

IMPACTS OF BUDGETING AND BUDGETARY CONTROL IN THE EXECUTION OF CONSTRUCTION CONTRACTS

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ABSTRACT

Budgeting and budgetary control are necessary for the successful execution of construction contracts. This paper examines the impacts of budgeting and fiscal control in the execution of construction contracts. Primary data were sourced from 50 financial experts in the construction industry using a questionnaire comprising four research questions. The questionnaire was constructed using Likert Four-Point Scale Response and analyzed using weighted Mean. After that, research hypotheses were tested. These methodologies revealed that budgets are not used in the execution of construction contracts. Hence, the issue of budgeting and budgetary control became almost irrelevant in the study. As a result of these unfavorable findings, adequate awareness of the impacts of budgeting and fiscal control in the execution of construction contracts and submission of budgets and budgetary control measures as an integral part of conditions of construction contracts were recommended.

Keywords: budgeting, budgetary control, construction contracts, finance, projects

INTRODUCTION

No doubt, the construction industry is a significant sector in the economy of many nations. As houses are being built, roads, bridges, dams, etc., being constructed, nations' economies are being touched through wealth creation. The industry's contribution to these nations' economic growth makes it imperative for stakeholders in these nations' financial growth projects to treat matters affecting the industry seriously. Two of such issues discussed in this study are budgeting and budgetary control, involving industry contracts.

Budgeting is the process of creating a plan to spend money. The spending plan is called a budget. Credit Counselling Society, CCS (2019) stated that budgeting is merely balancing one's expenses with his income while Peavler (2019) noted a company's budget document is a detailed financial statement that projects expenditures on a monthly, quarterly, or annual basis; and that budgets let companies compare how actual spending stacks up against predictions, thus allowing for more accurate planning moving forward. Robinson (2019) stated that budgeting has always been part of construction organizations of any size. It is crucial to control the construction business and ensure that it spends less than bringing in. Designing Buildings Ltd. (2019) stated that construction projects' budgets determine affordable resources to the client based on real evidence. Hence, they should be set as early as possible.

On the other hand, a construction contract sets a date and specifies parties to participate in construction activities. It is usually between a client and a contractor or supplier who is providing goods or services. It contains certain conditions that define the scope of work, mode of payment, duration, and the like. From those above, it is evident that resources are involved in construction contracts. One of such resources engaged in ensuring the efficiency of service delivery is human labour (workforce). As listed by 5ME (2019), others are machines, materials,

money, and methods. The involvement of resources necessitates the need for budgeting and budgetary control. How these resources are managed is paramount. To ensure that these resources are properly managed and delivered within specified time and cost, parties are reached by parties involved in the construction contract.

However, it is not enough to prepare a budget for the execution of construction contracts; budgetary control at various arrangements is not negotiable to minimize cost and maximize profits. Of course, it is common knowledge that getting value for money can only be achieved through cost minimization vis-a-vis effective and efficient management of available resources. Getting value for money is the target of budgeting and budgeting control. Parties to construction contracts are expected to key in. The study's main objective is to determine the impacts of budgeting and budgetary control in the execution of construction projects. Specifically, the study seeks to provide an answer to the following research questions:

1. To what extent is the budget used in the execution of construction contracts?
2. To what extent is budgetary control applied in the execution of construction contracts?
3. What are the impacts of budgeting in the execution of construction contracts?
4. What are the impacts of budgetary control in the execution of construction contracts?

Based on the above research questions, the following null hypotheses were formulated and tested:

H₀ Budgets are not significantly used in the execution of construction contracts.

H₀: Budgetary control is not significantly applied to the execution of construction contracts.

H₀: Budgeting does not make significant impacts in the execution of construction contracts

H₀: Budgetary control does not make significant impacts in the execution of construction contracts.

