

# **An Investigation into the Sustainability of Advance Payment on Public Construction Projects Delivery**

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## **Abstract**

Within the past 12 years in Ondo State, Nigeria, three different percentages (60%, 50% and 30%) of the contract sum have been adopted as advance payment (AP) for construction contractors. This paper therefore investigated the sustainability of AP to construction project based on the survey of 127 respondents. The data used were collected via questionnaire with high reliability values of 0.830 and 0.780. The results of the study revealed that advance payment had positive and significant effects on the contractors' net cash flows including cost and time performance of projects thereby implying AP's sustainability. It is hereby recommended that the clients and consultants should continue the usage of advance payment on construction projects as it has solved the financial problem of contractors while the current government policy of 30 percent of the contract sum as AP should be maintained because majority of the contractors have cash surplus at an average of 28 percent of the contract sum. Also advance repayment deduction should be made to span through the contract duration or when the actual performance on site reaches 85% as against the contractual provision for four equal installment repayments of 25%. Lastly, the contractors should be made to stock-pile materials that are susceptible to price fluctuation immediately the contract is signed and AP granted.

## **Keywords**

Advance payment, contractors, construction projects, project delivery, Nigeria.

## **1.0 INTRODUCTION**

Construction projects are classically defined by the need to complete a task on time, to budget, and with appropriate technical performance (Williams, 2001). According to Oyetunji and Anderson (2006), project delivery systems also define the roles and responsibilities of the parties in a project and establish an execution framework in terms of sequencing of design, procurement, and construction. From stakeholders' perspective, construction projects require functional and effective payment systems for them to be accomplished. Payment therefore should be seen as a vehicle for achieving good financial performance of construction projects as well as their completion to time. When prompt payment fails to take place the project would experience delay. A number of payment methods associated with construction projects such as the open-book accounting, stage payments, incentive contracting, direct payment, trust accounts/funds, mobilisation advance payment and the mechanic's lien have been shown to be versatile and useful in different project situations (Motawa and Kaka, 2008). Some of the commonly used payment methods in construction projects in Nigeria include stage payment, direct payment, interim payment and advance payment (AP), however each of the payment methods have some inherent importance and usefulness.

According to Potts (1988) and Cheetham, Lewis and Jones (1995), a stage payment system reduces administrative time and cost to prepare interim payments and allows the responsible project personnel to be engaged in more productive project activities. Incentive payments are often employed with disincentives so as to instil efficient contract arrangement and to reward the successful contractors who are fully motivated so as to achieve the client objectives with high performance standards (Arditi and Yasamis, 1998; and Bubshait, 2003). Clough and Sears (1994) stated that a direct payment method allows subcontractors and suppliers to be paid promptly and in full which should result in lower prices, better performance and faster completion. Trust accounts and mechanic liens could be set up to protect and compensate the project participants who have invested in the project against a client or main contractor going out of business and/or not fulfilling their payment commitment (Clough and Sears, 1994; and Latham, 1994). Abeysekera (2002) explained that projects'

contractors and subcontractors could also be paid in advance to assist them in starting the project and maintaining a healthy cash flow.

Each payment mechanism could be appropriate for certain conditions of a project and client circumstance (Motawa and Kaka, 2008). It is therefore the responsibility and prerogative of the client through the consultants, to decide which of the payment methods to be adopted for the project. Advance payment (AP) could be described as part of the contract sum paid to the contractor prior to commencement of work on site in anticipation of reducing his financial problem. Advance payment has been identified by different names by different authors. The names commonly mentioned in literature are: Advance (Construction Industry Development Board, 2008); Advance Payment (Talagala, 1997; Abubakar, 2004; Hussin and Omran, 2009; and Daramola, 2010); Mobilization Advance Payment or Mobilization Advance (Rameezdeen, Palliyaguru and Amaratunga, 2006); and Mobilization or Mobilization Fee (Public Procurement Act, 2007). In Nigeria it is commonly referred to as mobilization, mobilization fee, material advance payment, or advance payment. Mobilization advance payment (MAP) plays an important role in the finance and payment associated with construction projects. It is an important mechanism used to overcome contractor's financial problems in developing countries (Rameezdeen *et al*, 2006). The advance payment policy was introduced by the Federal Government of Nigeria in 1979 to alleviate the financial burdens of indigenous contractors (Akanbiemu, 1997). State governments thereafter adopted the policy; for example the Ondo State Government has experimented with three different percentages of advance payment ranging from 60 percent of the contract sum to the present policy of 30 percent of the contract sum since the past fifteen years. Currently the Federal Government adopts 15 percent of the contract sum as advance payment in all construction projects initiated by federal ministries, departments and agencies. However, in spite of the high percentages of advance payment paid to contractors most especially in the states, there has not been commensurate improvement in the delivery rates of construction projects.

