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ASSESSMENT OF THE EFFECTS OF MONITORING AND EVALUATION PRACTICES ON CONSTRUCTION PROJECTS' QUALITY IN OSUN STATE

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ABSTRACT
Monitoring and Evaluation of construction projects is a vital component of project management. The paper examined the effect of monitoring and evaluation practices on construction project delivery (quality) in Osun State. Questionnaires were designed to meet the research objectives and to test its hypotheses and were administered to construction professionals working with the state. The questionnaires were analyzed using descriptive and inferential statistics methods and deductions derived from the analysis. The results showed that there is a fairly strong positive relationship between monitoring and evaluation practices and project quality (R=0.411). The hypotheses were tested and the test revealed that monitoring and evaluation Practices have no significant impact on the project. The study revealed that a unit increase in X1, X2, X3, and X4 causes Y (Project delivery defined by quality, to increase by -0.042, 0.108, -0.007, and 0.009 respectively. The study concluded that M & E practices have no significant impact on construction project quality in the study area. The study recommended that monitoring and evaluation practices should still be incorporated and effectively implemented in the construction process because of other variables of Construction Projects delivery. The study further recommended that construction stakeholders' feedback should be well captured and analyzed for implementation of effective monitoring and evaluation

Keywords: ***Monitoring, Evaluation, Monitoring and Evaluation practices, Construction, Projects***

Introduction
Project abandonment and building collapse have become a major phenomenon in Nigeria and a major cause is a lack of effective monitoring and evaluation practices or a total absence of it. The study is assessing the effect of Monitoring and evaluation practices on Construction projects' quality; which is a sub-variable of Construction projects' delivery. Previous researchers have focused on the main dependent variable of 'Construction projects delivery'.

Monitoring and evaluation (M&E) is described as a process that assists project managers in improving performance and achieving results. According to United Nations Development Programme (2012), the goal of Monitoring and Evaluation is to improve current and future management of outputs, outcomes, and impact. Williams (2000) asserts that monitoring provides management and the main stakeholders of a development intervention with indications of the extent of progress and achievement of expected results and progress with respect to the use of allocated funds. Monitoring provides essential inputs for evaluation and therefore constitutes part of the overall evaluation procedure. Evaluation is an organized and objective assessment of an ongoing or concluded policy, program/project, its design, execution, and results. Ballard (2010), noted that monitoring and evaluation is a process that helps program implementers make informed decisions regarding program operations, service delivery, and program effectiveness, using objective evidence. Monitoring and evaluation (M&E) should be an integral part of any construction project development process, unfortunately in most cases, it is brought into the development planning process as a contingent element. Dialo and Thuillter (2010) pointed out that project monitoring and evaluation are even more critical than planning in the achievement of project success. The

construction industry plays a very significant role in the socio-economic development of any nation. In most countries, construction activity constitutes 6-9% of the gross domestic product (GDP) and more than half of the fixed capital formation as infrastructure and public utilities required for economic development (Chitkara, 2009; Alade, Lawal, Omonori and Olowokere, 2016). In Nigeria, the construction industry is one of the main targets of the government budget, in terms of government development programs. According to the National Bureau of Statistics (2022), Construction contributed 10.16% to nominal GDP in the fourth quarter of 2022, higher than the 9.99%contribution a year earlier, and higher than the 9.50% contributed to the fourth quarter of 2022.

The client's need from the contractor is value for money, the best quality work (product) with minimum or considerable cost at a required duration (timely delivery), which can be seen as the common criteria for a successful construction project. The traditional performance indicators in the construction industry are completion time, cost, and quality control. The perception of failure and success of projects is usually based on personal indices and the experience of the project manager and it is not uncommon that two project managers would assess the performance of the same project but using the same data differently. The disparity of judgment is mainly due to the lack of clear and consistent monitoring and evaluation procedures and methodology. There are many occasions when the project is under budget and progressing as scheduled, yet it is considered a failure by upper management because of low quality and safety performance records. Charles and Humam (2015) opined that in developing countries, a lack of monitoring and evaluation capacity continues to cause non-sustainable outcomes of the projects.

The study aimed to assess the effect of monitoring and evaluation practices on construction projects' quality to enhance the quality performance of construction projects in the study area. The specific objectives of the study were to:

i. assess the roles of monitoring and evaluation practices in construction projects delivery in the study area; and
ii. examine the effect of monitoring and evaluation practices on construction projects' quality in the study area.