THEORETICAL FRAMEWORK

Construction Contracts

Rodriguez (2018) stated that a construction contract is an essential document that defines the work scope and binds clients to contractors' services, including the payment terms. He also noted that service providers must understand the work scope specified in the contract agreement, complete the job as scheduled, and invoice as instructed to get paid. International Financial Reporting Standards, IFRS, (2017) stated that work under a construction contract is usually performed in two or more accounting periods. Consequently, the contract's primary accounting issue is the allocation of revenue and costs to the accounting period's review. The position of IFRS (2017) is supported by Deloitte (2019), who also stated that in the execution of construction projects, contracts provide requirements on the allocation of revenue and cost to accounting periods under review. Deloitte (2019) believes that construction contract revenues and expenses are recognized by reference to the stage of completion of contract activity where the outcome of the construction contract can be reliably estimated; else, only recognized revenue could be recovered to the extent of contract costs incurred.

Stages of Construction Contracts

There are six stages of a project in the execution of construction contracts. Koutsogiannis (2019) highlighted them as follows:

1. **Conception Stage**, where the dream begins. S
2. **Design Stage**: This is still a preliminary stage where the bidding process usually begins, and thoughts are transferred to drawings.
3. **Pre-construction Stage**: At this stage, bidding is completed, and the contractor has been chosen to do the work.
4. **Procurement Stage**: materials, equipment, and workforce are ordered and obtained at this stage in readiness to commence construction.
5. **Construction**: The work on paper is put on the ground at this stage.
6. **Post-construction**: This covers mainly commissioning, owner occupancy, and contract closure.

Construction Budgeting and its Impacts

Designing Buildings Ltd. (2019) stated that budgets for construction projects help in determining what is affordable. Thus, they are set as early as possible; and are based on real evidence. She also stated that the budget is set by the client and is distinct from cost plans prepared by a construction cost consultant (quantity surveyor), which are likely to focus on the construction cost. She added that it is shared on projects that the project budget and the project brief diverge over time. It is for this reason that careful cost control is significant. This means that the client must clarify how costs should be monitored by the cost consultant and what will remain within the client's organization's power.

Bigelow (2017) stated that budgets are used worldwide when an individual, organization, government, or business needs to plan for income and expenses. Often things do not always go as planned. She also stated that the actual cost of goods or services usually varies significantly from the budget plan, and when this occurs, other budget items are affected. The position of Bigelow (2017) is supported by Motley Fool's Knowledge Center (2019). It was stated that businesses use various budgets to measure their spending and develop effective strategies to maximize their assets and revenues.

Tukhvatullin & Pratchenko (2014) stated that the sales budget should not be drawn up in the construction industry and that the construction budget should fulfill its functions. They also noted the construction cycle does not depend on the plan of sales. The construction of the budgeting process in the construction industry based on the sales budget is impossible. Carnes (2017) is of the view that budgeting is necessary to determine whether a project is financially viable, to avoid cost overruns, prevent waste and secure financing; and that costing is a component of budgeting which is a necessary precondition to all other phases (planning and control) of the budget planning process.

Construction Budgetary Control and its Impacts

Tunji (2013) stated that budgetary control relates expenditures to personnel responsible for various cost centers' additional spending. Each manager is held accountable for the cost by which he has power. Carnes (2017) opined that the control phase of budgeting, geared towards

keeping cost under control, occurs after a project has begun and, if possible, complete the project under the budget. He also opined that a project manager must adjust his course to accommodate contingencies in the control phase. In conclusion, he stated that failure to heed those above might lead to delay in project completion cost overrun, groundless and illusory optimism because of variations in cost scheduling between planned and actuals. Adding to the impacts of budgetary control, D. T. Otley in Chand (n.d.) stated that budgetary control integrates efforts of personnel, corrects deviations, measures performance, and helps in learning from experience. Others are shifting attention to future operations plans, facilitation of communication in the Construction Company, and direction to the workforce.