For every advance payment (AP) granted contractors on construction project there must be some reasons for it; hence the factors that are perceived to support its use. Moreover, since 30 percent of the contract sum is currently the overriding policy in almost all the states in Nigeria as AP for all public projects, there is ought to be a uniform policy on the uses of AP. In other words, there is no uniform list of uses nor consensus on what AP should be expended on such that its uses are subject to the vagaries of the perceptions and decisions of the clients and consultants. In different project situations, contractors experience different uses for AP. At times the name by which AP is identified suggests its uses, when it is called materials advance payment it is understood to be used for materials procurement while it is seen to facilitate the movement of the contractor to site and/or start preparatory work when it is referred to as mobilization or mobilization fee. For this reason and previous experiences on uses, contractors would not entertain AP to be used for things other than what is stipulated in the contract. Also in some cases the client and consultants are not concerned about monitoring what the AP is used for in the project; thereby making AP utilization as-you-wish affair on the part of the consultants and contractors. Furthermore, AP has wrongly been thought of to take care of some of the obligations of the client to the contractor as contained in the contract such that the financial interest of the client as against the contractor is often protected. For instance, AP is perceived as a substitute for payment of fluctuation claims and in some cases variations due to additional work to the contractor. All these have always pitched some of the contractors in disputes with their clients and consultants. The existing policy documents such as the Public Procurement Act (2007), the Financial Regulations and Guidelines including the contract documents are not explicit on the uses of AP. This shows that there is lack of policy, agreement and consensus by stakeholders on the uses of AP or the factors that support its use; thereby making monitoring of its uses in the project pretty difficult.

One of the most difficult decisions taken by clients and consultants on construction projects in the construction industry is deciding on the payment of advance and the specifics on which to expend the fund. In most cases this is done after the contract has been consummated. It is also a risky decision in the sense that the AP is to be made upfront. Clients, consultants and contractors have their preferred alternatives for the use of AP which they tend to introduce. This sometimes leads to the tendency of the clients and consultants to attach AP to matters that would reduce the client's financial responsibilities on the project while the contractor is left to carry the yoke of the financial burden of the project. Hussin and Omran (2009) identified that stakeholders have different factors that support the need for AP; stating that the first category of stakeholders that offered opinion on the factors that support the need for it is the contractors followed by the consultants and clients in that order.

## **LITERATURE REVIEW**

Advance payment is an interest free mobilization loan from the employer to the contractor (FIDIC, 2010). It is a monetary value released to one party (contractor) by the other party (client) in anticipation of works to be carried out in a project (Abubakar, 2004). CIDB (2008) defined advance payment, or simply an advance as the

part of a contractually due sum that is paid in advance, while the balance will only follow after completion of the works. Another definition given by Rameezdeen *et al* (2006) stated that the mobilization advance 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. Also, Hussin and Omran (2009) described advance payments as advance of money by the client of any project to a prime contractor before, in anticipation of, and for the purpose of complete performance under one or more contracts. One intention or purpose that could be deduced common to the-above descriptions/definitions is that payment is made to the contractor prior to making appreciable progress on site with a view to reducing possible financial problem the might face.

FIDIC (2010) stated that advance payments may be made to prime contractors for the purpose of making advances to subcontractors. It prescribes 25 percent of the contract sum and that it can either be paid in one installment or multiple instalments to a contractor just as it is calculated as a percentage of the contract sum. CIDB (2008) further averred that advance payment is typically between 15 percent and 20 percent of the contract amount, but this depends on the nature of the works. Whereas the Public Procurement Act (PPA, 2007) stipulates 15 percent of the contract sum, majority of public clients in Nigeria pay between 15 percent and 50 percent. The exact percentage varies from state to state and administration to administration. While the Federal Government adopts 15 percent as contained in the PPA (2007), the Ondo State Government presently gives 30 percent as contained in its financial regulations and guidelines. However, the immediate past two administrations adopted 60 percent and 50 percent consecutively.

