

Factors Militating Against Prompt Delivery of Construction Projects in Lagos Megacity, Nigeria: Contractors' Perspective

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Abstract

Delay is a common issue faced in the construction industry all over the world especially in developing countries. The aim of this study is to evaluate factors causing delays and their effects on construction projects in Lagos Mega City, Nigeria from the contractors' perspective. It is predicated on the incessant delay experienced by contractors on construction projects. Purposive sampling method was adopted for the study. Quantitative data was obtained by administration of One hundred (100) structured questionnaires distributed to contractors of construction project sites in Lagos State and Qualitative data was obtained from interview of key management personnel of the companies and journals. Ranking analysis of the 33 major causes of delays identified through literature review using Relative Importance Index (RII) showed that cash flow problems during construction ($RII=4.81$), clients' financial difficulties ($RII=4.47$) and poor procurement ($RII=4.40$) were the most important causes of delays in construction project sites in Lagos State, Cost overrun ($RII=4.92$), late payment ($RII=4.59$) and project extension ($RII=4.45$) were predominant effects of delay in construction project. Hypotheses testing on relationship between shortage of skilled labour, improper equipment during construction and delay in construction project using One-Way ANOVA showed positive correlation. For improved efficiency and effective project delivery in the industry, proper payment from client ($RII=4.78$), competent project managers ($RII=4.64$), the use of experienced subcontractors and suppliers ($RII=4.48$) should be encouraged to mitigate against delay in construction projects.

Keywords: Contractors, construction, delay, Nigeria, project

1. Introduction

The construction industry is an essential component for driving the economy of any nation hence worldwide, huge amounts of resources are devoted to construction development work, (Aftab Hameed Memon (2014), Davision and Mullen (2009)). Delay is a global phenomenon (Sambasivan and Soon, 2007) which affects not only the construction industry but the overall economy of countries (Faradi and El-Sayegh, 2006). In Nigeria, according to Olusegun Aganga, former Minister of Finance, the construction industry contributes 3% to national GDP. Delay in construction has adverse effects on all stakeholders in the business. It is therefore in the interest of all to avoid delay, or at best, reduce such

delays to the minimum, should such arise. Aibinu and Jagboro (2002) defined delay as the extension of time beyond planned completion dates traceable to the contractors. Every delay that the project contractor experience is a setback. Improper planning at the conception of a construction project can be a source of delay which may lead to loss of productivity. (Ogunde and Fagbenle 2013).

Bureaucratic bottlenecks arising as a result of processes, procedures and government policies relating to approvals are critical to timely delivery of construction projects. Government officials storming of construction site to stop work due to non-payment of certain fees is a common sight in the industry. In every construction site, the contractor is faced with onerous tasks of managing scarce financial resources which may be to inadequate working capital. The contractor constantly faces the task of proper management of materials. The contractor also is constantly faced with the problem of equipment management and government officials incessant harassment leading to 'stop work' orders is a major cause for concern to the contractors. These factors make the execution of construction projects by the contractor very hazardous, unpredictable, uncertain and therefore susceptible to delays as a result of non-compliance with certain policies, procedures and practices.

The aim of this study is to carry out evaluation of causes of delay in construction project from the contractors' perspective. The study is predicated on the incessant delay experienced in construction projects by contractors. The objectives are:

- To assess the causes of delay rated by contractors.
- To determine the effects of delay in construction projects.
- To identify methods to mitigate delay based on findings of study.

The research tested the following hypotheses:

H_0 : Shortage of skilled labour will not lead to delay in construction project.

H_0 : Improper equipment during construction cannot lead to project delay.

The study was carried out on construction project sites in Lagos Island, Lagos State. It focused on the evaluation of delay in construction projects from the contractors' perspective. Lagos is the economic capital of Nigeria. As it aspires to become a megacity, and with the recent coming on stream of Eko Atlantic Authority. It aims to reclaim parts of Bar Beach and transform it into sprawling private residential and commercial estates, the complexion of the construction industry in the Victoria Island area of the city is bound to take a new dimension. Moreover, the influx of the affluent towards Lagos Island compels an investigation of this magnitude in order to ascertain delay factors in the construction industry, as related to the contractor and proffer solutions to ameliorate same.