RESEARCH METHODOLOGY

Survey research was adopted for the study. A questionnaire comprising four research questions with 27 multiple-choice items was administered to 50 financial experts in the construction industry. These experts were selected through a disproportionately stratified sampling technique. The questionnaire was constructed using Likert Four-Point Scale Response Alternative and analyzed using weighted Mean. The formula for calculating the Weighted Mean is shown below:

$$\bar{X} = \frac{\sum FX}{N}$$

Where: \bar{X} = Weighted Mean, \sum = Summation, F = Frequency, X = Nominal Value of Options and N = Number of Respondents. Nominal values were assigned to six scaling items as follows:

Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1 and Void (unfilled options) = 0. The Mean of each cluster was also calculated using the formula below:

$$\bar{X} = \frac{\sum X}{N}$$

Where: \bar{X} = Cluster Mean, \sum = Summation, X = Nominal Value of Mean of Each Option in a Cluster and N = Number of Cluster. The decision rule of acceptability was 3.0 and above, while points below 3.0 were rejected.

After that, the cluster means were analyzed using a table, percentage, and correlation coefficient (Pearson's Product Moment Correlation Coefficient), and the formula is stated below:

$$r = \frac{\sum XY}{(\sum X^2 \sum Y^2)^{1/2}}$$

Where r = correlation coefficient, x, and y are the variables, X and Y are the deviations. The hypotheses were tested using a correlation coefficient table for critical values of the hypothesis. The level of significance is 5%, while the degree of freedom is given as:

$$df = n1 + n2 - 2$$

RESULTS

Research Question One

To what extent is the budget used in the execution of construction contracts?

Table 1a – The Mean of respondents' views on the extent to which budget is used in the execution of construction contracts

S/N	Description	SA	A	D	SD	Mean	Remarks
	Budgets are used in the execution of construction contract at:						
1.	Conception stage	56	84	2	6	2.98	Reject
2.	Design stage	76	63	14	3	3.12	Accept
3.	Pre-construction stage	72	63	14	4	3.06	Accept
4.	Procurement stage	44	63	18	9	2.68	Reject
5.	Construction stage	60	45	6	17	2.56	Reject
6.	Post-construction stage	84	36	12	11	2.86	Reject
		Grand Mean				2.88	Reject

Respondents rejected all the items except items 2 and 3. With a grand mean of 2.88, the respondents did not accept that budget is used to execute construction contracts.

Table 1b: Testing of Hypothesis One:

H₀ Budgets are not significantly used in the execution of construction contracts.

Subject	No	Mean	T-Calculated	Table Value	Decision
SA + A	746	124.35	0.92	2.92	Accept
SD + D	117	19.50			

Since t-calculated is less than the table value, the null hypothesis is accepted.

This finding does not corroborate that of Bigelow (2017), who stated that budgets are used worldwide when an individual, organization, government, or business needs to plan for income and expenses.

Research Question Two

To what extent is budgetary control applied in the execution of construction contracts?

Table 2a – The Mean of respondents' views on the extent to which budgetary control applied in the execution of construction contracts.

S/N	Description	SA	A	D	SD	Mean	Remarks
	Budgetary control is applied in the execution construction contracts at:						
7.	Conception stage	36	42	14	20	2.24	Reject
8.	Design stage	64	45	26	6	2.82	Reject
9.	Pre-construction stage	36	63	20	10	2.58	Reject
10.	Procurement stage	88	66	10	1	3.3	Accept

11.	Construction stage	76	48	18	6	2.96	Reject
12.	Post-construction stage	76	57	16	4	3.06	Accept
Grand Mean						2.83	Reject

Respondents rejected all the items except items 4 and 6. With a grand mean of 2.83, the respondents did not accept that budgetary control is applied in the execution of construction contracts.

Table 2b: Testing of Hypothesis Two:

H₀ Budgetary control is not significantly applied in the execution of construction contracts.

Subject	No	Mean	T-Calculated	Table Value	Decision
SA + A	697	116.17	0.98	2.92	Accept
SD + D	425	70.84			

Since t-calculated is less than the table value, the null hypothesis is accepted.

This finding does not corroborate with that of D. T. Otley in Chand, S. (n.d.), who stated that budgetary control's impacts are integrating efforts of personnel, corrections of deviations, measurement of performance, and help in learning from experience.

Research Question Three

What are the impacts of budgeting in the execution of construction contracts?