Hussin and Omran (2009) identified three purposes for the advance payment given by the client to the project contractor as decrease the financial burden of the contractor; assist the contractor to face the difficulty of special mobilisation of project; and to assist the smaller size contracting firms or enable the newer ones compete with the matured contracting firms. It was further stated that advance payment will be used by the contractor to purchase or pay for the rental of plant and equipment for construction and also to buy the construction materials. Similarly, Abubakar (2004) affirmed that advance payment may be considered useful and appropriate for contracts for experimental research or development work with non-profit educational or research institutions, contracts solely for the management and operation of government-owned plants, contracts for acquisition at cost of facilities for government ownership, and contracts of such a highly classified nature that is considered undesirable to permit assignment of claims under the contract. Others are contracts entered into with financially weak contractors whose technical ability is considered essential to the client (in this case the bank shall closely monitor the contractor's performance and financial controls to reduce financial risk of the client), contracts for which a loan by a private financial institution is not practicable, and contracts under which exceptional circumstances make advance payments the most advantageous contract financing method for both the government and the contractor.

### **Standard Contract Provisions for Advance Payment**

Construction Industry Development Board (CIDB, 2008) highlighted some of the standard forms of contract that make provisions for payment of advance by the employer to the contractor. However, the CIDB stated that the following forms of contract were considered to be meeting the principles of modern contracting if utilised unaltered: Federation Internationale Des Ingenieurs-Conseils (FIDIC); General Conditions of Contract for Construction Works (GCC, 2004); New Engineering Contract (NEC – now referred to as the Engineering and Construction Contract, ECC); and The Joint Building Contracts Committee (JBCC Series 2000).

There is provision in the JCT form of contract (clause 4.8) for a contractor to receive payment in advance. The principle is that a lump sum would be paid to the contractor on the date stated in the contract particulars. The contractor would then repay the monies in accordance with the schedule in the contract particulars. As the interim payment procedures will not normally commence until after the date of possession, an Employer would be able to pay the contractor for this early work through the advance payment option. To provide the Employer with some security it is possible the contractor may be required to provide an 'advance payment bond' (Ramus, Birchall and Griffiths, 2006). The Joint Building Contract Committee (JBCC) Series 2000, Principal Building Agreement (PBA) and the Minor Works Agreement (MWA) require that the Employer provides an advance payment on receipt of an advance payment guarantee (APG) from the contractor, and the contractor provides the guarantee according to the JBCC Advance Payment Guarantee form. The JBCC-PBA also requires that the Principal Agent informs the contractor that an advance payment guarantee will be made to a nominated or selected subcontractor as the JBCC Nominated Subcontract Agreement (NSA) also makes provision for advance payments. The JBCC-PBA also makes provision for payment of materials and goods stored off site in terms of an advance payment guarantee, and a recovery statement (a statement prepared monthly by the Principal Agent in terms of the JBCC Recovery Statement form to reflect the adjustments to be made for advance payments from interim payment certificates).

Clause 14.2 of the FIDIC allows the Employer to make an advance payment as an interest free loan for mobilization should the contractor provide a valid and enforceable guarantee until the advance payment has been repaid in full. The details of the advance such as the total advance payment, the number and timing of installments (if more than one) and the applicable currencies and the proportions are established in the contract data. Similar provisions are provided in the Conditions of Contract for Plant and Design-Build and the Conditions of Contract for FIDIC EPC/Turnkey Projects. The Institution of Civil Engineers (ICE) commissioned the development of a new form of contract in 1986 as it was felt that there was a need for a form that had clearer language, clearer allocation of responsibilities and reduced opportunities for contractual gamesmanship. This resulted in 1991 in a consultative form of the NEC form of contract with a first edition published in 1993 (Ashworth, 2012). Provision for advance payment to the contractor is made in secondary option X14 of the Engineering and Construction Contract and the Engineering and Construction Subcontract. The advance payment is made either within four weeks of the contract date or, if an advance payment bond is required within four weeks of the latter of the contract date and the date that the employer receives the advance payment bond.