2. Literature Review

Acharya et al. (2006), emphasised that major causes of delays in construction are the client, the contractor, the consultants, acts of God, or a third party. Aibinu and Jagboro (2002) stated that delay may occur when the contractor and the project owner jointly or severally contributed to the non-completion of the project within the original or the stipulated or agreed contractor period. Fugar and Agyakwah-Baah (2010), contended that contractual disagreement may cause delay and cost overrun. This involves multiple complex issues that concern entitlement to recover costs of delay and adjustments of the contract schedules.

Owolabi et al (2014), stated that delay ranks very high in project execution in Nigeria while Sanni and Hashim (2013) discovered that the major problems plaguing the construction in Nigeria are improper documentation, inexperienced staff, unstable market conditions, project complexity, unstable government regulations, wrong procurement methods and lack of innovation. Odeyinka and Yusuf (1977) concluded that seventy percent of projects surveyed in Nigeria suffered failure due to delay in their execution. Moreover, delay is costly, complex and risky (Alaghbari et al (2005).

2.1 Related studies on Causes of Delay

Frimpong and Oluwoye (2003) grouped causes of delay into four categories namely project financing, economic and natural conditions and material supplies. While, Ahmed et al (2003) grouped delays into two main categories: Internal delays caused by the parties to the contract such as the client, designer, consultants and the contractor. External delays caused not by the parties to the contract.. These include government action, material suppliers and act of God, etc. However Ayman (2000) concluded that the main causes of delay in construction of public projects relate to designers, users changes, weather, site conditions, late delivery of materials, economic condition and increase in quantity. Similarly, Sweis et al (2008) concluded that financial difficulties faced by the contractor and too many change orders by owners are

the major causes of construction delay. Odeh and Battaneth (2001) claimed that delays were caused by owner interference, inadequate contractor experience, financing and payments, labour productivity, slow decision making, improper planning and sub-contractors.

Abd El-Razek et al (2008) discovered that the most important causes of delay are financing by contractor during construction, delays in payment to contractors by client, design changes by client or his agent during construction, partial payment during construction and non-utilization of professional construction/contractual management.

Assaf and Al and Al-Hejji (2006) conducted a time performance survey of different types of construction projects in Saudi Arabia and concluded delay is the highest factor.. Muhwezi et al (2014) considered the following four factors: consultant-related, client related, contractor-related and external-related. Improper planning and lack of communication were reported as main causes of delay and time overrun in the construction industry in Nigeria, Isah, K.M.M.A.D. (2012).

2.2 Related Studies on Classification of Delay

Bolton (1990) classified delay into three broad categories namely Excusable but non-compensable delay: Compensable delays; Inexcusable delays Inexcusable delays (non-excusable delays) are caused solely by the contractor or its suppliers (Fugar and Agyakwah-Baah, 2010).

(Soon, 2010) (Majid, 2006) and (Luu et al., 2009). Another classification of delay according to (Ahmed et al., 2003) is concurrent delays;

There are several studies on causes of delays as tabulated as follows:

Table: Summary of other Causes of Delay

S/N	Factors	Authors
1	Contractor's financial difficulties - delay in payment from client would cause financial difficulties to the contractor. -Inadequate fund allocation, High interest rates - insufficient profit and insufficient capital -poor financial control by the contractor	Arshi and Sameh (2005), Arditli et al (1985), Al-Khalil and Al-Ghafly (1999), Frimpong et al (2003), Assaf and Al-Hejji (2006), Sambasivan and Yau (2007) Coulter and Kelley (1992) Thorton (2007) Liu (2010)
2	Material supplies difficulties - Unreliable suppliers can also be a factor in material shortages - suppliers' failure to deliver on time can lead to disruption in operations and cause delay.	Dada et al (2007) Ruiz-Torres and Farzad (2006), Van der Rhee et al (2009) Alibinu and Odeyinka (2006)
3	Labour difficulties - shortage of manpower including skilled, semi-skilled and unskilled labour causes delay in construction projects.	Wang (2010), Sweis et al (2008) and Sambasivan and Yau (2007)
4	Equipment and tools shortages - Insufficient amount of equipment , Frequent equipment breakdown, Shortage of equipment parts, Improper equipment	Chang et al (1991)
5	Poor site management difficulties - Poor site management will affect the overall team resulting in eventual outcome of project delay.	Studies conducted by Arshi and Sameh (2006) , Arditli et al (2005) and Faridi and El-Sayegh (2006)
6	Coordination difficulties - difficulties in coordination between the separate parties are one of the factors that contribute to delay - difficulty and frequent communication breakdown.	Assaf et al (1995), Majid and McCaffer (1998), Sambasivan and Yau (2007),
7	Construction Errors and defective works -poor workmanship, carelessness and short-cuts are the three main factors that contribute to defective works. construction mistakes. -contractor usually undertake short-cuts to complete the construction work due to time and cost constrains.	Gerskup (2010), Thomas (1991)

