ASSESSMENT OF FACTORS DRIVING THE IMPLEMENTATION OF PROJECT MONITORING AND EVALUATION PRACTICES IN THE NIGERIAN CONSTRUCTION INDUSTRY

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ABSTRACT

Every project is largely motivated by the implementation of activities that will assure itseventual overall success. The construction industry is a unique industry that involves a large number of stakeholders who have individual interest to drive the achievement of the ultimate interest of the project. Against the backdrop that good, effective and efficient monitoring and evaluation practice could help in achieving the objectives of projects, this study identified and ranked the drivers that motivate Project Monitoring and Evaluation in the Nigerian construction industry A total number of forty (40) respondents were sampled using the purposive and snowball sampling techniques. Descriptive and t-test statistics were used for the analysis. The results indicate that in Nigeria, the following drivers are considered in order of importance/ranking by project monitoring and evaluation professionals: the overall project budget, the project duration, the size and scope of the project, and the assumption that links the project objectives to specific interventions or activities. The study concluded that there are no differences in how this variables was interpreted by the respondents. The overall goal or desired change of effect of the project had a standard deviation slightly greater than one (1.001) which suggests that there might be differences in the interpretation of the variable. The study also revealed that the overall project budget was the highest ranked important factor while the assumptions that link the project objectives to specific activities occurred as the lowest. The results of the study largely agree with the conventional wisdom of perceiving activity in the construction industry in terms of cost, time, and quality.

Keywords: *Factors, Implementation, Project, Monitoring, Evaluation*

INTRODUCTION

According to National Buerau of Statistics (2019), Construction contributed 6.17% to nominal GDP in the first quarter of 2019, higher than the 4.13% contribution a year earlier, and the 5.03% contributed in the fourth quarter of 2018.The construction industry plays a significant role in the development of any country and hence, delays in execution of construction projects could result in cost overruns, disputes, total abandonment, and consequently a negative rate of economic growth and monetary loss (Enshassi et al., 2007; Adinyira & Ayarkwa, 2010). Unfortunately, many projects, especially in the Nigerian construction industry experience extensive delays and thereby exceed initial time and cost estimates as a result of poor management practices (AlNajjar et al., 2009; Senaratne & Sexton, 2009; Zwikael, 2009).These unfortunate situations can be attributed to the poor, ineffective and inefficient supervision of the projects (that is Project Monitoring and Evaluation M2E). Kamau and Mohamed (2015) pointed out that there is a relationship between monitoring and evaluation and project success. Mwangu and Iravo (2015) also opined that monitoring and evaluation affect project success to a large extent and that there is a relatively strong relationship between monitoring and evaluation and project success. Sialala (2016) OPINED that timeliness of M&E integration helped to reveal mistakes and offered paths for learning and improvements

PMBOK (2001) explains that monitoring and control of construction project work is the process of tracking, reviewing, and regulating the progress to meet the performance objectives defined in the project management plan. It further explains that monitoring includes status reporting, progress measurement, and forecasting. Performance reports provide information on the project's performance with regard to scope, schedule, cost, resources, quality, and risk, which can be used as inputs to other processes.

It also includes all the organizational arrangements necessary to ensure project delivery, including, amongst others appropriate health, the measurement of its objectives and the associated cost and budgeting, as well as the

collection of data for future use. Evaluation is a tool for assisting project planners and developers in assessing the extent to which the projects have attained the objectives that are set forth in the documents related to the project (Crawford and Bryce, 2013). It is therefore necessary to identify the factors that drive the implementation of project monitoring and evaluation practices in Nigeria and also to establish their relative importance and ranking.

FACTORS DRIVING PROJECT MONITORING AND EVALUATION IN THE CONSTRUCTION INDUSTRY

Singh, Chandurkar, &Dutt, (2017) highlighted that monitoring and evaluation was the major driving factor in development. In the construction industry, the most influential indicator of success for a project, according to practitioners is the time for completion of major works. Major works are those parts of the project which take a lot of the time to complete and which must be completed before other parts of the project can continue like the substructure of a building (Gyadu- Asiedu, 2009). They are critical works and are dependent on the success of the project being executed. A key motivation is that such major works are milestones at which payment certificates can be raised and therefore practitioners attach special importance to them. The control of this indicator is in the domain of the Project Manager/ Consultant and the Project Team as far as they are able to ensure a good Project Monitoring and Evaluation. In the Nigerian construction industry, time for paying certified work done is a key influencer of the duration of the project. In the extreme case, this results in contractors suspending works until they receive payments (Gyadu-Asiedu, 2009).

