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Editorial

Advance payment has been unarguably recognized as an alternative payment method in the Nigerian building industry. The first paper by Bashir and Akinola assessed the factors influencing the use of advance payment on building projects in Lagos, Nigeria. The paper revealed time-related factors and economic factors as the most significant factors influencing the use of advance payment on building projects in Lagos, Nigeria. They suggested that moratorium be given prior to amortization whenever advance payment is adopted on building projects to ensure that the contractors judiciously utilize it.

The 21st century construction industry is focusing more on making buildings smarter and more intelligent. Although to a very large extent, the construction industry in the developed countries have adopted the principles of Intelligent Building System (IBS), many developing countries are still lagging for different reasons. Therefore, to improve the adoption of Intelligent Building Systems in the developing countries, Oke and Omole conducted a study which identified the greatest drivers that should be majored on to create a more conducive environment for IBS to thrive.

Morakinyo and Awodele investigated the level of awareness of surveying professions among career counsellors in Senior Secondary School in Lagos State, Nigeria. They discovered that 77.4% were ignorant of the relevance of Quantity Surveying towards the realisation of the built environment (BE), while 69.8% do not have Quantity Surveying listed on their career advisory register. The study linked its results to the exclusion of relevant stakeholders from the creation of awareness on BE careers and posited that these be corrected in future orientation programmes.

The impact of marketing is significant on the success of an organization. But, the impact of marketing is affected by inherent risks which is a challenge for construction professionals to properly handle. Therefore, to enhance the service delivery of these professionals, Ojo and Ebunoluwa assessed the degree of risks inherent in marketing their services. Their results shed light on the risks that occur most frequently, risks with the greatest impact and high marketing risk factors. These risk factors should be taken into proper consideration to successfully inhibit their effects on the services of construction professionals.

Saka aligned with the assertion that the debt crises of the early 1980s led to the adoption of outward looking economic model and Foreign Direct Investment (FDI), as an integral part of the new development policy by developing countries. On this assertion, Saka employed the Vector Error Correction Model (VECM), Forecast Error Variance Decomposition (FEVD) and the Impulse Response Functions (IRFs) to examine the impact of Foreign Direct Investment (FDI) inflows on the output of Nigerian Construction Sector (CNS). The results indicated that FDI inflow had a significant impact on the growth of CNS and GDP (Gross Domestic Product).

Saka thus advocated for deeper economic and social reforms to enhance increased FDI inflows.

Globally, there is no controversy on the economic benefits and contributions of Building Information Modelling (BIM) to the productivity of the building industry. Despite these, the pace at which BIM is being adopted is slower than expectation, especially in the developing countries like Nigeria. In view of this, the factors affecting the adoption of BIM by professionals in the Nigerian construction industry was appraised by Ahmad, Waziri and Zadawa. They extended the popular Technology Acceptance Model (TAM) developed by Davis (1989) to produce a BIM acceptance mode l. They uncovered the indicators of Perceived Usefulness and variables that positively affects Perceived Ease of Use.

Arijeloye, Aghimien, Akinradewo and Abdul-Kareem explored the cost variability between the preliminary cost estimate and the final cost of educational building projects. They examined the factors causing the difference between these two variables in tertiary institutional building projects in Ondo State, Nigeria. The cost deviation between final and preliminary estimates averaged 9%. To bring down this percentage, there should be strict adherence to the principle of cost control and limit the extent of possible changes or variation to the original contract documents at the execution phase of the educational construction projects. Furthermore, the design team should be given adequate time to prepare drawings and specifications at the planning phase. In addition, there should be prior site investigation before the preparation of contract documents.

The concepts of the project owners' motivation and owner commitment have been adjudged as novel ways of surmounting the complex process of delivering sustainable building projects. Olanipekun acknowledged that the practical application of these concepts is not yet possible due to lack of specific approaches for their implementation. Therefore, in a bid to illuminate these approaches, Olanipekun carried out a global overview of sustainable buildings in the established member countries of the World Green Building Council (WGBC). This study expoused the approaches for implementing the project owners' motivation and commitment in practice and put forward certain suggestions that are capable of promoting sustainable building practices.

