

# Monitoring and Evaluation Capacity Building on Performance of Road Construction Projects in Kisumu Central Sub-County, Kisumu County, Kenya

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**Abstract:** Infrastructural development through construction of roads is a fundamental aspect in development of every economy, contributing 19.1% of GDP in Kenya. However, these projects have experienced time and cost overruns and compromised quality due to the poor exercise of monitoring and evaluation capacity building. The purpose of the study is to establish the influence of M&E Capacity Building on performance of road construction projects in Kisumu central, Kisumu County, Kenya. The study adopted descriptive cross-sectional survey design and Structured questionnaires used to collect quantitative data from a sample size of 65 respondents out of a target population of 65 subjects. Validity test was done on the instruments and a value of 0.78 obtained using Content Validity Index while reliability involved pretesting of the instruments amongst the 10% of the respondents and Cronbach's alpha coefficient worked out for adjustments and a value of 0.79 obtained. Analysis was done through both descriptive techniques of mean and standard deviation and inferential techniques of Correlation and Regression at a significance level of 0.05 with the aid of SPSS version 25. The hypothesis was tested at  $\alpha=0.05$  level of significance and the result was:  $H_0$ : M&E Capacity Building does not significantly influence performance of road construction projects in Kisumu central, Kisumu County, Kenya was rejected since  $P=0.004<0.05$ . Therefore the study concluded that there is significant influence of all M&E Capacity Building on performance of road construction projects in Kisumu central, Kisumu County, Kenya. It is recommended that Project management and policy makers should integrate M&E Capacity to enhance performance of road construction projects and to suggest appropriate policies for strengthening M&E Capacity Building to boost effective implementation and performance of road construction projects. Further research should be carried out on other case studies other than road construction projects.

**Keywords:** M&E Budgetary Allocation, performance of road construction projects

## I. INTRODUCTION

Infrastructural development through construction of new roads and maintenance of existing ones is a fundamental aspect in development of every economy as it's the most widely used means of transport globally (Gitahi and Omutoko, 2015). In developed economies, most road construction projects are well implemented due to top management support, availability of funds and effective communication

and coordination of activities and contributes approximately 10% of the gross national product (GNP) (Samson and Lema, 2011). However, in Africa, evidence from KPMG report (2014) indicated that about 68% of the road projects in Africa constructed by local firms experienced cost and time overruns besides not meeting the expected quality standards due to weaknesses in monitoring and evaluation construction contracts (Skeggs, 2011; Ugwa & Heupt, 2013). Similarly, in Kenya, most road construction projects are completed with cost and time overruns, poor quality and out of scope and this has been blamed for the persistent traffic jams costing the economy about 0.9% of the GNP annually (Akali and Sakaja, 2018) which calls for more focus on capacity building in monitoring and evaluation (Mandala and Mulwa, 2018; Ogutu and Muturi, 2017). For instance, the construction of Thika Super Highway increased in cost to 34.45 billion from 26.44 billion with a time overrun of 2 years (KeNHA, 2015; Roads and Civil Engineering Contractors Association, 2013); the dulling of Nyamasaria-Kisian Road in Kisumu in 2016 showed bitumen bleeding defects soon after surface dressing while the expansion of Kisumu International Airport Road works in 2015 had a time overrun of 10 months resulting into cost overruns (Ogutu and Muturi, 2017).

Without effective monitoring and evaluation, it would be impossible to judge if work is going in the right direction, whether progress and success can be claimed, and how future efforts might be improved (UNDP, 2009). In Kenya the creation of the 47 counties to be responsible for their own development projects has also increased the need for project monitoring processes in project management services at the county level (Centre for Learning on Evaluation and Results (CLEAR), 2013). Understanding the skills needed and the capacity of people involved in the M&E system and addressing capacity gaps through structured capacity development programs is at the heart of the M&E system (Ooko, Rambo, and Osogo, 2018; Gorgens and Kusek, 2013). The lack of capacity in low-income countries is one of the main constraints to achieving the Millennium Development Goals (Ooko, Rambo, and Osogo, 2018). KPMG-PMI report (2014) revealed that lack of trained human capital and inadequate technical skills contributes to road project delays

which ultimately affect implementation of projects. However, it is not enough to simply create a highly-trained evaluation capacity and expect organizations to become more effective but ensure that trained staff and stakeholders understand their M&E roles, participate in M&E planning and development of related systems and tools (Ubels et al., 2010). M&E capacity of employees should continuously be developed through training and other capacity building initiatives to ensure that they keep up with current and emerging trends in the field (Odhiambo, 2013; UNDP, 2009). As such Kisumu County and all other county governments have the responsibility to deliver reliable infrastructure to assist in the transportation of goods and passengers to markets.

