomplete project details. Others were slow decision making by clients, inaccurate site investigation, monthly payment difficulties and clients' interference, in that order. Delayed payment to suppliers and subcontractors and contractors' financial difficulties were also shown to be significant contributions to time overrun by contractors.

Table 2: Contractors Perception of Top Ten Causes of Time Overrun

Causes	Mean	Rank
1. Lack of experience of client in Construction.	8.13	1
2. Client's financial difficulties	7.77	2
3. Inadequate fund allocation	7.45	3
4. Incomplete drawings/details	7.29	4
5. Slow decision making	7.06	5
6. Inaccurate site investigation	6.90	6
7. Monthly payment difficulties	6.87	7
8. Client's interface	6.87	8
9. Delay payment to suppliers/ Subcontractors.	6.84	9
10. Contractor's financial difficulties	6.81	10

The major causes of time overrun from consultants' view point are as presented in Table3. Clients' financial difficulties ranked first followed by monthly payment difficulties, inadequate fund allocation, poor and delay in design and incomplete project details. Others were contractors' financial difficulties clients' interference, inaccurate cost estimates and improper planning and scheduling, in that descending order.

Table 3: Consultants' Perception of Top Ten causes of time overrun

Causes	Mean	Rank
1. Clients financial difficulties	8.12	1
2. Monthly payment difficulties	7.33	2
3. Inadequate fund allocation	7.21	3
4. Poor design & Delay in design	7.17	4
5. Incomplete drawings/details	7.10	5
6. Contractor's financial difficulties	7.02	6
7. Client's Interference	6.98	7
8. Inaccurate cost estimate	6.95	8
9. Improper project planning & scheduling	6.95	9
10. Show decision making by client	6.90	10

Test of Hypothesis

Test of hypothesis was carried out to compare the results of the analysis on the causes of time overrun so as to decide whether the difference between contractors' and consultants' perceptive is statistically significant. The hypothesis tested was:

Ho: Consultants' and contractors' perceptive of the causes of time overrun are the same.

Hi: Consultants' and contractors' perspectives on the causes of time overrun are not the same.

Spearman's rank correlation and t-test were used to test the hypothesis. Table 4 shows the rankings of top seven common causes of time overrun out of the top ten causes perceived by the two categories of respondents. The test was a two-tailed test of hypothesis since it sought to establish whether the causes of time overrun as perceived by consultants were the same with those perceived by contractors or not. The decision rule was: if the t-calculated is less than t-tabulated, accept the null hypothesis (H_0), otherwise, reject the null and accept the alternative (H_1). The test of hypothesis showed that the causes of time overrun on building projects were the same from the perspectives of both consultants and contractors.

Table 4: Rankings of Top Common Causes of Time Overrun

Causes	x	y	d(x-y)	d ² (x-y) ²
1. Clients financial difficulties	1	2	-1	1
2. Monthly payment difficulties	2	7	-5	25
3. Inadequate fund allocation	3	3	0	0
4. Incomplete drawings/details	5	4	1	1
5. Contractor's financial difficulties	6	10	-4	16
6. Client's interference	7	8	-1	1
7. Slow decision making by client	10	5	5	25
	n=7			sum-69

Discussion of findings

The results of the study compared fairly well with those of previous studies. The results were in agreement with Odeh and Battaineh (2002) and Majid (2006) that owner's interference, slow decisions by owners, improper planning, monthly payment difficulties and inaccurate cost estimates were among the top ten causes of time overrun. Similarly, the results also agreed that inadequate funds before take-off, financial difficulties of contractors and delayed payment to suppliers and subcontractors were critical causes of time overrun as reported by Ameh and Osegbo (2011), Odeyinka and Yusif (1997), Haseeb *et al* (2011) and Idoro (2009). However, the results were in disagreement with Ahmed *et al* (2003) who concluded that the most critical causes of time overrun were building permit approval, change orders, inspections and approval of shop drawings. Similarly, the results were at variance with some of the conclusions of Odeh and Battaineh (2002), Majid (2006) and Odeyinka and Yusif (1997). Odeh and Battaineh (2002) claimed that inadequate contractor experience and labour productivity were among the top ten causes of time overrun. Majid (2006) found that poor site supervision, inadequate modern equipment and incompetent project team were among the major causes of time overrun. Odeyinka and Yusif (1997) affirmed that poor site supervision, weather conditions and conflicts were major causes of time overrun.

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