The overall goal or desired change/effect of the project is another key factor driving project monitoring and evaluation. The goal of IFAD for example after the 1995 World Summit for Social Development was to embark on projects to reduce poverty. Key areas for monitoring and evaluating progress therefore included: Poor men and women improving aspects of their lives that they themselves consider the most important; the rural poor using improved livelihood strategies; gaining increased access to productive assets and greater influence and control over policies that affect them; IFAD, together with borrowers and partners, establishing and strengthening enabling conditions for effective poverty reduction; IFAD improving its internal operations and processes in the areas of investment and policy interventions, and enhancing its capacity to be a „learning organization "that promotes and encourages innovation (Chaplowe, 2008; IFAD, 2002).

The main beneficiaries or audience that the project seeks to benefit is also another driving factor of Project Monitoring and Evaluation. A case in point is that of the International Fund for Agricultural Development (IFAD) which seeks to benefit people whose incomes are less than one dollar per day, and people who suffer from hunger. Monitoring progress in reaching these goals is therefore the task of the entire United Nations system coordinated by the Department of Economic and Social Affairs of the United Nations Secretariat and the United Nations Development Programme and in close cooperation with the World Bank, the International Monetary Fund and the Organization for Economic Cooperation and Development (IFAD, 2002).

Another factor driving project monitoring and evaluation is the project scope and size. In the construction industry, it is a very important criterion for assessing project monitoring and evaluation. It has the following indicators: efficiency of the project team, supervision of contractor, decision making process, communication and reports, inspection and approval of works, site meeting regularity. The success or failure of these indicators will have a direct impact on the quality of the project and thereby its monitoring and evaluation (Gyadu-Asiedu, 2009).

According to Chaplowe (2008), project duration is a critical influencing factor of project monitoring and evaluation. The extent of participation in and capacity for Monitoring and Evaluation is indirectly affected by the duration of the project.

The overall project budget is another important factor driving project monitoring and evaluation. Some of the costs involved in a project include fluctuation cost, managerial cost, environmental and social cost, incidental cost and legal cost. Fluctuation cost is a very important aspect of the overall cost of the project at any phase. This also provides a clear indication of how the project cost is affected by the "project external environment". The managerial cost, which is the cost of engaging the services of the project manager or consultant and the project team, is essentially a fixed one (a percentage of the contract sum) and may vary with adjustments in these sum due to changes in the certain parameters of the project and its environments including time,

scope and price fluctuations and so on. Environmental and social costs depend partly on the extent to which the project impacts on both the environment and society and how much the client spends on mitigating the effects. This usually forms a small part of the cost of government building projects not only because of their sizes and complexities but also because there are not many enforceable laws in this regard. The position of incidental costs (costs relating to accidents, inclement weather, industrial actions) and legal costs show that they represent the least of the overall cost of projects, most of the time. Incidental costs relating to accidents and injuries are covered by insurance of which premium is paid by the contractor to indemnify the client, except where those incidents are caused by the negligence of the client.(Gyadu-Asiedu, 2009).Tengan et al (2014) identified factors driving the implementation of project monitoring and evaluation practices to include: The overall goal or desired change of effect of the project; the main beneficiaries or audience that the project seeks to benefit; the hypotheses or assumptions that link the project objectives to specific interventions or activities; the project scope and size; the extent of participation in and capacity for M&E; the project duration; and the overall project budget.

PROBLEM STATEMENT

The Nigerian construction industry is faced with numerous challenges that retards the performance of its contribution to the national economy. Among some major contributions are the creation of jobs for the masses and its impact on the Gross Domestic Product (GDP) of the country. These challenges are mostly due to poor or no monitoring and evaluation practices. Despite engaging the services of consultants (project supervisors), the question that remains to be answered is how each performance indicator may contribute to the success or failure of a project and which particular indicator is the most important in ensuring a project is delivered to meet its objectives?. This study therefore addresses this question by establishing the driving factors or indicators to ensure an effective and efficient Project Monitoring and Evaluation practice in the Nigerian construction industry and to also establish their relative importance or rankings.

RESEARCH METHODOLOGY

The study took the form of a survey using questionnaire. The research strategy adopted was qualitative and considered a review of literature to gain insight into the factors that drive implementation of project monitoring and evaluation practices in the Nigerian construction industry.

STUDY AREA

The study was carried out in Lagos metropolis in South West Nigeria. The choice of Lagos as the study area was informed by the concentration of construction projects and construction professionals in this area.