The study sought to establish the influence of Monitoring and Evaluation practices on performance of road construction projects in Kisumu Central Sub-county, Kisumu County, Kenya. The study aimed to contribute valuable knowledge on identifying and entrenching appropriate M&E practices to help improve performance of road construction projects by ensuring that adequate budgetary allocation, capacity building, better communication strategy and stakeholder engagement are provided and to suggest appropriate policies for strengthening implementation of M&E to ensure quality, on time and within cost delivery of road construction projects. The study also provides a reference and vital information databank on contractor's capacity for M&E for optimal performance of road construction projects for other researchers, policy developers and development agencies. If M&E practices are not properly managed, then the delivery of bankable infrastructure projects will remain a pipe dream as risks like cost-overrun, time – overrun, substandard quality products, incomplete projects, lost revenue and damage claims may overshadow the project. This study thus helps in formulation of appropriate policies on streamlining modern M&E practices for delivery of successful projects.

## II. LITERATURE REVIEW

### 2.1 Capacity Building and Performance of Road Construction Projects

Dedicated skilled human resource is critical for effective monitoring and evaluation, even after securing adequate financial resources (Surran, Tunal and Kath, 2003). Human capital, with notable experience, clear job description with matching skills and continuous capacity building is vital for the achievement of reliable M&E results (Kihuha and Ngugi, 2012). Capacity building involves the design and implementation of teaching and learning strategies to help individuals, groups, and organizations, learn about what constitutes effective, useful, and professional M&E practice (Surran, Tunal and Kath, 2003). The main goal of capacity building has been cited as to strengthen organization's capacity to; Design, implement and manage effective evaluations; access, build, and use evaluative knowledge and skills; cultivate a spirit of continuous organizational learning; for improvement and accountability, and lastly to create

awareness and support for program evaluation and self-evaluation as a performance improvement strategy (Adams & Dickinson, 2010). Inadequacy in training and M&E expertise such as design skills particularly Log Frame design, indicator setting, design of data collection instruments, data collection skills in government infrastructural projects can lead to low quality projects (Wanjiku, 2015). Understanding the skills needed and the capacity of people involved in the M&E system and addressing capacity gaps through structured capacity development programs is at the heart of the M&E system (Ooko, Rambo, and Osogo, 2018; Gorgens and Kusek, 2013).

In the health sector, Ooko, Rambo and Osogo (2018) sought to establish the influence of Monitoring & Evaluation human capacity on the provision of health care services in Public Health Institutions in Migori County, Kenya by adopting descriptive survey design and data collected using questionnaire and interview guide from a sample size of 285 respondents out of a target population of 997 while analysis involved descriptive and inferential statistics of correlation and regression. The study found established that human resource capacity and capacity building on Monitoring & Evaluation increases access on provision of health services.

Similarly, Njeri and Omwenga (2019) sought to investigate the influence of human resource capacity for M&E on sustainable projects – A case study of the national aids control council, Kenya through adoption of descriptive study design to collect data from a census of 90 respondents sampled using structured questionnaires while analysis involved descriptive and inferential statistics of regression. The results indicated a strong correlation between human resource capacity for M&E and project sustainability. However, organizations have yet to develop adequate human resource capacity in M&E. Organizations need to enhance their human capacity for M&E by improving their recruitment policies by benchmarking on industrial leaders besides establishing critical linkages with other organizations.

In the corporate world, Lekamparish and Ndiritu (2017) sought to determine influence of monitoring and evaluation on project performance in State Corporation in Kenya focusing on Mombasa- Nairobi Pipeline construction project through descriptive survey design and data collected using questionnaire from a sample size of 124 respondents out of a target population of 179 staff while analysis involved descriptive and inferential statistics of correlation and regression. Findings showed that monitoring and evaluation training, communication and resource allocation had a significant positive relationship with performance of projects. Organizations should support adequate training of field staff involved in monitoring and evaluation through offer of requisite skills and knowledge on M&E for project performance. The training of the project team personnel for different activities such as data collection, data analysis, report writing, dissemination of M & E funding and logical framework approach is paramount in any organization.