The PPA (2007) is not a standard form of contracts, but comprises the legal framework, based on the United Nations Commission on International Trade Law (UNCITRAL) model, and the harmonization of existing government practices and policies on procurement in Nigeria with a broad aim of dealing exhaustively with all issues related to the business of public procurement in orderly and transparent manner (Ibrahim, 2008). Provision for advance payment to contractor is made in clause 35 of the PPA (2007). It states that in addition to any other regulations as may be prescribed by the Bureau, a mobilization fee of not more than 15 percent may be paid to a supplier or contractor supported by the following: (i) in the case of national Competitive Bidding, an unconditional bank guarantee or insurance bond issued by an institution acceptable to the procuring entity, or (ii) in the case of International Competitive Bidding, an unconditional bank guarantee by a banking institution acceptable to the procuring entity. It further added that once a mobilization fee has been paid to any supplier or contractor, no further payment shall be made without an interim performance certificate issued in accordance with the contract agreement. General Conditions of Contract (GCC, 2004) for works of civil engineering construction, commonly referred to as the "ICE Conditions", JCT 1980, Federal Ministry of Works and Housing standard form and Nigeria Standard Form of Building Contract (1990) have no provisions for advance payment. It is therefore recommended that additional conditions of contract be included in the contract data for advance payment.

### **The Need for Advance Payment in Construction Projects**

The conditions that support advance payment to construction contractors could not be too different from the ones identified by Hussin and Omran (2009) and those that are peculiar to Nigeria situation. Sometimes advance payment may be required to solve financial problem on the part of the contractor: that is the cash flow of a contracting firm. It may also be necessary where the project start-up costs are excessive and would not normally be recouped quickly by the contractor (Ashworth, 2012). The financial factor is the most important factor when discussing about the use of advance payment in construction.

Similar to solving financial problem, problem of delay payment can also be averted with the provision of advance payment. This is because the problem of delayed payment from the client of the project to the contractor has been common in the construction industry in recent times. Payment is the most important aspect of construction project from the contractor's perspective. Without the payment from the client after stage completion of any project, the contractor might face cash flow problem. More serious, the company, especially that smaller contracting firms might close down or go bankrupt if the client keeps delaying their payment or do not pay at all. It helps to speed up progress of work and ensure quick delivery of project. If an owner of a project directs the contractor to finish up a project ahead of the existing schedule in order to shorten the construction period with the purposes of saving time and cost indirectly, the needs for extra money is very obvious. In that case the condition might require working more efficiently and effectively if the contractor can be provided advance payment by the owner.

Delays of work can be prevented if the contractor is granted advance payment. Delay could be defined as the time overrun beyond completion date specified in a contract, or beyond the date that the parties agreed upon for the delivery of a project (Assaf and Al-Heiji, 2006). The common sources of delays are related to payment and financing traceable to the client and the contractor respectively. Aibinu and Odeyinka (2006) stated that financing projects in Nigeria continue to be one of the major sources of project delays and of poor time performance. Advance payment may be required for extra and changes in the work. Construction contracts generally include clause that gives the owner the right to order extras and changes (not exceeding 5 percent of

the contract price). For the contractor’s protection, the owner should provide a time extension and payment for performing the changes. Otherwise the contractors have to compensate for the impact of the change and extra other work, if any. This can tie up funds and erode cash flow. Some forms of contract have provisions for variation in quantities. Advance payment may be readily available to forestall delays that could arise from this. Payment of advance payment could be seen as risk management tool in construction project. The construction industry is notoriously risky; much of the preparatory paperwork that precedes construction projects can be viewed as the formulation of risk allocation between the owner, the contractor, and the designer. Advance payment provides financial protection against changed condition. Historically, unforeseen subsurface conditions have caused many construction claims and have driven more than a few contractors into default. This important provision, sometimes referred to as a ‘‘differing site conditions’’ clause, is now part of the standard form of contract documents. Changed conditions or unforeseen site conditions might affect the cost of work.