Time and cost overruns have marred the performance of design and management (D&M) contract, which is one of the variances of the management-oriented procurement system that is gaining prominence in Nigeria. To attain building project cost effectiveness in D&M contract, Datti, Inuwa, Gambo, and Mangvwat researched and brought to limelight the most important preconditions for estimating building project cost in D&M contracts in Bauchi town, Nigeria. In addition, a strong positive relationship was observed between the preconditions and project cost effectiveness. The implication of this is that, applying the wrong preconditions will reduce the likelihood of achieving value for money. This work postulated what should be done in relation to preconditions to achieve better cost management and better project execution.

Assessment of factors influencing the use of advance payment on building projects in Lagos, Nigeria

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Abstract

Advance payment has been unarguably recognized as an alternative payment method in the Nigerian building industry. This study assessed the factors influencing the use of advance payment on building projects in Lagos, Nigeria with a view to enhancing project delivery. Data pertinent to this study were obtained through questionnaire survey from a sample of one hundred and forty (146) construction firms selected through a random sampling from the total of one hundred and eighty two (182) registered construction firms in Lagos. One hundred and thirty two (132) completed questionnaires were retrieved and found fit for the analysis; representing 72.5% response rate. These were analysed using factor analysis. The results showed that Time related factors and Economic conditions with respective 15.34% and 9.61% were the most significant factors influencing the use of advance payment on building projects in Lagos, Nigeria. The study concluded that 'time related factor' and 'economic factors' influenced use of advance payment on building projects than any other factors and the study recommended that the moratorium be more encouraged when advance payment is adopted on building projects for the contractors to judiciously use the advances.

Keywords: assessment; advance- payment; building – projects; payment – method

Introduction

Obtaining funds for executing works on contracts is a huge burden for construction contractors. In essence, project finance is required to bridge the gap between expenditures and revenues (Rameezdeen *et al.*, 2006). The advance payment is a monetary payment made by the client to the contractor for initial expenditure in respect of site mobilization, and a fair proportion of job overheads or preliminaries (Eyiah, 2001). Execution of building project is being continuously characterized by delay, time overrun, cost overrun, and in extreme case abandonment, whereas this phenomenon could be connected at a greater extent to problems emanating from project's finance. Several payment options are available on building project financing, some of which include phase payment, interim payment, advance payment, milestone payment, and stage payment, incentive payment among others (Sherif and Kaka 2003). Commercial Toolkit (2011) posited that advance payments are payments made in advance of work to be done, or delivery of goods.

Advance Payment reduces contractors' need for working capital (Eyiah, 2001; Cidb, 2008). According to a study by Cook and Eyiah (2003), advance payment is an important mechanism used to overcome contractors' financial problems in developing countries. The granting of advance payment to contractor necessitated the demand for an advance payment bonds from such contractor, to at least reduce the monetary risk on the side of the client or project owner (Eyiah, 2001). Pandey (1999) claimed that contractors do not have sufficient collateral to obtain finances from commercial banks and this is in essence, one of the most pressing problems faced by small and medium scale contractors in obtaining the 'working capital' required for a project. Advance payment is therefore seen as a bail out from this predicament. Motaleb (2009) emphasized that the ultimate goal of any construction project is to be delivered in the shortest possible time, at the lowest possible cost, with the highest quality. The success of any construction projects is likely to depend on the suitability of the selected payment system to the project characteristics and client requirement. The practice of well organized and timely payment to the contractor will constitute to a prompt project delivery (Rameezdeen *et al.* 2006).