Study Hypothesis: H01: planning process, technical expertise, stakeholder involvement, and management participation have no significant impact on construction project delivery (quality).

Literature Review

Construction Projects' Monitoring and Evaluation Practices

Project Management Body of Knowledge (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.

According to Dyason (2010), Monitoring is the collection along with analysis of information regarding a given program or intervention; and evaluation is an assessment whose focus is to answer questions relating to a program or an intervention.

Evaluation is more about the results/outcomes and impact of the project. It is usually a periodic assessment of changes in the predetermined results that relate to the program or the interventions of a project (Goyder, 2009). It helps the project manager to arrive at decisions on the project's destiny and to determine if the project has attained the set goals and objectives.

Monitoring and Evaluation practices ensure that the project/program results at the levels of impact, outcome, output, process along with input can be quantified to offer a framework for accountability and assisting in making informed decisions at program and policy levels. Though monitoring and evaluation practices implementation have substantial cost, time as well as human resource

implications, they are very vital for successful projects and should not be overlooked at the beginning of the process (Khan, 2013).

Those involved in the process understand the importance of evaluation (Chaplowe, & Cousins,2015). The project implementers must recognize the methods and the thinking that is based on monitoring and evaluation techniques used (Ober, 2012). Project monitoring and evaluation should bring a way of considering goals achievement. Shenhar (2011) noted that community engagement and strengthening of local capacities are applied throughout the programme cycle. That meant the community should be involved directly in the identification of their own needs, defining the objectives of the programme, implementing the activities and monitoring and evaluating the programme. Human resources management is very critical in project management. Particularly, they are essential for effective monitoring and evaluation.

The technical capacity and organizational know-how in carrying out evaluations, the value and participation of its human resources in the process of decision-making as well as their motivation in executing the decision arrived at can significantly affect the evaluation (Vanessa, 2016). Estimation of Financial resources done during planning for implementation of monitoring and evaluation (Dyason, 2010). The key aspect of planning for monitoring and evaluation is to approximate the costs, staffing, and other resources that are required for monitoring and evaluation work. Monitoring and evaluation specialists need to weigh in on monitoring and evaluation budget needs during the project design phase so that funds are distributed to the implementation of key monitoring and evaluation tasks (Ahsan and Gunawan, 2010).

Project success (delivery) is measured by product and project quality, timeliness, budget compliance, and degree of customer satisfaction. Ling, Low, Wang, and Lim (2009) as cited by Charles and Humam (2015) also assessed Scope management, Time management, Cost management, Quality management, Risk management, Human resource management, Procurement management, and Integration management concerning project success where he established that there were significant associations.

Construction Projects delivery is a process of using specific project management techniques to oversee the planning, design, and of course, the construction of a project from start to finish to hand over the construction project to time, cost, quality, and user satisfaction. Monitoring and evaluation are regarded as core tools when it comes to enhancing project management quality, considering that in the short run and the medium term, the management of complex projects will entail corresponding strategies from the financial viewpoint, that are required to adhere to the criteria of effectiveness, sustainability along with durability. The activity of monitoring supports both the project managers and staff in understanding whether the projects are progressing as predetermined (Houston, 2008). Therefore, monitoring offers the background for minimizing time along with cost overruns, while at the same time ensuring that the required standards of quality are attained in the implementation of the project. On the same note, evaluation is a tool for assisting project planners and developers in assessing the extent to which the projects have attained the objectives that are outlined in the documents related to the project (Crawford and Bryce, 2013).

In a construction project, quality management has been widely used by world-class companies to ensure successful project delivery (Aichouni et al., 2014). The interactions and interrelationships between key participants (e.g. the client, the architect, and the contractor) largely determine the overall performance of the construction project. Rwelamila and Wisemant (1995), Arditi and Gunaydin (1997). Turk (2006) and Saeed and Hasan (2012) pointed out that quality in the construction industry can be defined as meeting the requirements of the designer, constructor, and regulatory agencies as well as the owner. According to Luai, Lana, and Christine H, (2016),

Construction specific factors of standards, drawings, and specifications must be established before detailing in the form of a contract and before performing the tasks.

A study that was conducted by Singh, Chandurkar, &Dutt, (2017) highlighted that monitoring and evaluation was the major driving factor in development projects. The objective of this study was to determine the effect of monitoring and evaluation on development projects. However, the recommendation that was given in this study was that the management should provide full support and should fully engage themselves in the monitoring and evaluation process as this will help them in coming up with sound and well-informed decisions.
Mackay & World Bank. (2007) conducted a study in Washington, which indicated that planning for monitoring and evaluation was critical in enhancing better project performance on government projects.