## **RESEARCH METHODOLOGY**

The study was carried out in Ondo State, Nigeria; based on the fact that there is high volume of construction works ranging from road infrastructure to office buildings and other social infrastructural projects within the past 5 years. The volume of construction works also signifies huge presence of construction professionals in the state. Moreover the Ondo state Government has experimented three different percentages of 60%, 50% and 30% of the contract sum as advance payment for construction contractors within the past 12 years and therefore form a good basis for investigating the significance of advance payment to construction project delivery. The study population comprised Architects, Quantity Surveyors, and Engineers drawn from clients, consultants and contractors’ organizations in Ondo state. Information from the Projects and Price Monitoring Unit (PPMU) of the State revealed that 7 out of all the Ministries, Departments and Agencies (MDAs) were the major procurer of construction projects in the State and hence served as client’s organisation for this study. The list of registered members of each profession were sourced from the state chapter of the relevant professional bodies while the list of contractors registered in category E – J was obtained from the state ministry of works. Therefore the total population of the study was found to be 194 respondents comprising 7 clients’ organisation, 33 contractors, 27 Architects, 53 Quantity Surveyors and 74 Engineers. Having defined the study population, and in order to determine a sample size that will adequately represent the total population, a sample size determination formula:  $n = \frac{N}{1 + N(e)^2}$  by Yamane (1967) was adopted. Where n is the sample size, N is the population size and E is the level of precision which is taken as  $\pm 10\%$ . Substituting the predetermine variables, a sample size of 127 respondents comprising 6 client’s organisations, 24 Contractors, 21 Architects, 34 Quantity Surveyors and 42 Engineers was determined. Data for this study were therefore collected via questionnaire administered on clients, practitioners and contractors. Reliability test was also carried out on the research instrument using the Cronbach’s alpha ( $\alpha$ ). According to Nurosis (1992), a figure of  $\alpha$  near to 1 shows higher reliability. Table 1 shows the Cronbach’s alpha for the instrument of the research, the alpha ( $\alpha$ ) values for the instrument relating to the processes of advance payment and the reasons for advance payment in construction projects were 0.83 and 0.78 respectively; and thus signify that the instruments used for the study were reliable.

A total of 127 questionnaires were administered to construction professionals, clients and contractors using stratified sampling techniques; out of which 65 questionnaires were retrieved and also found suitable for analysis. This represents about 51.18% response rate, which is far above the typical norm of 20 – 30% response rate in questionnaire survey of the construction industry (Akintoye and Fitzgerald, 2000). The data collected were thereafter analysed using percentiles and mean-score.

**Table 1: Reliability Coefficient for the research Instrument**

<b>Scale of measure</b>	<b>Cronbach’s Alpha (<math>\alpha</math>)</b>
Processes of Advance Payment	0.830
Reasons for Advance Payment	0.780

## **RESULTS AND DISCUSSIONS**

Table 2 presents the summary of the background information of the respondents. It is observed that 18.4% of the respondents are clients, 30.8% are contractors, 15.4% are architects, and 20% are quantity surveyors while 15.4% are engineers. Similarly, 15.4% of the respondents have 1-5 years experience, 43.0% have 6-10 years, 27.7% have 11-15 years while 10.8% have 16- 20 years experience and 3.1% have more than 20 years. The analysis further shows that 33.8% of the respondents are Higher National Diploma holders, 32.3% have Bachelor Degrees, 30.8% have masters and 3.1% have doctorate degrees in their various fields of study. Furthermore, 1.6% of the respondents are fellow members of their respective professional bodies, 96.8% of them are corporate members while 1.6% are graduates/probationers. Therefore, it can be concluded that the data collected for analysis in this study is reliable enough to form a good basis for this research as can be seen from

the qualities of respondents in terms of their educational and professional background as well as their years of experience in the construction industry.

**Table 2: General Information of Respondents**

<b>Demographic Variables</b>	<b>Frequency</b>	<b>Percent</b>
<b>Professional Background</b>		
Client	12	18.4
Contractor	20	30.8
Architect	10	15.4
Quantity Surveyor	13	20.0
Engineer	10	15.4
<b>Total</b>	<b>65</b>	<b>100.00</b>
<b>Years of Experience</b>		
1-5 years	10	15.4
6-10 years	28	43.0
11-15 years	18	27.7
16-20 years	7	10.8
More than 20 years	2	3.1
<b>Total</b>	<b>65</b>	<b>100.00</b>
<b>Highest Educational Qualifications</b>		
HND	22	33.8
B.Sc./B.Tech.	21	32.3
M.Sc./MBA/MPM	20	30.8
Ph.D.	2	3.1
<b>Total</b>	<b>65</b>	<b>100.00</b>
<b>Professional Status</b>		
Graduate/Probationer	1	1.6
Corporate Member	62	96.8
Fellow	1	1.6
<b>Total</b>	<b>64</b>	<b>100.00</b>