DATA COLLECTION

The approach for collecting data involved both desk survey and field survey. The desk survey (literature review) forms an essential aspect of the research since it sets the pace for the identification of variables and development of questionnaire (Fadhley, 1991). The field survey deals with the administration and retrieval of the survey questionnaires. The like rt response scale was employed to measure the strength or intensity of respondents' opinion.

SAMPLING AND SAMPLE SIZE DETERMINATION

The sampling technique for this study based on its purpose, design, and practical implication of the research topic is purposive sampling. Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Bernard, 2002; Lewis & Sheppard, 2006; Tongco, 2007). More so, snowball sampling was utilized in attaining the sample size because of the difficulties encountered in assessing the population size of the targeted group.

A total of forty (40) questionnaires were administered to monitoring and evaluation practitioners working with contractors and consultants. A hundred per cent response rate was recorded as questionnaires were administered and collected the same day after completion.

DATA ANALYSIS

This research considered it essential to establish from the literature, important factors driving Project Monitoring and Evaluation practices in the Nigerian construction industry. The respondents were asked to rate the level of importance of each factor on project monitoring and evaluation practices from 1 to 5, where '1' represents 'Not important', '2' represents 'Less important', '3' represents 'Neutral', '4' represents 'Important' and '5' represents 'Very important'. In evaluating the result for the factors that drive project monitoring and evaluation practices in the Nigerian construction industry, this study focused on the factors that drive

implementation of project monitoring and evaluation practices in Nigeria in order of importance. Hence, in establishing the relative importance of the variables the one-sample t-test was used.

One-Sample Statistics of factors that Drive implementation of project monitoring and evaluation practices in Nigeria

The one sample t-test normally used to establish whether a sample mean is significantly deviant from a hypothesized mean (Ahadzie, 2007). The hypothesis for a single sample t–test is typically set thus:

H_o: $U=U_o$

H_a: $U<, >U_o$

Where, H_o denotes the null hypothesis, H_a denotes the alternative hypothesis and U_o denotes the hypothesized or population mean. In a typical one-sample-test, the mean of the test group, degree of freedom for the test (which approximates the sample size), the t-value (which is an indication of the strength of the test) and the p-value (i.e. the probability value that the test is significant) are commonly reported (see for instance, Reymont &Joreskog, 1993; Hair et al, 1998; Field, 2005; Ahadzie, 2007).

Successively, a statistical t-test of the mean carried out to determine whether the population considered a specific factor to be important or otherwise. The mean ranking of each factor tabulated to help express the consensus reached by the respondents. Thus, a summary of the test results presented in Tables 1 to 3.

The mean for each factor including the associated standard deviation and standard error are presented in Table 1. For each factor, the null hypothesis was that the factor was not important (H_o: $U= U_o$) and the alternative hypothesis was that the factor was important (H_a: $U>U_o$), where U_o is the population mean. Hence, U_o represent the critical rating above which the driver considered important.

Table 1: One-Sample Statistics of factors that Drive implementation of project monitoring and evaluation practices in Nigeria

	N	Mean Std. Deviation	Std. Error	Mean
The overall goal of the project	*40*	*4.15*	*1.001* *	*.158*
The project beneficiaries	*40*	*4.00*	*.784*	*.124*
The assumptions that link the project objectives to specific activities	*40*	*3.63*	*.774*	*.122*
The size and scope of project	*40*	*4.18*	*.781*	*.123*
The extent of participation in M&E	*40*	*4.03*	*.832*	*.131*
P roject duration	*40*	*4.25*	*.954*	*.151*
P roject budget	*40*	*4.68*	*.764*	*.121*

Note: * *depicts variables with variability*

For this study, the rating scale adopted credited higher ratings of 4 and 5 to be important and very important driver, U_o fixed at an appropriate level of 3.5 (see for instance Ahadzie, 2007).

The significance level was also set at 95% in accordance with orthodox risk levels (Colen, 1992 cited in Ahadzie, 2007). That is, based on the five-point Likert scale rating, a success driver deemed important if it had a mean of 3.5 or more. Where two or more factors have the same mean, the one with the lowest standard deviation assigned the highest important ranking'

The fact that most variables had standard deviations lesser than one suggests that there is no difference to how this variable was interpreted by the respondents. Notwithstanding, it is essential to draw attention to the variable "*The overall goal or desired change of effect of the project"* which had a standard deviation slightly greater than one (1.001) suggesting that there might be differences in the interpretation of the variable . Further discussion on the t-test below provides probable explanation for this. Alternatively, standard deviation values of less than 1.0 indicate consistency in agreement among the respondents of the reported level of results (Steven, 1996; Field, 2005; Ahadzie, 2007). The significance (i.e. p-value) of each factor displayed in Table 2 is for a two-tailed test, however as shown in the test hypothesis, what is of interest here is one-tailed test (i.e. U >Uo). Successively, two have divided the "sig. (1-tailed)" value in Table 4.6 and the summary provided in Table 4.7.