Literature review

Concept of Advance Payment on Building Projects

Cook and Eyiah (2003) observed that contractors' effective participation in the industry has been affected by several constraints in Ghana and emphasized on lack of access to finance as the most critical of these constraints. In Nigeria, lack of access to finance and high interest rate where finance is available are the most critical of these constraints (Eyiah, 2001). As a result of the incessant financial problems faced by the contractors, advance payment is designed to help overcome financial difficulties of small and medium scale contractors. Advance payment was promoted by World Bank as a temporary measure to develop small and medium scale contractors in the early 1980s and usually constitutes 10 - 20% of the initial contract price (Donkor *et al.*, 2014). It is also considered to be a win-win option of initial financing for both clients and contractors due to its positive impact on contractors' cash flow (Donkor *et al.*,

2014). The emergence of advance payment is an important mechanism used to overcome contractors' financial problems in developing countries like Nigeria (Akinseinde and Awolesi, 2015). Hussin and Omran (2009) justified the use of advance payment by prime contractors to its relevance in making advances to sub-contractors.

A study carried out by Akinseinde and Awolesi (2015) claimed that advance payment has significant effects on contractor's performance and that it enhances contractor's liquidity which enables him to keep and maintain qualified personnel. The project manager may be tempted to engage less qualified personnel (for less wages) to perform functions if not buoyant enough at the commencement of the project (Akinseinde and Awolesi, 2015).

Contractor may claim an advance payment not exceeding 20% of the value of the contract, provided that it is covered by an unconditional and irrevocable bank guarantee from a first-class bank (Gupta, 2010). Such guarantee should be valid for the entire contract implementation period and will be recoverable in equal installment in the succeeding payment valuation certificates. Advance payment normally constitutes 20% of initial contract price in Sri Lanka (Eyiah, 2001). This amount is paid to the contractor before any physical work is being executed. Eyiah, (2001) observed that Sri Lanka is one of the few countries in the world that grants mobilization advance to construction contractors. Advance payment has taken root in the Sri Lankan construction industry in such a way that it is now regarded as a must. It has got institutionalized in the construction practice of Sri Lanka. Practice of advance payment until early 1980's has been reported from Saudi Arabia (Al-Dulaijan and Stevens, 1989). Saudi Arabian government provided advance payment of 20% to the contractors involved in public works until 1982 without interest or fee. The amount was reduced to 10% after 1982 and the practice has been shelved with the introduction of commercial banks into the financial system of the country (Al-Dulaijan and Stevens, 1989). As at year 2015 in Nigeria, the full advance payment of 15% - 25% is released on public (Government) projects while between 30% and 60% is been released by private client depending on the negotiation skill of the contractor and the nature of the project (Akinseinde and Awolesi,2015).

It has been observed that most contractors in the developing countries do not have sufficient collateral to obtain finances from commercial banks and this is in essence one of the most pressing problems faced by small and medium scale contractors in obtaining the 'working capital' required for a project. (Rameezdeen, 2006). Motaleb (2009) emphasized that the ultimate goal of any construction project is to be delivered in the shortest possible time, at the lowest possible cost, with the highest quality. The success of any construction projects is likely to depend on the suitability of the selected payment system to the project characteristics and client requirement. The practice of well organized and timely payment to the contractor will constitute to a prompt project delivery (Rameezdeen *et al.* 2006).

The major problem that construction managers encounter in making financial decisions involves both the uncertainty and ambiguity surrounding expected cash flows (Eldin, 1989). Mincks *et al.*, (2004) opined that updating the cash flow projection is necessary as the project progresses to provide current and more accurate projections because the cash flow relates to the amounts that will be requested for each progress payment. Harris and Mc Caffer (2001) noted that the construction industry usually experiences a proportionally greater number of bankruptcies than do other industries in each year. According to them, one of the final causes of bankruptcies is inadequate cash resources and failure to convince creditors and possible lenders of money that this inadequacy is only temporary. Most contractors working on construction projects suffer serious liquidity and cash flow problems.