### **Processes of Advance Payment**

This is respect of ascertaining the awareness/ understanding of the respondents of advance payment. Results from Table 4 show that majority of the respondents, 84.6% mentioned that APG and performance bond are the necessary financial documents required for the release of advance payment to contractors while 13.9% stated that both APG and insurance company guarantee are needed with 1.5% supporting bank guarantee only. It is clear that advance payment is made to the contractor once during the duration of the project as 98.5% of the respondents supported this and 1.5% said twice. Concerning responses on the stage at which advance repayment deduction commences, 97.0% of the respondents said that repayment deduction starts at the first interim certificate when the contractor has attained 10% performance on site while 1.5% chose at the second interim certificate when the contractor has attained 10% performance on site, and 1.5% chose others. The Table further reveals that 49 respondents representing 75.4% of the total respondents agreed that the advance repayment is done vide four equal deductions of 25% from four consecutive interim certificate while 15.4% believed it is done as many times as possible and 9.2% agreed to five equal installment of 20%.

**Table 4: Processes of advance payment**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
<b>Timing of advance payment (AP)</b>		
Immediately after signing of agreement taking of possession of site by contractor	7	10.8
Immediately after signing of agreement & taking of possession of site by contractor & submission of bank APG	58	89.2
<b>Total</b>	<b>65</b>	<b>100</b>
<b>Documents qualifying contractor for AP</b>		
Bank guarantee only	1	1.5
Both bank guarantee and Insurance Company guarantee	9	13.9
APG & performance bond	55	84.6
<b>Total</b>	<b>65</b>	<b>100</b>
<b>No of times Advance Payment is paid</b>		
Once only	64	98.5
Twice only	1	1.5
<b>Total</b>	<b>65</b>	<b>100</b>
<b>Stage of commencement of Advance Payment</b>		
1 <sup>st</sup> interim certificate when the Contractor has attained 10% performance	63	97.0
2 <sup>nd</sup> interim certificate when the contractor has attained 10% performance	1	1.5
Others	1	1.5
<b>Total</b>	<b>65</b>	<b>100</b>
<b>Number of deductions from certificates for AP.</b>		
Four equal installments of 25%	49	75.4
Five equal installments of 20%	6	9.2
As many times as possible	10	15.4
<b>Total</b>	<b>65</b>	<b>100</b>

### **Purpose of advance payment in construction projects**

Table 5 shows the result of the analysis on the reasons for advance payment in construction projects in Nigeria. It is observable that the major reasons for advance payment in order of importance are to: prevent delay of works (MIS=4.45); assist in stockpiling major materials (MIS=3.94); solve financial problem of contractors (MIS=3.69), prevent delay payment by clients (MIS=3.63); and ensure good quality work is commenced and maintained by contractors (MIS = 3.09). All the major reasons stated above still revolve around the same goal of ensuring that contractors have sufficient capital to kick-start construction projects whenever they secure contract award. This becomes more important since in most situations, contractors face difficulties in securing loan from commercial banks to finance their contract due to stringent conditions imposed by the banks. This also serves as a fillip to the observation of Aibinu and Jagboro (2006) that financing projects in Nigeria continue to be one of the major sources of delay leading to poor time performance of construction projects.

On the other hand the advance payment to contractor will ensure that contractors stockpiles major construction materials likely to be affected by fluctuations in the course of the project while also guaranteeing healthy cash flow. The result also agree with Hussin and Omran (2002) and Abeysekera (2009) that project contractors and subcontractors could be paid in advance to assist them in starting the work and maintaining healthy cash flow. The respective p-values against the identified reasons also shows that the respondents are in agreement with the ranking of these factors as supporting the use of advance payment in construction projects with their p-value less than 5%; meaning that these factors are highly significant. However the p- value of 0.0007 against the reason that advance payment is to prevent delay payment indicates that the respondent are not in agreement in ranking this reason. This may be as a result of the fact that delay payment still characterize most government projects in Nigeria, although the reason may not be unconnected with the present economic recession in the country. However, in spite of the important reasons justifying advance payment in construction projects, there appears to be little or no effect of advance payment on time performance of construction projects; the public clients surveyed in this study indicated that it was as a result of abuses of advance payment by contractors that made government reduce the percentage of advance payment to contractors from 60% to the current 30% of the contract sum.

