

## DEVELOPING A REALISTIC BUDGET FOR CONSTRUCTION PROJECTS: LESSONS FROM NIGERIA.

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### Abstract

*The study discussed some of the operational challenges confronting the Nigerian construction industry and asserts that these could be stimulated by budgeting and budgetary control. The principal objectives were to examine the primary issues in budgeting and also explore the application of budget decisions in the construction process. With a focus on three commercial nerve centres of the country (Lagos/Abuja/Port Harcourt), questionnaires were administered to elicit information from clients, contractors and consultants in the construction industry. Results of descriptive/non parametric statistical technique indicate that one of the major problems confronting the construction sector in Nigeria is inadequate managerial control in the form of sound budget planning and control. The study concluded that the development and implementation of a realistic budget for construction projects is a function of the application of a refined cost central procedure such as identification of input required/output desired and matching of tenders with the budgets.*

**KEYWORDS:** *Budget; Construction; Control; Decision; Developing; Nigeria; projects.*

### Introduction

In the last three decades, a number of negative features have besieged the activities in the construction industry. Many of these features arose mainly as a result of the enormous increases in the revenue accruing to the Nation particularly from petroleum resources. These resources were not channeled properly and effectively with a view to obtaining value for money (Wahab, 1992). Consequently, many projects initially considered to be feasible became unviable after commissioning. Others take too long to complete and thereby denying the initiation, commissioning and completion of more beneficial projects (Wahab, 1994). Other operational challenges confronting the Nigerian construction industry include: the complexities of

construction operations involving designers, contractors, sub-contractors, specialist firms, etc; the changing requirements of the clients; absence of sound budget planning and control leading to inadequate fund sourcing; inadequate capacity of the industry in relation to competent personnel and availability of building materials; and, under-development and acquisition of mechanical plants (Fagbenle, 2000 and Wahab, 1994). There is a general consensus among authors that unique external factors shape the financial structure of construction companies. These factors include inability of contractors to take loans on short term credits, the large amount of receivables on the goods because of the owners' retention of progress payments, etc (Olateju, 1992). Harris, et al. (1977) enumerated the factors that affect the cash flow of a firm as project duration, expected profit margin, delays in receiving payments and available credit finance. Wahab (1994) discussed some of the operational problems in the Nigerian construction industry and concluded that the full implementation of the National Construction Policy in the country is crucial to the development of realistic budget for the construction industry. Cabe (2003) posited that a project should be controlled by considering the cost, value and risk periodically throughout its life. He posited further that cost control requires one to: plan required resources (people, equipment, materials and time); estimate the cost of each resource; record the cost plan; evaluate costs against whole-life value; monitor expenditure to check it matches expected costs; monitor project changes to check that they do not invalidate the cost plan; and, update the cost plan as needed. Landis (2008) opined that with estimates prepared, attention can be given to the budget review process. This include: identifying priorities; recognizing trade-offs; preparing cost/benefit analysis; and, revising cost estimate.

In the traditional sense, the primary purpose of preparing budget is to understand and control costs. This concept of budget has therefore transformed into using budget proposal as an instrument for individual, public and private policy. It is useful to all parties involved in a project as a planning and control tool. Budget could be employed by the client to get priorities among projects competing for limited resources. It enables the client to set the machinery in motion for meeting the interim valuations as when due and also used to justify the elimination of uneconomic project(s) as well as the revision of his objectives to meet the demand of a manageable project. Budget could also be employed by the consultants as cost control tool in managing construction project. In order to meet clients' requirements of function and ensuring completion on time within the set cost and required quality standards however, this paper explore the application of budget decisions in the construction process and identify the likely challenges involved.