Barasa (2014) conducted a study on '*Strategic Plan, Logical Framework, Budget, Stakeholder's Analysis & Construction Project Delivery in Kenya*' using Survey, Correlation, and Multivariate Regression Analysis. The findings showed that Monitoring & Evaluation tools influence project delivery. Stakeholder analysis had the most significant influence on project delivery followed by Strategic Plan, Budget, and Logical framework. The results showed a significant correlation between monitoring and evaluation tools and project completion.

The study carried out by Sialala (2016) revealed that quality Integration of M&E leads to good results and provided a way to assess the crucial link between implementers and beneficiaries.
Other studies had recognized four skills for effective project managers, they include mental, human, stakeholder, and technical skills, along with their 16 other skill competencies. The study was to determine whether project technical skills influence project performance. Data were collected from 107 project team members using a questionnaire assessment method. The study results showed that project team leads technical skills impact project performance. Project excellent performance is impacted by several skill components, which include visioning, sensitivity intelligence, interactive skill, dynamic leadership, interpersonal influence, integrity, quality management, and document and agreement administration. Project Managers may use the outcome as a parameter to assign project managers with the 'right' skill profile or to concentrate their human resource development on skills that are significant for project success. A study done by Vittal (2008) indicates technology awareness is important in project monitoring and controlling due to greater challenges in today's technology-enabled project, this is especially where technological tools are used in project management practices,

This study helped to analyze fundamental connections between technical expertise and project performance. Subsequently, understand the indulgent function of expertise to the project team in cultivating enhanced project performance. The findings of this study were that project teams are equipped with the right technical skills linked to project performance. The study demonstrated that it is difficult to disassociate the use of technology with project performance and the absence of such relation-induced project performance, being a technical expert in monitoring and evaluating a project can play a main role in supporting the project team in handling projects effectively and efficiently.

Methodology
The target population is Architects, Quantity Surveyors, Builders, and Engineers in the State Ministry of Works and contracting firms. The research design used for this study is a survey design. The instrument of data collection for the study was the questionnaire which was structured in such a manner that allowed the respondents to easily fill in their responses without difficulties as well as a personal oral interview. The study was carried out in Osun State in which the projects in the State to

which monitoring and evaluation practices were applied comprised construction of new roads, rehabilitation of existing roads, construction of various new public buildings as well as renovation of some existing ones. The population of this study is made up of 106 construction professionals engaged in the service of the State and 555 construction professionals in construction companies and organizations, making a total of 661.

The procedure that was adopted for selecting respondents for this research was purposive sampling. The sample size for this study was determined using Yamane's (1967) formula.

$n = N/1 + N (e)^2$ n = the sample size; N = size of the population, e = level of precision (or limit of tolerable error) i.e. 0.05 or 95% confidence level. With a population of 661 respondents: n = 661, 1 + 661 $(0.05)^2$= 661 / 2.6525= 249.20= 250 respondents

To assign the sample size of 250 to the two categories of respondents, Bourley's proportional allocation formula was used nb = n(*n*)/N

Where: nb = Bourley's Proportional Allocation Formula, *n*=Population allocated to respondent groups, n = Total sample size, N =Population of the study 40 respondents was selected for construction professionals in the ministry of works while 210 respondents was selected from the contracting firms and organizations. Regression analysis which is a statistical model was used in this study to establish the relationship between Monitoring and Evaluation practices and project time.

The study used the following regression model:
$Y = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4 + e$,
Where: Y = Project Cost α =Constant term,β=Beta
Coefficients, X1=Planning process, X2=Management participationX3=Technical expertise
X4=stakeholders' involvement e = Error term.

Results and Discussion
234 of the 250 distributed questionnaires were returned representing 93.6% of the total questionnaires distributed.

Demographic Characteristics of Respondents

Demographic features	Categories	Frequency	Percentage
Profession	Architects	18	7.7
	Quantity Surveyors	50	21.4
	Civil/Structural Engineers	56	23.9
	Builders	36	15.4
	Electrical/Mech. Engineers	42	17.9
	Others	32	13.7
	Total	234	100
Years of experience	< 5years	28	12.0
	5-10years	84	35.9
	11-15years	64	27.4
	16-20years	14	6.0
	Over 20 years	44	18.8
	Total	234	100

Source: Researcher's Field Survey, 2022
The table also shows that 23.9% of the respondents were Civil/Structural Engineers, 21.4% were Quantity Surveyors, 15.4% were Builders, and 17.9% were Electrical/Mechanical Engineers while

7.7% of the respondents were Architects. This shows a balanced distribution of Professionals in the construction industry. 35.9% of the respondents had spent between 5 to 10 years in the construction industry, 27.4% had spent between 11 to 15 years, and 18.8% had spent well over 20 years while only 12% had spent less than 5 years in the construction industry. This shows that the respondents had requisite experience in the construction industry.