**Table 5: Purposes of Advance Payment in Construction Projects.**

Factors	Client		Consultant		Contractor		Overall		F- Statistics	Level of Sig. (p- value)
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank		
To present delay of works	4.50	1	4.42	1	4.45	1	4.45	1	0.0717	0.9309
To assist in stockpiling major materials	4.08	2	3.82	3	4.05	2	3.94	2	0.4166	0.6611
To solve financial problem of the contractor	3.83	3	3.61	4	3.75	3	3.69	3	0.0298	0.7434
To solve delay payment by client	3.25	5	4.00	2	3.20	6	3.63	4	8.2236	0.0007
To ensure good quality work is Started/ maintained by the contractor	3.33	4	3.18	5	2.80	7	3.09	5	1.6304	0.2041
To serve as risk management tool for Client & Contractor	3.17	6	2.70	6	3.25	4	2.95	6	1.7258	0.1865
To enable contractor complete project ahead of Schedule	2.92	7	2.15	7	3.25	4	2.63	7	8.8406	0.0004
To compensate contractor for any extra work	1.83	8	1.58	8	2.00	8	1.75	8	2.1455	0.0126
To compensate contractor for variation in works due to errors or mistakes	1.58	10	1.48	9	1.55	10	1.52	9	0.1262	0.8817
To protect the contractor against unforeseen differing site condition	1.75	9	1.27	10	1.75	9	1.51	10	3.5250	0.0355
To give gratification to job getters	1.33	11	1.06	11	1.15	11	1.14	11	2.2440	0.1146

## **CONCLUSIONS**

The study has been able to identify the most important reasons justifying the sustainability of the use of advance payment in construction projects. The results provided information to clients, consultants and contractors on the effects of advance payment on the contractor's cash flow; particularly in terms of AP's positive and significant effects on the contractors' net cash flows thereby solving the financial problem of the contractor. It has also established that advance payment impacts significantly on the cost and time performance of construction projects in Ondo State.

Construction clients and consultants involved in project planning and execution should ensure that relevant needs/uses for advance payment as discovered through this study are considered in the implementation of advance payment policy and included in the contract while the contractors should also be made to comply with the needs/uses so stated in their contracts.

It was discovered that the need to assist the contractor in stock-piling materials required for the project is the second most important factor supporting the need/use for advance payment, the client and consultant should endeavour to ascertain the relevant materials that are susceptible to price fluctuation which would be handed over to the contractor as part of the utilization of the advance payment immediately the contract is signed. This would assist in monitoring the use of the fund.

The study further revealed that advance payment has positive impact on the contractor's cash flow, and cost and time performance of construction projects; thereby corroborating the fact that advance payment solves the financial problem of contractors. Therefore, clients and consultants should continue to use advance payment in their construction projects.

The study showed that majority of the contractors have cash surplus (positive cash flow) at an average of 28 percent of the contract sum granted them as advance payment which is a confirmation of the adequacy, sufficiency and sustainability of the current government policy of 30 percent of the contract sum as advance payment in the state. This policy should be continued and maintained in all public construction projects in the state.

The study revealed that advance repayment (APR) has significant relationship with the contractor's net cash flow. Therefore, advance repayment deduction should be made much more convenient by allowing it to span the contract duration or at best to be concluded when actual performance on site reaches 85% as against the contractual provision for deduction by four equal times of 25%. This would enhance the net cash flow of contractors; thereby assisting in solving the financial problem of contractors during construction process.