Factors Influencing the Use of Advance Payment

Peers (1992) postulated that a proper cash flow management system is crucial for the survival of a construction firm because cash is one of the most important corporate resources and current asset for the day-to-day activities of a firm. Kaka (1995) held that an accurate cash flow prediction is essential at the tendering stage to all contractors. The adoption of advance payment on construction project is characterized by numbers of factors. A study by Gidado and Millar (1992) in Sheriff and Kaka (2003) identified time certainty, cost certainty, project size, project complexity, project type, project duration, tendering time, contract form, economic condition, procurement system, mobilization, anticipated profit and overhead, integrated team, site location among others as the factors necessitated the use of advance payment on construction project. The study by Sheriff and Kaka (2003) also affirmed that risk allocation is a renowned factor that necessitates the use of advance payment on construction project. This is experienced majorly when the contractor foresees the possibility of dispute occurring as a result of the contractual terms. A contractual arrangement such as open tendering and selective tendering accommodate the provision that advance payment may be provided to the contractor. This is to assist the contractor in the procurement of material, mobilization and to prevent unconditional inflation which cannot be predictable by the economy (Hussin and Omran, 2009).

Research methodology

The study was carried out in Lagos state, Nigeria due to the cluster of construction activities in Lagos. The population for this study was one hundred and eighty two (182) construction firms registered with the Lagos State ministry of work and infrastructure obtained from the updated list of registered construction firms with the state in the year 2018. Questionnaires were administered on one hundred and forty six (146) construction firms randomly selected from the population, represented 80.2% of the population. This was in conformity with the recommendation of (Asika 2008)

highly significant. Thus, the data upon which the analysis was carried out were reliable. The total variance explained by the factors (26 factors) is shown in Table 5. In all, nine (9) components were extracted via principal component analysis with Eigen values greater than 1.000. The extracted nine (9) components explain approximately 77.67 % variability in the original twenty six (26) variables. The rotation sums of squared loadings revealed percentage of variables accounted for by extracted components as listed in a uniformly distributed manner of 15.34%, 9.61%, 9.33%, 9.28% , 8.46%, 8.33%, 6.70%, 6.25% and 6.17% respectively.

Table 4: Factor Analysis, KMO Index and Bartlett's Test

Kaiser- Meyer-Olkin Measure of Sampling Adequacy	.466
Approx. Chi –Square	2125.512
Bartlett’s Test of Sphericity Df	325
Sig.	.000

Table 5: Total Variance Explained

Initial Eigen values		Extraction Sums of Squared of squared loading		Rotation Sums of Squared loadings							
Component	Total	% of Variance	Cumulative Total %	Component	Total	% of Variance	Cumulative Total %	Component	Total	% of Variance	Cumulative Total %
1	3.987	15.335	15.335	1	3.520	13.540	13.540				
2	3.387	13.026	28.361	2	2.499	9.613	23.153				
3	2.789	10.725	39.087	3	2.425	9.328	32.481				
4	2.568	9.876	48.962	4	2.412	9.276	41.757				
5	2.256	8.675	57.638	5	2.200	8.461	50.219				
6	1.524	5.863	63.501	6	2.166	8.331	58.550				
7	1.360	5.232	68.733	7	1.742	6.700	65.250				
8	1.230	4.732	73.465	8	1.625	6.249	71.499				
9	1.093	4.205	77.670	9	1.604	6.171	77.670				
10	.909	3.498	81.168								
11	.783	3.012	84.180								
12	.612	2.352	86.532								
13	.560	2.153	88.685								
14	.509	1.957	90.642								
15	.413	1.587	92.228								
16	.374	1.438	93.666								
17	.329	1.266	94.932								
18	.259	.995	95.928								
19	.231	.888	96.816								
20	.199	.764	97.579								
21	.183	.704	98.283								
22	.141	.542	98.826								
23	.125	.480	99.306								
24	.094	.360	99.666								
25	.050	.191	99.857								
26	.037	.143	100.000								

Extraction Method: Principal Component Analysis.

Table 6: Rotated Component Matrix

Factors influencing the use of advance Payment	Component								
	1	2	3	4	5	6	7	8	9
Time certainty						.501			
Cost certainty								.551	
Project size									.789
Project complexity								.737	
Project type							.898		
Project duration			.889						
Tendering time				.865					
Contract form			.739						
Economic condition							.818		
Speed during design				.867					
Tender document				.819					
Procurement system		.702							
Site location		.786							
Project security level		.910							
Peer relationship	.863								
Integrated project team	.730								
Extent of competition									
Allocation of responsibility									.817
Client experience				.561					
Contractor capital base		.860							
Company policy					.745				
Anticipated profit								.701	
Mobilization		.590							
Payment to supplier						.761			
Payment to labour									
Completion period									-.697

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 14 iterations.