2.3 Previous Studies on effects of delay.

Studies from Alibinu and Jagboro (2002), Sambasivan and Yau (2007) and Sun and Meng (2009) indicated effects of delay in construction projects include Cost overrun. Other studies are Singh (2009); Alibinu and Jagboro (2002),

Sambasivan and Yau (2007) Hanna et al (2004), Sun and Meng (2009)). On extension of time are these studies Odeh and Battaineh (2002), (Othman et al (2006) and William (2003); On late payment are these Still (2002; Odeh and Battaineh (2001); Rescheduling (Vieira (2003), and Liu and Shih (2009); On damage Company's reputation are Djordjevic and Djukic (2008). Ismail et al (2006) Ismail et al (2006); On productivity and efficiency are (McDonald and Zack (2004); Bramble and Callahan (2002)..

3. Research Methods

The study was conducted in Lagos Island. The sample of this study was derived from workers of notable construction firms with sites in Lagos Island. The respondents were deliberately selected on account of their well-organized structures at both offices and construction sites in terms of nature and volume of business activities. This includes but not limited to numbers of employees, expatriates, skilled and unskilled, deployment of heavy construction equipment, material procurement and deployment logistics, clients' profile, general work environment and adherent to best practices. The construction works investigated for this study included residential and office building projects in Lagos Island. The study considered some of the directorate, management, senior and supervisory staff of these construction firms who are involved in the day-to-day decision making process at different levels, for the sample frame

3.1 Data Collection

The data used for this research comprises both Primary and Secondary data. The instrument of data collection employed is the questionnaire. The collection instruments were targeted at obtaining useful information on delay in construction projects from the contractors' perspective. The questions were drawn based on the research questions, aim and objectives, literature review and research hypothesis that were tested. Relative Importance Index method was used to determine the relative importance of the various causes and effects of delays. The five-point likert scale ranged from 1 (strongly disagree) to 5 (strongly agree) was adopted and transformed to relative importance indices (RII) for each factor as follows:

$$RII = \sum W/SA * N$$

Where, W is the weighting given to each factor by the respondents ranging from 1(strongly disagree) to 5 (strongly agree), SA is the highest weight (i.e. 5 in this case), and N is the total number of respondents. The RII value had a range from 1 to 5, higher the value of RII, the more important the cause of delays.

4. Data Analysis

Hypothesis one and hypothesis two were analyzed using One-Way ANOVA, to compare means of three or more samples. This technique can be used only for numerical data. (Howell 2002) The calculation of the correlation coefficient was performed by statistical programs SPSS. A total of one hundred (100) questionnaires were distributed in different construction sites, and Eighty-Six (86) questionnaires (representing 86%) were returned, while fourteen (4) questionnaires (representing 14%) were not returned.

Table 1: Profession of the respondent

Professional Qualification				
	Frequency	Percent	Valid Percent	Cumulative Percent
ARCH.	40	46.5	46.5	46.5
Eng.	18	20.9	20.9	67.4
BLDR	15	17.4	17.4	84.9
Q.S	13	15.1	15.1	100.0
Total	86	100.0	100.0	

Table1 indicates that 40 (46.5%) of respondents are Architects by profession, 18 (20.9%) of the respondent are Engineers, 15 (17.4%) of the respondent are Builders and 13 (15.1%) of the respondent are Quantity Surveyors. Architects had the highest percentage in the response of the respondent and this can be attributed to the high percentage of Architects in contracting firms visited.

Table 2: Academic qualification of the respondents

Qualification

	Frequency	Percent	Valid Percent	Cumulative Percent
B.Sc/BEng	54	62.8	62.8	62.8
HND	21	24.4	24.4	87.2
M.Sc	11	12.8	12.8	100.0
Total	86	100.0	100.0	

Table 2 shows that 54 (62.8%) of the respondents had B.Sc/BEng , while 21 (24.4%) of the respondents had HND and 11 (12.8%) of the respondents had Master's Degree level. B.Sc/BEng has the highest percentage in the response of the respondents.