Despite the comprehensiveness of the studies in linking M&E human resource capacity building and performance of projects, none touched on road construction project an issue that the current study portends to address.

### III. METHODOLOGY

The study used descriptive survey design. The study used a census sample size of 65 respondents who were employees in the roads department to provide insight of M&E Capacity Building and performance of road construction projects in Kisumu Central sub-county, Kisumu County, Kenya from where the project has been implemented and operational. The employees in the roads department had been purposively selected due to their key role in project implementation. Structured Questionnaire was used for data collection. The items were presented as closed-ended five point Likert scale type and allow the respondents to express an opinion on every item as best represented by one of the five options presented as Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4) and Strongly Agree (5). A Likert scale due to equal distances between each value is qualified to be interval scale as was the case of the study. The questionnaire was pre-tested in 10% unselected respondents drawn from the project before commencement of actual data collection and a validity coefficient of 0.80 and reliability coefficient of 0.79 obtained. Descriptive statistics of mean and standard deviation and inferential statistics of correlation and regression at a significance level of 0.05 was done.

A simple regression model took the form:

$$Y = \beta_0 + \beta_1 X_1 + \alpha$$

Where; Y: dependent variable (performance of road construction projects),

$\beta_0$ : regression coefficient/constant/Y-intercept,

$\beta_1$ : slopes of the regression equation/Beta Coefficients,

$X_1$ : predictor variables

$\alpha$ : an error term normally distributed about a mean of 0 and for purpose of computation, the  $\alpha$  is assumed to be 0. It captures the effect of all omitted variables or random variation in the dependent variable.

1.  $H_0$ : M&E Capacity Building has no significant influence on performance of road construction projects in Kisumu Central sub-county, Kisumu County, Kenya

Performance = f(M&E Capacity Building, random variable)

### IV. FINDINGS AND DISCUSSION

All the sampled 65 participants returned dully filled and complete questionnaires representing a return rate of 100%. The study assessed the influence of Budgetary Allocation for M&E on Performance of Road Construction Projects in Kisumu County. Budgetary Allocation for M&E for Performance of Road Construction Projects was measured

using three indicators of quantity of money allocated, budgetary bureaucracy and budgetary unit. The indicators were developed into four Likert items measured on a 5-point Likert scale as 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A) and 5 = Strongly Agree (SA). The participants provided their opinion based on their level of agreement with each item. The results were analyzed and presented using frequencies, percentages, mean and standard deviation as shown in Table 4.1.

Table 4.1: M&E Capacity Building

M&E Capacity Building	SD	D	N	A	SA	Me an	STD ev
There is adequate training of M&E officers on understanding M&E roles	0 (0.0%)	5 (7.8%)	6 (9.9%)	32 (48.9%)	22 (33.3%)	4.08	0.862
There is adequacy of training on emerging M&E trends	2 (2.8%)	4 (5.7%)	10 (14.9%)	27 (41.1%)	23 (35.5%)	4.01	0.996
There is adequate training on developing M&E tools and systems	0 (0.0%)	4 (6.4%)	14 (21.3%)	32 (48.9%)	15 (23.4%)	3.89	0.834
There is adequate training on M&E Reporting	0 (0.0%)	6 (8.5%)	17 (25.5%)	29 (44.0%)	14 (22.0%)	3.79	0.883
Composite Mean and Standard Deviation						3.928	0.896

The results in Table 4.9 show that the study participants agree that there was adequate training of M&E officers on understanding M&E roles (Mean = 4.08). This view was put forward by majority of the participants 32(48.9%) who agreed with the statement that there was adequate training of M&E officers on understanding M&E roles while another 22(33.3%) of the participants strongly agreed. Only 5(7.8%) of the participants disagreed with the statement while 6(9.9%) were neutral. Thus, a majority of the participants 82.2% cumulatively agreed that there was adequate training of M&E officers on understanding M&E roles while only 7.8% disagreed. This shows that Capacity building for M&E is an important aspect in Performance of Road Construction Projects. The findings concur with Laurian and Shaw (2008) that training on M&E increases the human resource capacity by providing stakeholders with the ability to assess their contribution in project execution, clarifying objectives and strategies leading to implementation success.