### **Research Methodology**

The target population comprises of clients, contractors and consultants that were randomly chosen from the register of the Federal Registration Board of Nigeria. One hundred questionnaires were administered to each of the three categories of target respondents in three commercial nerve centres of the country (Lagos, Abuja and Port Harcourt). The major reason for selecting these metropolitan areas lies on the fact that more than 60% of the construction firms in the country have their head offices located in these three locations. Moreover, approximately 65% of the volume of construction activities in the country takes place in these

areas (Fagbenle, 2000). Research assistants were employed for the distribution and collection of questionnaires in this regard. 86, 92 and 90 questionnaires were respectively filled and returned by clients, contractors and consultants in this perspective. Some of the procedural acts for sound budgeting and the features of budgetary control were initially identified. The procedures include the following: gathering of information needed for making a realistic plan; establishment of order of work packages and costs involved; forecasting likely incomes and profits; calculation of cash flows and demands on cash, monitoring and evaluation as work progresses; and, making allowance of variances and revisions. The features of budgetary decisions are: stating company objectives and planning business activities; putting plans into financial terms; setting plans in motion through various means; exercising control through the employment of an effective communication system; coordinating all functions relating to operations by managers/directors; and, stimulating action with a view to using the available business resources in an effective manner.

Respondents were then asked to indicate their priority preferences of the operational measures of these various budget decisions in their construction process. This is indicated on a 5 – point scale, 1-“not important” to 5-“very important”, according to respondent’s category. The relative importance index was used to determine the importance which clients, contractors and consultants attached to the budget operational measures. This is expressed as (Kometa et al., 1994, cited in Ojo, 2009):

$$RI_p = \sum ri \quad i = \frac{1}{N \times H}$$

Where  $ri$  = rating given by the  $i^{th}$  respondents ranging from 1 to 5.

H –highest rating (5 in this respect) and

N –total number of respondents. The results are presented below.

## Results and Discussions

The frequency counts and the results of the relative importance indices by the three categories of respondents were presented in Tables 1 and 2. The results in Table 1 revealed that clients in the construction industry attached importance to the steps for good budgeting in the following order: gathering of information needed for a realistic plan (RII = 0.85); establishment of work packages/costs involved (RII = 0.84); calculation of cash flow and demand on cash (RII = 0.82); monitoring/evaluation as work progresses (RII = 0.74); making allowances for variance/revisions (RII = 0.72); and forecasting likely incomes/profits (RII = 0.62). This ranking is not surprising in view of the fact that clients in the construction industry have realized the need for sound budgeting and the critical importance of overall project success. The views of the other two categories of respondents (contractors and consultants) however differ from that of the clients especially in the area of forecasting likely incomes and profits. While the clients rated this variable last, it was rated third by the duo of contractors and consultants. The results underscored the critical importance of forecast to contractors and carrying out their outlined plans. On the other hand, forecasting profits at this stage is normally considered as premature for the clients and this might inform the reason for this low rating by the clients. The ratings (RII) of the contractors and the clients followed the listing order, in a descending manner, as contained in Table 1 below. The results in Table1 therefore necessitated the need for eliciting information on the features of budgetary decisions/control and the results are given in Table 2.

There seems to be a consensus of opinions by all the three categories of respondents as they all agreed to the procedural features in the order listed in Table 2.

**Table 1: Frequency Counts and Relative Important Index (RII) of Procedures for Budgeting (Clients, Contractors and Consultants)**

S/N	Procedures	Clients					Contractors					Consultants					CLI	COT	COS
		5	4	3	2	1	5	4	3	2	1	5	4	3	2	1	RII	RII	RII
1	Gathering of information needed for making a realistic plan.	50	20	8	5	3	52	24	8	4	4	49	27	8	2	1	0.85	0.85	0.85
2	Establishment of order of work packages and costs involved.	47	21	7	8	3	46	27	15	1	3	42	22	18	5	3	0.84	0.84	0.81
3	Forecasting likely incomes and profits.	10	10	55	0	11	44	27	3	16	2	40	20	20	1	9	0.62	0.80	0.78
4	Calculation of cash flows and demands on cash.	42	24	12	4	4	41	19	21	4	7	27	30	12	20	1	0.82	0.78	0.73
5	Monitoring and evaluation as work progresses	36	21	19	10	0	32	22	15	15	8	24	27	19	10	10	0.74	0.72	0.70
6	Making allowance for variances and revisions	28	19	27	1	11	25	17	18	25	7	20	29	10	19	12	0.72	0.66	0.66

**Note:** 5 – very important; 4 – important; 3 – averagely important; 2 – rarely important; 1 – not important.  
 CLI – Clients; COT – Contractors; COS - Consultants.