Table 3a – The Mean of respondents' views on the impacts of budgeting in the execution of construction contracts.

S/N	Description	SA	A	D	SD	Mean	Remarks
	The impacts of budgeting in the execution of construction contracts are:						
13.	Determination of the viability of the contracts	112	48	10	1	3.42	Accept
14.	Aiding in the aversion of cost overruns	92	57	10	3	3.24	Accept
15.	Prevention of waste	60	27	4	24	2.30	Reject
16.	Securing of contract finance	96	57	8	3	3.28	Accept
17.	Planning and monitoring of projects	112	48	0	6	3.32	Accept
18.	Maximizing of contract profit	76	69	8	4	3.14	Accept
19.	Aiding in cash flow forecast	28	39	10	25	2.04	Reject
Grand Mean						2.97	Reject

Respondents accepted items 1, 2, and 3-5 but rejected items 3 and 7. With a grand mean of 2.97, the respondents did not get that budgeting impacts the execution of construction contracts.

Table 3b: Testing of Hypothesis Three:**H₀:** Budgeting does not make significant impacts in the execution of construction contracts

Subject	No	Mean	T-Calculated	Table Value	Decision
SA + A	921	131.58	0.98	2.92	Accept
SD + D	131.58	56.43			

Since t-calculated is less than the table value, the null hypothesis is accepted. This finding does not corroborate with that of Carnes (2017), who is of the view that budgeting is necessary to determine whether a project is financially viable, to avoid cost overruns, to prevent waste and to secure financing; and that costing is a component of budgeting and is a necessary precondition to all other phases (planning and control) of the budget planning process.

Research Question Four

What are the impacts of budgetary control in the execution of construction contracts?

Table 4a – The Mean of respondents' views on the impacts of budgetary control in the execution of construction contracts.

S/N	Description	SA	A	D	SD	Mean	Remarks
	The impacts of budgetary control in the execution of construction contracts are:						
20.	Integration of efforts of personnel	88	60	14	0	3.24	Accept
21.	Correction of deviations	76	63	8	6	3.06	Accept
22.	Measurement of performance	112	54	8	0	3.48	Accept
23.	Assist in learning from experience	76	81	8	0	3.3	Accept
24.	Shifting attention to future operation	92	60	12	1	3.3	Accept
25.	Facilitation of communication among the workforce	96	54	8	4	3.24	Accept
26.	Provision of organizational guidelines	96	69	6	0	3.42	Accept
27.	Comparison between actual cost and estimated cost of the project	80	84	2	1	3.34	Accept
		Grand Mean				3.30	Accept

Respondents accepted all eight items in Table 4. With a grand mean of 3.30, the bought that budgetary control impacts the execution of construction contracts.

Table 4b: Testing of Hypothesis Three:**H₀:** Budgeting does not make significant impacts in the execution of construction contracts

Subject	No	Mean	T-Calculated	Table Value	Decision
SA + A	1241	591	0.99	2.92	Accept
SD + D	155.13	73.88			

Since t-calculated is less than the table value, the null hypothesis is accepted. This finding does not corroborate with that of D. T. Otley in Chand (n.d.), who stated that budgetary control

impacts are integrating efforts of personnel, corrections of deviations, and measurement of performance and help in learning from experience.

CONCLUSION

From the responses obtained from research questions and subsequent testing of the hypothesis, it is evident that budgets are not entirely used to execute construction contracts. This isn't comforting. It was also discovered that adequate impacts had not been made from budgeting and budgetary control in the execution of construction contracts. These findings are not in tandem with the relevant literature that was reviewed in this work. Thus, further research work is necessary.

RECOMMENDATIONS

Based on the findings, the researcher made the following recommendations as a way forward in the execution of construction projects:

1. Adequate awareness should be created on the impacts of budgeting and budgetary control in the execution of construction contracts.
2. Submission of budgets and budgetary control measures should form an integral part of conditions of construction contracts.
3. Budgeting and budgetary control mechanisms should be simple to understand.

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