Table 6 indicated nine factors with the first dominant factor accounting for 15.34 % of the observed variance and all the nine factors accounted for 77.67 % of the observed variance. This showed that those variables extracted by factor analysis have high influence on the use of advance payment on construction projects. Table 7 showed how the items were loaded to factor after rotation and Figure 1 showed the scree plot of the loadings. The cumulative percentage of variance explained by the first nine factors is 77.67 % , in other words , 77.67% of the common variance shared by the 26 variables can be accounted for by the first nine factors. The generic name was given to the reduced factors based on the attributes shared by the elements in the same column, and this was as presented in Table 7

Table 7: Extracted Influenced Factors to the use of Advance Payment

S/N	Reduced Factor
1	Environmental Factor
2	Project Requirement
3	Time Factor
4	Pre contract documentation
5	Nature and Type of Project
6	Economic Condition
7	Client's Expectation
8	Project Overhead
9	Terms of the Contract

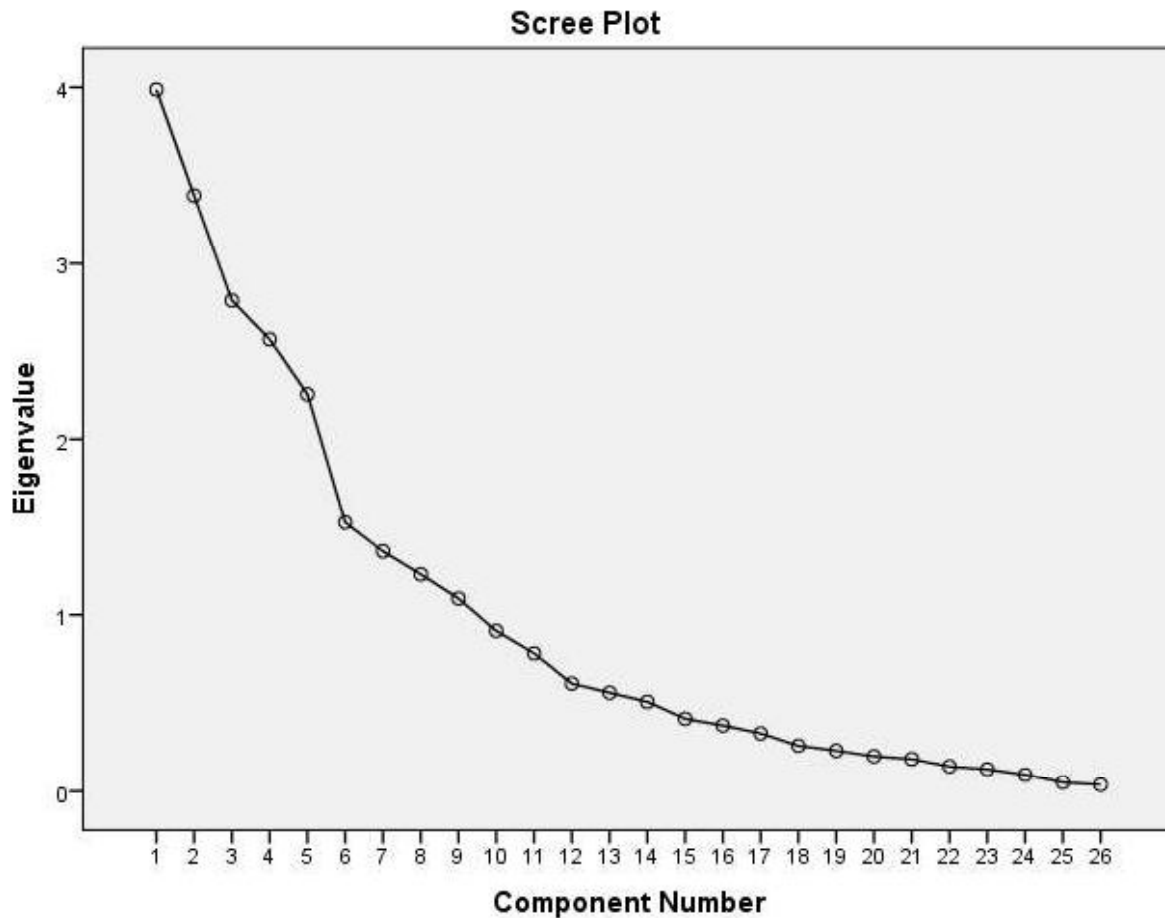


Figure 1: Scree plot for examining the loading of items to factors

The first factor from factor analysis result was labeled as environmental factor and was loaded with the following factors: site location, project security level, peer relationship and integrated project team. The second factor was labeled project requirement and this comprised contract form, procurement system, contractor's capital base and mobilization. The third factor identified by factor analysis was labeled as time related factor and comprised Project duration and speed during construction. The fourth factor was named Pre-contract documentation which comprised tendering time, tender document, and client's experience. The fifth factor was labeled nature and type of project, this comprised time certainty, extent of competition, company policy, and payment to suppliers. The sixth factor was tagged economic situation which comprised project type and economic condition prevailing in the country where the project is domiciled. The seventh factor was labeled as client's expectation and comprised cost certainty, project complexity, and completion period. Likewise, two factors were loaded into the eight factor and was labeled "return on investment". The variables involved were project size and anticipated profit. Last in the list was the ninth factor labeled 'terms of the contract' and comprised only allocation of responsibility.

Table 8: Reduced factors with loading items and values

Advance Payment Influenced Factor	Loading values	Mean Loading values
1. Environmental Factor		
Site location	.786	.823
Project security	.917	