One-Sample Test of factors that Drive implementation of project monitoring and evaluation practices in Nigeria

	Test Value = 3.5					
	t	Df	Sig. (2 tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
The overall goal of the project	*4.106*	*39*	*.000*	*.650*	*.33*	*.97*
The main project beneficiaries	*4.031*	*39*	*.000*	*.500*	*.25*	*.75*
The assumptions that link the project objectives to specific activities	*1.021*	*39*	*.313*	*.125*	*-.12*	*.37*
The project scope and size	*5.468*	*39*	*.000*	*.675*	*.43*	*.92*
The extent of participation in M&E	*3.992*	*39*	*.000*	*.525*	*.26*	*.79*
Project duration	*4.972*	*39*	*.000*	*.750*	*.44*	*1.06*
Project budget	*9.725*	*39*	*.000*	*1.175*	*.93*	*1.42*

Table 2: One-Sample Test of Drivers of Project monitoring and evaluation

The summary shown in Table 2 indicates that "*The project budget" occurred as the highest ranked important factor while The assumptions that link the project objectives to specific interventions or activities* occurred as the lowest. In general, the results largely agree with the conventional wisdom of perceiving activity in the construction industry in terms of cost, time, and quality. However, the quite high values of standard errors reflect a high degree of variability between means of different samples and more likely to have a low level of accuracy (Field, 2005) and is attributed to the small sample size.

Table 3 Summary of t-test showing results of 1-tailed test and ranking

	Mean	Std. Deviation	Ranking	Sig. (1 -tailed)
The overall goal of the project	*4.15*	*1.001**	*4th*	*0.000*
The project beneficiaries	*4.00*	*.784*	*6th*	*0.000*
The assumptions that link the project objectives to specific activities	*3.63*	*.774*	*7th*	*0.157*
The project scope and size	*4.18*	*.781*	*3rd*	*0.000*
The extent of participation in M&E	*4.03*	*.832*	*5th*	*0.000*
Project duration	*4.25*	*.954*	*2nd*	*0.000*
Project budget	*4.68*	*.764*	*1st*	*0.000*

Note: * shows variables with high inconsistency in its agreement

The Project Budget

The use of budget perspectives in intelligence analysis is as old as the endeavor itself. Cost implications of construction activities cannot be underestimated. It is not surprising that this variable occurred as the most important factor that drives project monitoring and evaluation in the Nigerian construction industry. This is probably attributed to the interpretations of the respondents as it recorded the least standard deviation of 0.764. Notwithstanding, this indication shows that in Nigeria, much attention is drawn to the overall budget and the impact of an activity on the budget.

The assumptions that link the project objectives to specific interventions or activities.

Surprisingly, the factor "*the assumptions that link the project objectives to specific interventions or activities"* ranked 7th. Although, this could also be attributed to respondents " interpretations as it records a standard deviation quite close to one; a probable reason is that, in Nigeria and most developing countries, stakeholders seldom consider how project

activities best fit the intended purpose or project objectives despite the increased demands for improved construction practices. Consequently, construction stakeholders are not keen on project monitoring and evaluation to suite its purpose unless is mandatory required of them (i.e. deliberations by concerned citizens or social activists). Else, it appears the practice is for these stakeholders to manage project at their own expense, whereas the public agency's supervisory role have lost its control as there exist huge deficits in communication amongst the stakeholders. Furthermore, Table 2 shows an indication of a weak test of strength as compared to the others.

CONCLUSIONS

The results from the study indicate that in Nigeria, the following factors in order of importance drive and influence the implementation of project monitoring and evaluation practices: the overall project budget; the project duration; the project scope and size; the overall goal or desired change of effect of the project; the extent of participation in; and capacity for Monitoring and Evaluation, the project beneficiaries and the assumptions that link the project objectives to specific activities.

In conclusion, the study shows that there are no differences to how this variable were interpreted by the respondents. The overall goal or desired change of effect of the project" had a standard deviation slightly greater than one (1.001). This suggests that there might be differences in the interpretation of the variable. The study revealed that The overall project budget was the highest ranked important factor while the assumptions that link the project objectives to specific activities occurred as the lowest. The results of the study largely agree with the conventional wisdom of perceiving activity in the construction industry in terms of cost, time, and quality.

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