**Table 2: Frequency Counts and Relative Importance Index (RII) on Features of Budgeting Control (Clients, Contractors and Consultants)**

S/N	Features of Budgeting Control	Clients					Contractors					Consultants					CLI	COT	COS
		5	4	3	2	1	5	4	3	2	1	5	4	3	2	1	RII	RII	RII
1	Company's objectives are stated and business activities planned.	55	20	6	3	2	52	24	9	2	3	53	19	17	0	1	0.88	0.85	0.87
2	Plans are put into financial terms selecting options and combinations	51	21	8	5	1	47	25	12	4	4	47	23	10	5	5	0.87	0.83	0.83

	that give the desired profit based on return on capital employed.																		
3	The plans are set in motion through various means.	51	14	7	10	4	42	24	18	3	5	41	19	15	7	8	0.83	0.81	0.77
4	Control is exercised through the employment of an effective communication system and the comparison of budgeted figures with actual achievement.	46	15	13	6	6	42	10	15	6	19	41	7	12	15	15	0.81	0.71	0.70
5	All functions relating to operations are coordinated by appropriate managers and directors.	40	22	10	2	12	36	15	15	6	20	33	16	10	19	12	0.78	0.69	0.69
6	Action is motivated so that managers can use the available business resources in an effective manner.	36	26	9	1	14	30	13	21	10	16	31	15	16	14	14	0.76	0.65	0.68

Note: 5 – very important; 4 – important; 3 – averagely important; 2 – rarely important; 1 – not important.  
 CLI – Clients; COT – Contractors; COS - Consultants

### Strategies for Developing Realistic Budget for Construction Projects

From the foregoing tables, discussions and oral interviews conducted on the target respondents, it could be deduced that the task of developing a realistic budget for the construction projects involves the application of a refined cost control procedure. This can be broken down into the following stages.

1. The identification of input required and output desired.
2. The concise definition of the project to determine a realistic budget that inculcates all the control measures.
3. The matching of tenders with budget including treatment of post contract variations.
4. The demand for contractors plan of action stipulating the order in which the project will be executed and his anticipated expenditure. This is expected to be vetted, amended and approved to serve as a guide for post design budget.

As a lee-way to step 1, there is the need to have up-to-date data of current and forecast of future requirements as well as the cost of major building materials and components. Also, feasibility studies may be used to determine these indices.

At the pre-design stage, the preparation of preliminary estimates based on the brief supplied and amended is an attempt to forecast the cost of the project ahead of the design and the preparation of the Bill of Quantities. This practice will afford the client to know his financial commitments with respect to the expected quantity of labour and materials of required specification. At this stage, the client can be advised on alternative budget for different completion dates and sometimes the quantity of buildings.

Between the pre-design and post-design budgets are a number of activities. These include the sketch plan (outline proposal and scheme design) and working drawings (detail design, production information, bill of quantities and tender action). Post design budgets include pretender budget and programme budget. It must be stressed that the preparation of these budgets should take into consideration all the principles that govern cost control.

## Conclusion

The usefulness of the modern budgetary approach to the clients, contractors and consultants as an instrument for planning, monitoring and evaluation of construction projects had been emphasized. The various procedures of budgeting and the necessary features of budgetary control were also identified and the premiums attached to each of the indices by the three categories of target respondents were highlighted. The techniques for developing realistic budget for construction projects were also explored.

Recognizing the need for a refined cost control procedure in any construction project however, the paper emphasized that the development of realistic budget for the construction industry in Nigeria is hinged on the implementation of various national construction policies by the government and the industry. Similar studies in other countries of the developing nations are also advocated in this regard.

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