Peer relationship	.863	
Integrated project team	.737	
2. Project Requirement		
Contract form	.739	.723
Procurement system	.702	
Contractors Capital base	.860	
Mobilization	.590	
3. Time Related Factor		

Project duration	.889	.878
Speed during construction	.867	
4. Pre contract documentation		
Tendering time	.865	.748
Tender document	.819	
Client experience	.561	
5. Nature and Type of Project		
Time certainty	.501	.665
Extent of competition	.651	
Company's policy	.745	
Payment to suppliers	.761	
6. Economic Situation		
Project type	.898	.858
Economic condition	.818	
7. Client's Expectation		
Cost certainty	.551	.662
Project complexity	.737	
Completion period	.697	
8. Project Overhead		
Project size	.789	.745
Anticipated profit	.701	
9. Terms of the Contract		
Allocation of responsibility	.817	.817

Table 8 showed that all the advance payment influenced factors extracted through factor analysis have very high loading values, which implied that they have all have great deal of influence in the use of advance payment on the construction projects.

Table 9: Reduced Factors with mean values and rank

S/N	Extracted factors influencing Adv. Payment	Mean value	Rank
1	Time Related	0.878	1
2	Economic Situation	0.858	2
3	Environmental factor	0.822	3
4	Terms of Contract	0.817	4
5	Pre – contract Issues	0.748	5
6	Return on Investment	0.745	6
7	Project Requirement	0.723	7
8	Nature and Type of project	0.665	8
9	Client's expectation	0.662	9

Results from Table 9 revealed that all the reduced factors have very high mean value (0.878 – 0.662). Time related factors and Economic situation were rated first and second with mean value 0.878 and 0.858 respectively. This implied that clients and the contractors gave more priority to the completion period of the projects. Similarly, the state of economy was seen as having significant influence on the use of advance payment on building project. The inflation, exchange rate and government policy were all subsets of the economic situation, and this also influenced the use of advance payment on the construction project. 'Environmental factor' and 'Terms of contract' were having mean score of 0.822 and 0.748 respectively and they were ranked third and fourth respectively. 'Client's expectation' though with an high mean value of 0.662 was rated as the least factor influencing the use of advance payment on the building project.

Conclusion

The study concluded that the timely related factors significantly influence the use of advance payment on building projects in Lagos State than any other factors and the study recommended that the contractors be given moratorium period for effective use of the advances collected on projects.

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