Similarly, There is adequacy of training on emerging M&E trends (Mean=4.01) was also found to strongly influence Performance of Road Construction Projects. Specifically, majority of the participants 27(41.1%) agreed with the

statement that there is adequacy of training on emerging M&E trends while another 23(35.5%) strongly agreed. This was in contrast to 4(5.7%) who disagreed and another 2/8(2.8%) who strongly disagreed that there is adequacy of training on emerging M&E trends. Cumulatively, 76.6% of the participants agreed that there is adequacy of training on emerging M&E trends with only 8.5% disagreeing giving an overall level of agreement.

Similar findings were arrived at on whether there is adequate training on developing M&E tools and systems (Mean = 3.89). Specifically, majority of the participants 32(48.9%) agreed that there is adequate training on developing M&E tools and systems and another 15(23.4%) strongly agreed, thus, the majority of the participants (72.3%) cumulatively agreed that there is adequate training on developing M&E tools and systems. However, 14(21.3%) were neutral in their views concerning the statement while 4(6.4%) disagreed that there is adequate training on developing M&E tools and systems. This shows that there is adequate training on developing M&E tools and systems influences the Performance of Road Construction Projects.

Similar findings were arrived at on whether there is adequate training on M&E Reporting (Mean = 3.79). Specifically, majority of the participants 29(44.0%) agreed that there is adequate training on M&E Reporting and another 14(22.0%) strongly agreed, thus, the majority of the participants (66%) cumulatively agreed that there is adequate training on M&E Reporting. However, 17(25.5%) were neutral in their views concerning the statement while 6(8.5%) disagreed that there is adequate training on M&E Reporting. This shows that there is adequate training on M&E Reporting which influence the Performance of Road Construction Projects. Similarly, Ramazani & Jergeas (2015) concluded that training helps in developing critical thinking, interpersonal skills, and leadership and orientates the stakeholders toward project goals and objectives.

The composite mean regarding Capacity building for M&E for Performance of Road Construction Projects was 3.928 (STDEV = 0.896). This was approximately equal to 4 which correspond to agree on the measurement scale. This shows that Capacity building for M&E in the project generally influences Performance of Road Construction Projects.

In support of the findings Kihuha and Ngugi (2012) posit that continuous capacity building is vital for the achievement of reliable M&E results. Capacity building strengthen organization's capacity, designing, implementing and managing effective evaluations, accessing, building, and using evaluative knowledge and skills; cultivating a spirit of continuous organizational learning; for improvement and accountability, and lastly creating awareness and support for program evaluation and self-evaluation as a performance improvement strategy (Ooko, Rambo, and Osogo, 2018). Understanding the skills needed and the capacity of people involved in the M&E system and addressing capacity gaps

through structured capacity development programs is at the heart of the M&E system.

#### 4.2 Relationship between M&E Capacity Building and Performance of Road Construction Projects

The researcher sought to establish the existence and nature of relationship between M&E Capacity Building and Performance of Road Construction Projects. Pearson Correlation analysis was conducted between measure of M&E Capacity Building and Performance of Road Construction Projects. An equidistant Likert scale was used to collect interval data with Strongly disagree=1(1<SD>0.8); Agree=2(1.8<A>2.6); Neutral=3(2.6<N>3.4); Agree=4(3.4<A>4.2) and Strongly Agree=5(4.2<SA>5) to provide continuous data necessary for Pearson Correlation. As such, the minimum score on the M&E Capacity Building with four items was = 4 while the maximum score = 20. Similarly, for Performance of Road Construction Projects scale, the minimum score = 4 while the maximum score = 20 for the four (4) items. Pearson correlation output for the analysis is presented in Table 4.2.

Table 4.2: Relationship between M&E Capacity Building and Performance of Road Construction Projects

		M&E Capacity Building	Performance of Road Construction Projects
M&E Capacity Building	Pearson Correlation	1	.157
	Sig. (2-tailed)		.004
	N	65	65
Performance of Road Construction Projects	Pearson Correlation	.157	1
	Sig. (2-tailed)	.004	
	N	65	65

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation results in Table 4.2 show that there is a weak positive correlation ( $R = 0.157$ ) between M&E Capacity Building and Performance of Road Construction Projects which is statistically significant ( $p=0.004<0.05$ ). This is shows that M&E Capacity Building and Performance of Road Construction Projects are statistically moderately and positively correlated such that as M&E Capacity Building increases, Performance of Road Construction Projects also marginally improves. This finding was supported by Ooko, Rambo and Osogo (2018) argument that there is a significant positive influence of capacity building on performance of road construction projects.