Descriptive Statistics

	Mean	Std. Deviation	N
Project Time	.8649	.34658	37
Planning Process	5.2432	.43496	37
Management Participation	7.5405	.50523	37
Technical Expertise	7.5946	.49774	37
Stakeholders Involvement	4.7568	.64141	37

The table presents the descriptive statistics results. Mean is the average value of the series which is obtained by dividing the total value of the series by the number of observations. The above table showed that the mean score for the independent variables: Planning Process, Management Participation, Technical Expertise, and Stakeholders' Involvement are 5.2432, 7.5405, 7.5946, and 4.7568 respectively.
Standard deviation is a measure of spread or dispersion in the series. From the table, the standard deviation for the planning process, management participation, technical expertise, and stakeholders' involvement are 0.435, 0.505, 0.498, and 0.641 respectively.

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.274[a]	.075	-.041	.23387

a. Predictors: (Constant), Stakeholders' Involvement, Management Participation, Technical Expertise, Planning Process
b. Dependent Variable: project quality

Table 15 shows that there is a weak positive relationship between monitoring and evaluation practices and project quality with an R-value of 0.274

The table further shows M &E Practices accounted for 7.5% of the variation in the dependent variable: Project quality (R^2=0.075). Other factors that may affect the dependent variable are outside the scope of this research work.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.142	4	.035	.648	.633[a]
	Residual	1.750	32	.055		
	Total	1.892	36			

a. Predict *ors: (Constant), Stakeholders' Involvement, Management Participation, Technical Expertise, Planning Process

b. Dependent Variable: project_quality

From the ANOVA table, P (sig.)-value = 0.633 which is greater than 0.05,
Decision: Accept Ho

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.356	1.205		.296	.769
	Planning Process	-.042	.106	-.079	-.395	.696
	Management Participation	.108	.080	.238	1.359	.184
	Technical Expertise	-.007	.084	-.014	-.079	.937
	Stakeholders Involvement	.009	.070	.025	.128	.899

a. Dependent Variable: project_quality

From the table of coefficients above, the Regression model for project quality is
$Y = 0.356 - 0.042X_1 + 0.108X_2 - 0.007X_3 + 0.009X_4$
The regression model shows that a unit increase in X_1, X_2, X_3, and X_4 causes Y (Project delivery defined by project quality) to increase by -0.042, 0.108, -0.007, and 0.009 respectively.

Hypotheses

H_0: planning process, technical expertise, stakeholder involvement, and management participation have no significant impact on construction project quality.
Level of significance (α) = 5% (i. e. 0.05), since P-value = 0.633
Accept Ho, therefore, M & E Practices (planning process, technical expertise, stakeholder involvement, and management participation) have no significant impact on construction project quality.
The result is a deviation from the discoveries of previous researchers and this might be a result of the study area as well as other variables that are beyond this study. Also, this might be because project quality is a sub-variable of the main variable: project delivery or success.

Conclusion and Recommendation

The study examined the effect of monitoring and evaluation practices on construction project delivery (quality) in Osun state. The study revealed that M&E practices ensure the successful and timely delivery of construction projects and enhance compliance/ adherence to specifications.

Furthermore, the study revealed that the effect of monitoring and evaluation practices (Planning process, management participation, technical expertise, and stakeholders' involvement) is high on construction project delivery defined by quality.

The study also revealed that there is a fairly strong positive relationship between monitoring and evaluation practices and project quality (R=0.411).

The test of hypothesis also revealed that monitoring and evaluation Practices (planning process, technical expertise, stakeholder involvement, and management participation) have no significant impact on project quality.

Given the findings and conclusion of the research, the following are suggested recommendations deduced from the study:

i. Monitoring and Evaluation practices should still be incorporated and effectively implemented in the construction process because of other variables of Construction Projects delivery.

ii. Construction stakeholders' feedback should be well captured and analyzed for the implementation of effective monitoring and evaluation.

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