Table 3: Years of experience of the respondent

Years of Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
0-5yrs	3	3.5	3.5	3.5
6-10yrs	10	11.6	11.6	15.1
11-15yrs	31	36.1	36.1	51.2
>16yrs	42	48.8	48.8	100.0
Total	86	100.0	100.0	

Table 3 shows that 3 (3.5%) of the respondent had 1-5 years of working experience, 10 (11.6%) had 6-10 years working experience, 31 (36.1%) had 11-15 years of working experience and 42 (48.8%) had >16 years of working experience..>16 years of working experience had the highest percentage of working.

Table 4: Causes of delay faced by contractors

Causes of Delay Faced by Contractors

	Mean	Ranking index
Cash flow Problems During Construction	4.8140	1
Clients Financial Difficulties	4.4651	2
Poor Procurement	4.3953	3
Inadequate Fund Allocation	4.3837	4
Shortage of Skilled Labour	4.0581	5
Abnormal Increase in Material Prices	3.9884	6
Labour Productivity	3.9767	7
Delayed Delivery of Materials	3.9419	8
Construction Methods	3.8837	9
Insufficient Equipment	3.8256	10
Poor Quality	3.8023	11
Inadequate Construction Materials	3.7442	12
Unclear & Inadequate Details In Drawings	3.7326	13
Unreliable Suppliers	3.6977	14
Improper Equipment	3.6744	15
Poor Site Management & Supervision	3.6512	16
Slow Mobilisation	3.6279	17
Labour Supply	3.5930	18
Slow Mobilization of Labour	3.5698	19
Lack of Modern Equipment	3.4884	20
Lack of Construction Production Plan	3.4767	21
Inadequate Time of Completion	3.3837	22
Difficulty In Acquiring Loan	3.3372	23
Frequent Equipment Breakdown	3.3023	24
Inadequate Data Collection & Survey Before Design	3.2558	25

Late Production of Design Documents	3.2209	26
Underestimation of Complexity of Projects	3.1047	27
Equipment Allocation Problems	3.0465	28
Under Estimation of Costs of Projects	3.0233	29
Low Motivation & Morale	2.4884	30
Strike	2.2326	31
Absenteeism	2.0814	32

Table 4 shows that cash problems during construction (4.8140), client financial difficulties (4.4651) and poor procurement (4.3953), inadequate fund allocation (4.3837) and shortage of skilled labour (4.0581) are ranked the major causes of delay in construction sites in Lagos Island.

Table 5: Effects of delay in construction projects from contractors' perspective

Effects of Delay Faced by Contractors

	Mean	Ranking Index
Cost Overrun	4.9186	1
Late Payment	4.5930	2
Project Extension	4.5814	3
Rescheduling	4.4535	4
Disputes	3.8372	5
Arbitration	3.7093	6
Litigation	3.6047	7
Poor Quality of End Product	3.5698	8
Damage Company Reputation	3.1512	9
Loss Of Productivity & Efficiency	3.1395	10
Total Abandonment	2.3837	11

Table 5 shows cost overrun (4.9186), late payment (4.5930) and Project Extension (4.5814) which were ranked 1st, 2nd and 3rd respectively followed by rescheduling (4.4535), disputes (3.8372), and arbitration (3.7093) which were ranked 4th, 5th and 6th respectively. These are the six major effects of delay faced by contractors in construction in Lagos Island.

Table 6: Methods to minimize delays in construction

Methods to Minimize Delay in Construction

	Mean	Ranking Index
Proper Payment From Client	4.7791	1
Use of Proficient Project Manager	4.6395	2
Use of Experienced Subcontractors & Suppliers	4.4767	3
Experienced Project Team	4.4767	4
Use of Appropriate Construction Methods	4.3837	5
Frequent Progress Meetings	4.3488	6
Proper Planning	4.3140	7
Good Scheduling & Programme	4.1977	8
Preconstruction Planning of Project Task	4.1744	9
Making Risk Management	3.9419	10
Acceleration of Site Clearance	3.3488	11
Client Representative For Project	3.3256	12
Compute Amount For Financial Damages	3.1512	13
Valid N (Listwise)		

Table 6 shows that proper payment from client (4.7791), competent project manager (4.6395), use of experienced subcontractors & suppliers (4.4767) were ranked 1st, 2nd and 3rd respectively, multidisciplinary/competent project team (4.4767), use of appropriate construction methods (4.3837), were ranked 4th and 5th respectively..These are the top five methods in mitigating delay in Lagos Island construction sites.