## References

- AbdulRazaq, M., Ibrahim, Y.M. and Ibrahim, A.D., Investigating the Practice of Cash Flow Forecasting by Contractors in Nigeria. *Proceedings of West Africa Built Environment Research (WABER) Conference held at Abuja, Nigeria on 5<sup>th</sup>-8<sup>th</sup> November, 2012*
- Abeysekera, V., Re-engineering payment procedures: an agenda for client financed construction. In: Ng, S.T., Cheung, S., Lam, K. & Poon S. (eds.). *Re-engineering construction: Enabling and motivating excellence*, Hong Kong, pp. 79-85, 2002.
- Abubakar, A., Advance Payment and Performance Bond: Management and Administration. *A paper presented at the 2-day seminar on Contract Administration and Management organised by the Nigerian Institute of Quantity Surveyors at Lagos Airport Hotel, Ikeja, Lagos, Nigeria on 4<sup>th</sup>-5<sup>th</sup> April, 2004.*
- Aibinu, A.A. and Jagboro, G.O., The Effects of Construction Delays on Project Delivery in Nigerian Construction Industry. *International Journal of Project Management*, vol. 20, pp. 593-599, 2006.
- Aibinu, A.A. and Odeyinka, H.A., Causes of Delays and their Causative Factors In Nigeria. *International Journal of Construction Engineering and Management*, vol. 132, no. 7, pp. 667-677, 2006.
- Akanbiemu, A.O., Need for Advance Payment. Higher National Diploma Thesis (unpublished), Yaba College of Technology, Lagos, Nigeria, 1997.
- Arditi, D. and Yasamis, F., Incentive/disincentive contracts: perceptions of owners and contractors. *Journal of Construction Engineering and Management*, vol. 124, no. 5, pp. 361-371, 1998.
- Assaf, A.A. and Al-Hejji, S., Causes of delay in large construction projects. *International Journal of Project Management*, vol. 24, no. 4, pp. 349-357, 2006.
- Bubshait, A.A., Incentive/disincentive contracts and its effects on industrial projects. *International Journal of Project Management*, vol. 21, no. 1, 63-70, 2003.
- Cheetham, D.W., Lewis, J. and Jones, S.T., The effect of stage payments on contractors' cash flow – some possible consequences. *Proceedings of CIB W96 – Architectural Management-Dublin. 1995.*
- Clough, R.H. & Sears, G.A. (1994). *Construction Contracting*. (6<sup>th</sup> ed.). New York: John Wiley and Sons, Inc.
- Construction Industry Development Board (CIDB), Inform Practice Note on Advance Payment. *Construction Industry Development Board. Practice Note 16, version1- November, 2008.*
- Daramola, A. I., Appraisal of the Impact of Advance Payment on Public Construction Project Delivery in South Western Nigeria. A Bachelor of Technology Thesis (unpublished), Federal University of Technology, Akure, Nigeria, 2010.
- FIDIC, Clause 14.2. Conditions of Contract (International) for Building and Civil Engineering Construction approved by International Federation of Consulting Engineers, 2010.
- Hussin, A. and Omran, A., Advance Payment: To What Extend it "Save" The Construction Works. *The International Conference on Administration and Business organised by the Faculty of Business and Administration, University of Bucharest, Romania, 14<sup>th</sup>- 15<sup>th</sup> November, 2009.*
- Latham, S.M., Constructing the team: Final report of the government/industry review of procurement and contractual arrangements in the UK construction industry. London: HMSO., 1994.
- Motawa, I. and Kaka, A., Payment mechanisms for integrated teams in construction. *The Australasian Journal of Construction Economics and Building*, 8(2), 8-17, 2008.
- Oyetunji, A.A. and Anderson, S.D., Relative Effectiveness of Project Delivery and Contract Strategies. *Journal of Construction Engineering and Management*, vol. 132, no. 1(3), pp. 0733-9364, 2006.
- Potts, K.P., An alternative payment system for major 'fast tract' construction projects. *Journal of Construction Management and Economics*, Vol. 6, no. 25-33, 1988.
- Public Procurement Act (PPA, Clause 35, 2007.
- Rameezdeen, R., Palliyaguru, R.S. and Amaratunga, D., *Financing Contractors in Developing Countries: Impact of Mobilisation Advance Payment*. Department of Building Economics, University of Moratuwa, Sri Lanka, Research Institute for the Built and Human Environment, University of Salford, 2006.
- Ramus, J, Birchall, S. and Griffiths, *Contract Practice for Surveyors*. (4<sup>th</sup> ed.). Oxford: Butterworth-Heinemann Publications, 2006.
- Talagala, S.J., Evaluation of Advance Payment Systems. Master of Engineering Dissertation (unpublished). University of Moratuwa, Sri Lanka, 1997.
- Williams, Y., Assessing Extension of Time Delays on Major projects. *International Journal of Project Management*, vol. 21, pp. 19-26, 2003.

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