#### 4.3 Influence of M&E Capacity Building on Performance of Road Construction Projects

Having established the existence and nature of relationship between M&E Capacity Building and Performance of Road Construction Projects, the researcher sought to determine the linear effect of M&E Capacity Building on Performance of Road Construction Projects. This was achieved through

regression with M&E Capacity Building as the predictor variable and Performance of Road Construction Projects as the outcome variable. As with correlation, the measure of the variables was obtained as summated scores on the measuring scales to obtain continuous data with M&E Capacity Building having a minimum score = 4 and maximum score 20 while Performance of Road Construction Projects had a minimum score = 4 and maximum score = 20. The regression output is presented in Table 4.3.

Table 4.3: Influence of M&E Capacity Building on Performance of Road Construction Projects

Model	R	R Square	Adjusted R Square		Std. Error of the Estimate	
Summary	.157 <sup>a</sup>	.025	.018		4.699	
ANOVA		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	77.254	1	77.254	3.499	.004 <sup>b</sup>
	Residual	3069.214	63	22.081		
	Total	3146.468	64			
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	10.973	2.413		4.547	.000
	M&E Capacity Building	.227	.121	.157	1.870	.004

a. Dependent Variable: Performance of Road Construction Projects

b. Predictors: (Constant), M&E Capacity Building

From the output in Table 4.3, the model summary gives a R<sup>2</sup> value = 0.025 with p = 0.004 > 0.05. This shows that M&E Capacity Building accounts for 2.5% of Performance of Road Construction Projects. Moreover, the model was found to be a good fit for the data and variables with F (1, 64) = 3.499 (p = 0.004 < 0.05). The coefficient of the constant term (β = 10.973, p = 0.000 < 0.05) and the coefficient of M&E Capacity Building (β = 0.227, p = 0.004) were found to be statistically significant. Thus M&E Capacity Building improves Performance of Road Construction Projects by 0.227 for every unit change in M&E Capacity Building. Linearly, the variables can be modeled using the equation:

$$Y = \beta_0 + \beta_2 X_2 + \epsilon$$

Where; B<sub>0</sub> is coefficient of the constant term, B<sub>2</sub> is coefficient of the predictor (M&E Capacity Building), X<sub>2</sub> is the predictor (M&E Capacity Building) and ε is the error term.

Thus replacing the coefficients the equation becomes:

$$Y = 10.973 + 0.227X_2$$

#### 4.4 Test for Hypothesis

Hypothesis two was stated in the null and tested as:

H<sub>02</sub>: There is no significant influence between M&E Capacity Building and Performance of Road Construction Projects.

The null hypothesis was tested at 95% confidence level as 2. H<sub>0</sub>: β<sub>0</sub> = β<sub>2</sub> = 0 (p = 0.05). The null hypothesis was to be accepted when p > 0.05 (There is no significant difference) and rejected when p ≤ 0.05 (There is significant difference) between the coefficient of the constant term and the coefficient of the predictor.

Since the results showed that β<sub>0</sub> ≠ β<sub>2</sub> ≠ 0 (p < 0.05), we reject the null hypothesis and accept the alternative. Thus, there is a significant influence between M&E Capacity Building and Performance of Road Construction

### V. CONCLUSIONS

Based on the findings, the study concludes that M&E personnel in road construction projects are discharging their roles effectively and Monitoring and Evaluation officers recruited are competent on road construction projects. There is adequate training of M&E officers on understanding M&E roles and emerging M&E trends. However, in moderate terms there is adequate training on developing M&E tools and systems and M&E Reporting. In general M&E Capacity Building had a weak positive influence on Performance of Road Construction Projects. The study recommends that financing and government agencies should adequately conduct Capacity Building for enhanced Performance of Road Construction Projects. The researcher recommends that scholars should conduct research using other M&E Practices such as budgetary allocation, planning and communication strategy not covered in the study to assess their influence on Performance of Road Construction Projects.

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