Table 7: Ranking of Categories of causes of delay

Factors	Mean	Ranking
Financial Difficulties	4.200	1
Material Difficulties	3.971	2
Labour Difficulties	3.799	3
Inadequate Equipment	3.498	4
Controlling & Scheduling	3.372	5
Poor Site Management	3.561	6

Table 7 shows the mean and ranking of various causes of delay categorized into groups. Financial difficulties was ranked as 1st cause of delay while material difficulties and labour difficulties were ranked 2nd and 3rd. Lack of finance, materials, labour difficulties would lead to major delay on site.

5. Hypothesis Testing

5.1 Hypothesis one

H₀: Shortage of skilled labour will not lead to delay in construction project.

H₁: Shortage of skilled labour will lead to delay in construction project.

Table 8: Hypothesis One using ANOVA

ANOVA		Sum of Squares		df	Mean Square	F	Sig.	Decision
Poor Quality of end Product	Between Groups	23.594	3	7.865	13.032	.000	Accept H ₀	
	Within Groups	49.487	82	.604				
	Total	73.081	85					
Project Extension	Between Groups	13.443	3	4.481	21.012	.000	Accept H ₀	
	Within Groups	17.487	82	.213				
	Total	30.930	85					
Total Abandonment	Between Groups	5.842	3	1.947	3.758	.014	Accept H ₀	
	Within Groups	42.495	82	.518				
	Total	48.337	85					
Disputes	Between Groups	11.259	3	3.753	16.670	.000	Accept H ₀	
	Within Groups	18.462	82	.225				
	Total	29.721	85					
Cost Overrun	Between Groups	.184	3	.061	.806	.494	Accept H ₀	
	Within Groups	6.246	82	.076				
	Total	6.430	85					
Late Payment	Between Groups	4.694	3	1.565	7.104	.000	Accept H ₀	
	Within Groups	18.062	82	.220				
	Total	22.756	85					
Reschedulling	Between Groups	1.560	3	.520	2.159	.099	Accept H ₀	
	Within Groups	19.754	82	.241				
	Total	21.314	85					
Damage Company Reputation	Between Groups	6.963	3	2.321	6.329	.001	Accept H ₀	
	Within Groups	30.072	82	.367				
	Total	37.035	85					
Loss of Productivity & Efficiency	Between Groups	21.454	3	7.151	12.511	.000	Accept H ₀	
	Within Groups	46.872	82	.572				
	Total	68.326	85					
Litigation	Between Groups	1.943	3	.648	1.092	.357	Accept H ₀	
	Within Groups	48.615	82	.593				
	Total	50.558	85					
Arbitration	Between Groups	.779	3	.260	.453	.716	Accept H ₀	
	Within Groups	46.954	82	.573				
	Total	47.733	85					

The decision rule states that if the probability (Asymp. Sig.) is ≤ 0.005 , reject H_0 , Accept H_1 ; and but if the probability (Asymp. Sig.) is ≥ 0.005 , accept H_0 , reject H_1 .

Table 8, shows that shortage of labour will lead to the following (reject H_0 , accept H_1) :Poor quality of end product .000, project extension .000, disputes .000, late payment .000, damage of company's reputation .000, loss of productivity and efficiency .000 because they are less than the probability (Asymp. Sig.). Whereas,, shortage of skilled labour will not lead to the following (accept H_0 , reject H_1) :Total abandonment 014,, cost overrun .494, litigation .357 & arbitration .716 because they are greater than the probability (Asymp. Sig.).

5.2 Hypothesis two

H_0 : improper equipment during construction cannot lead to project delay.

H_1 : improper equipment during construction can lead to project delay.

Table 9: Hypothesis Two using ANOVA

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
Poor quality of end product	Between Groups	47.144	2	23.572	75.430	.000 Accept H_1
	Within Groups	25.938	83	.313		
	Total	73.081	85			
Project extension	Between Groups	1.508	2	.754	2.128	.126 Accept H_0
	Within Groups	29.422	83	.354		
	Total	30.930	85			
Total abandonment	Between Groups	3.915	2	1.958	3.658	.030 Accept H_0
	Within Groups	44.422	83	.535		
	Total	48.337	85			
Disputes	Between Groups	5.424	2	2.712	9.264	.000 Accept H_1
	Within Groups	24.297	83	.293		
	Total	29.721	85			
Cost over run	Between Groups	1.055	2	.528	8.147	.001 Accept H_1
	Within Groups	5.375	83	.065		
	Total	6.430	85			
Late payment	Between Groups	7.521	2	3.761	20.489	.000 Accept H_1
	Within Groups	15.234	83	.184		
	Total	22.756	85			
Rescheduling	Between Groups	2.126	2	1.063	4.599	.013 Accept H_0
	Within Groups	19.188	83	.231		
	Total	21.314	85			
Damage company reputation	Between Groups	5.097	2	2.549	6.624	.002 Accept H_1
	Within Groups	31.938	83	.385		
	Total	37.035	85			
Loss of productivity & efficiency	Between Groups	12.888	2	6.444	9.648	.000 Accept H_1
	Within Groups	55.438	83	.668		
	Total	68.326	85			
Litigation	Between Groups	3.121	2	1.560	2.730	.071 Accept H_0
	Within Groups	47.438	83	.572		
	Total	50.558	85			
Arbitration	Between Groups	.545	2	.273	.479	.621 Accept H_0
	Within Groups	47.188	83	.569		
	Total	47.733	85			

