Assessing Driving Factors to the Implementation of Project Monitoring and Evaluation (Pme) Practices in the Ghanaian Construction Industry

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Abstract-**The anticipated objective(s) of every project is largely motivated by the implementation of profiled activities that will ensure the ultimate success of the project. The construction industry like any other involves a large continuum 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 achieve the objectives of projects, this study seeks to identify drives that motivates PM&E in the Ghanaian construction industry and also the relative importance and ranking of these drivers. Descriptive and one sample t-test statistics was used for the analysis. A total of forty (40) respondents in the Upper east region were sampled using the purposive and snowball sampling techniques. The results from the study indicate that, in Ghana the following drivers are considered in order of importance/ranking by project monitoring and evaluation professionals: the overall project budget, the project duration, the project scope and size. The hypotheses or assumptions that link the project objectives to specific interventions or activities was the least ranked driver by respondents**

Keywords: Drivers, Project, Monitoring, Evaluation, Ghana

INTRODUCTION/BACKGROUND

Globally, the construction industry plays a major role in the development of countries and hence, delays in constructing 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 Ghanaian construction setting, experience extensive delays and thereby exceed initial time and cost estimates as a result of poor management practices (Al-Najjar et al., 2009; Senaratne & Sexton, 2009; Zwikael, 2009). Even though there is no empirical evidence, these unfortunate situation can be attributed to the poor, ineffective and inefficient supervision of the projects (that is project monitoring and evaluation). Monitoring and Evaluation which is a key project management tool refers to the process of collecting, recording and reporting concerns of any or all aspects of the performance of the project, assessing the projects, its programme, design or policy, implementation and results. In addition, it includes also all the organizational arrangements necessary to ensure its 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. It is therefore thoughtful to identify the drivers that influences the implementation of project monitoring and evaluation practices in Ghana and also to establish their relative importance and rankings.

Drivers of Project Monitoring and Evaluation in the Construction Industry

A cursory review of literature revealed time is a driver of project monitoring and evaluation. 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 takes 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 PM&E. In the Ghanaian 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 a key driver of 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 driver of project monitoring and evaluation. A case in point is that of the International Fund for Agricultural Development (IFAD) who seek 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 Co-operation and Development (IFAD, 2002).

The project scope and size is a driver of project monitoring and evaluation. 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 it's 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 a driver of 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 good 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 this 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 these 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 cause by the negligence of the client (clause 15, Articles of Agreement and Condition of Contract for building works, 1988), the other aspect deals with the losses due to time spent in attending to these (Gyadu-Asiedu, 2009).

PROBLEM STATEMENT

The Ghanaian construction industry is faced with numerous challenges that retards the performance of the industry's 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 of the country (GDP). These challenges are mostly due to poor monitoring and evaluation strategies. Despite the engaging the services of consultants (project supervisors), the question that remains to be answered are how each performance indicator may contributed to the success or failure of a project and which particular indicator s are the most important in ensuring a project is delivered to meet its objectives. This study therefore will address this question by establishing the drivers or indicators to ensure an effective and efficient PM&E practice in the Ghanaian construction industry (GCI) 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 considers a review of literature to gain insight into the drivers in the implementation of project monitoring and evaluation (PM&E) practices in the Ghanaian construction industry.

Profile of the Study area

The study was carried out in the Upper East Region of Ghana. This region consist of thirteen (13) Metropolitan/Municipal/District Assembly (MMDA's), however the study considers only the nine (9) pioneering MMDA's which existence until the creation of the four (4) new districts on 28th June 2012. The reason being that, the newly created districts did not have the full complement of the structures that will be needed for this research.

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 likert response scale was employed to measure the strength or intensity of respondent's 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. The study enjoyed a hundred percent responds rate as questionnaires were administered and collected the same day when completed.

Data Analysis

This research considered it essential to establish from the literature, drivers of PM&E practices in the Ghanaian construction industry. Sequentially, 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 drivers of project monitoring and evaluation practices in the Ghanaian construction industry, this research was interested in the drivers normally considered in Ghana in order of importance. Hence, in establishing the relative importance of the variables the one-sample t-test was used.

Table 4.5 One-Sample Statistics of Drivers

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 driver to be important or otherwise. The mean ranking of each driver tabulated to help express the consensus reached by the respondents. Thus, a summary of the test results presented in Tables 4.5 to 4.7.

The mean for each driver including the associated standard deviation and standard error are presented in Table 4.5. For each driver, the null hypothesis was that the driver was not important (H_o: $U= U_o$) and the alternative hypothesis was that the driver 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. For this endeavor, 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 drivers have the same mean, the one with the lowest standard deviation assigned the highest important ranking (see for instance Shen and Liu, 2003; Field, 2005; Ahadzie, 2007).

	N	Mean	Std. Deviation	Std.Error Mean
The overall goal or desired change of effect of the project	*40*	*4.15*	*1.001**	*.158*
The main beneficiaries or audience that the project seeks to benefit	*40*	*4.00*	*.784*	*.124*
The hypotheses or assumptions that link the project objectives to specific interventions or activities	*40*	*3.63*	*.774*	*.122*
The project scope and size	*40*	*4.18*	*.781*	*.123*
The extent of participation in and capacity for M&E	*40*	*4.03*	*.832*	*.131*
The project duration	*40*	*4.25*	*.954*	*.151*
The overall project budget	*40*	*4.68*	*.764*	*.121*

Note: * *depicts variables with variability*

The fact that most variables had standard deviations lesser than one suggests that there is no differences 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 driver displayed in Table 4.6 is for a two-tailed test, however as shown per 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.

Table 4.6 One-Sample Test of Drivers of Project monitoring and evaluation

	Test Value = 3.5					
					95% Confidence Interval of the Difference	
	t	**Df**	**Sig. (2-tailed)**	**Mean Difference**	**Lower**	**Upper**
The overall goal or desired change of effect of the project	*4.106*	*39*	*.000*	*.650*	*.33*	*.97*
The main beneficiaries or audience that the project seeks to benefit	*4.031*	*39*	*.000*	*.500*	*.25*	*.75*
The hypotheses or assumptions that link the project objectives to specific interventions or 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 and capacity for M&E	*3.992*	*39*	*.000*	*.525*	*.26*	*.79*
The project duration	*4.972*	*39*	*.000*	*.750*	*.44*	*1.06*
The overall project budget	*9.725*	*39*	*.000*	*1.175*	*.93*	*1.42*

The summary shown in Table 4.7 indicates that "*The overall project budget"* occurred as the highest ranked important driver whilst "*The hypotheses or 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 reflects 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 4.7 Summary of t-test showing results of 1-tailed test and ranking

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

Note: * *shows variables with high inconsistency in its agreement*

THE OVER ALL 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 no surprising that this variable occurred as the most important drive of project monitoring and evaluation in the Ghanaian construction industry. This probably attributed to the interpretations of the respondents as it recorded the least standard deviation of 0.764. Notwithstanding, this indication shows that in Ghana much attention is drawn to the overall budget and the impact of an activity on the budget thereof.

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

Surprisingly, the driver "*the hypotheses or 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 Ghana 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 these stakeholders. Furthermore, Table 4.6 shows an indication of a weak test of strength as compared to the others.

CONCLUSIONS

The results from the survey indicates that in Ghana the following drivers in order of importance influences 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 M&E, the main beneficiaries or audience that the project seeks to benefit and The hypotheses or assumptions that link the project objectives to specific interventions or activities (refer to Table 4.7).

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