The decision rule states that if the probability (Asymp. Sig.) is ≤ 0.005 , reject H_0 , Accept H_1 ; and but if the probability (Asymp. Sig.) is ≥ 0.005 , accept H_0 , reject H_1 .

Table 9, shows that improper equipment during construction would lead to the following (reject H_0 , accept H_1): Poor quality of end product 000, , disputes 000, cost overrun 001, late payment 000, damage of company's reputation

002, loss of productivity and efficiency 000 because they are less than the probability (Asymp. Sig.).

Whereas improper equipment will not lead to the following (accept H₀, reject H₁): project extension .126, litigation .071 & arbitrati.621 because they are more than the probability (Asymp. Sig.).

6. Discussion of Findings

Hypothesis one stated that Shortage of skilled labour will not lead to delay in construction project. Comparison test was used and the result showed that the Asymp. Sig. value of poor quality of end product at .000, project extension at .000, total abandonment at .014, disputes at .000, cost overrun at .494, late payment at 0.00, rescheduling at 0.99, damage company's reputation at .001, loss of productivity and efficiency at .000, litigation at .356 and arbitration at .716. Therefore, accept that shortage of skilled labour would lead to the following: poor quality of end product, project extension, disputes, late payment, damage of company's reputation and loss of productivity & efficiency.

Hypothesis two stated that improper equipment during construction project will not lead to delay. Comparison test was used and the result showed that the Asymp. Sig. value of poor quality of end product at .000, project extension at .126, total abandonment at .030, disputes at .000, cost overrun at .001, late payment at 0.00, rescheduling at 0.13, damage company's reputation at .002, loss of productivity and efficiency at .000, litigation at .071 and arbitration at .621. Therefore, accept the alternative hypothesis which is: improper equipment during construction would lead to the following: poor quality of end product, disputes, late payment, damage of company's reputation and loss of productivity & efficiency

7. Conclusion and Recommendation

7.1 Conclusion

Construction delay is a major factor in project delivery. Project delays have been of concern in the construction industry (Ajanlekoko, 1987; Nkado 1995; Odeyinka and Yusuf, 1997; Aibinu and Jagboro, 2002; Ozdemir, 2010, Olajide et al, 2013). However, identifying the causes of delays in the construction projects from contractors' perspective will to a large extent minimize the effects of the delay. The study therefore, aimed at evaluation of delay in construction projects from the contractors' perspective in Lagos Island Construction sites. In conclusion, it identified that Cash problems during construction (4.8140), client financial difficulties (4.4651) and poor procurement (4.3953), inadequate fund allocation (4.3837) and shortage of skilled labour (4.0581) are the major causes of delay in construction sites in Lagos Island. While cost overrun (4.9186), late payment (4.5930), rescheduling (4.4535), disputes (3.8372), and arbitration (3.7093) are the five major effects of delay in construction in Lagos island faced by contractors. Consequently, the methods of minimizing delay on construction projects from the contractors' perspectives, include Proper payment from client (4.7791), use of proficient project manager (4.6395), use of experienced subcontractors & suppliers (4.4767) Experienced project team (4.4767), use of appropriate construction methods (4.3837), are the top methods in mitigating delay in Lagos Island construction sites.

7.2 Recommendations

Consequently, it is recommended that to minimize delay on construction projects from the contractors' perspectives. The client should have sound financial backing and appropriate cash flow plan for the project. Engage the services of experienced project team and endeavour to pay the contractor promptly at every stage when due after the work has been certified by competent and proficient project manager. The contractor should use the most appropriate construction methods and also make use of experienced subcontractors and suppliers to avoid delay in delivery of materials and equipment towards prompt and efficient delivery of construction projects.

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