

# **An Investigation of Structural Capacity as a Component of Monitoring and Evaluation in Project Success of Road Construction Projects in Kenya**

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## **Abstract**

The transport sector in Kenya contributes about 6% of the gross domestic product and is critical in providing the necessary linkages for promoting national and regional interconnectivity as well as trade. Developments in the road construction industry in Kenya are increasing in size, technology complexity, interdependencies, and variations in demands from clients. Enormous donor and government resources are provided to various road contractors for the construction of road projects in Kenya.

Monitoring and evaluation of road projects implementation is paramount in determining the success of road construction projects. It is hypothesized that poor and inefficient monitoring and evaluation of road construction projects could be one of the causes of endemic project delays and poor workmanships on completed road projects. It was therefore imperative to examine the monitoring and evaluation systems used in road construction projects in Kenya, and assess their effectiveness, with a particular emphasis on the components of monitoring and evaluation system. The objective of this study was therefore to assess the influence of monitoring and evaluation system on project success. The target population of this study was the road contractors and regulatory bodies involved in ongoing road construction projects in Nairobi city and its environs. A descriptive study design was used to collect quantitative and qualitative data. Primary data was collected by use of structured questionnaires. The questionnaire was designed to respond to research question. Secondary data was collected through review of published literature such as journal articles, published theses and textbooks. The data collected from the field was captured using Statistical Package for Social Sciences (SPSS) and Microsoft excel. Descriptive statistics including frequency, percentages and means were employed and a summary graphs, pie charts and frequency distribution tables given. Content analysis was used to analyze qualitative data to help triangulate quantitative data.

Correlation of the main variables that is project mission, structural capacity, processes and outcome mapping which are also components of monitoring and evaluation was calculated using SPSS to find out how individually they influenced project quality. It was found out that all the components correlate positively. The study also found these findings are consistent with earlier research findings by Mackay (2007) that a problem in African countries is lack of adequate data for M&E.

**Key words:**

Monitoring and Evaluation, Structural capacity, Project success, Quality

**Introduction**

Over the last few years, the Kenyan economy has been in a phase of unparalleled growth and recession, posting a growth of about 4.4% in the year 2011 down from a growth of 5.8% in 2010, partly due to the effects of the global recession of the year 2008. To ensure economic growth, the country will need huge investments in physical infrastructure such as roads and other transport networks. The *transport sector in Kenya* contributes about 6% of the gross domestic product and is critical in providing the necessary linkages for promoting national and regional interconnectivity as well as trade. The Kenya road sub-sector has been largely dominated by road expansion and upgrading programmes since the year 2009, when the Kenya Vision 2030 was launched. Growth rates in the entire transport and communication sector increased at an annualized rate of 4.0 % in 2009 to 6.9% in 2010. The remarkable growth recorded during this period was attributed to low inflationary pressure, low interest rates, stable macroeconomic environment and higher investments in infrastructure development. However, the building and construction sector recorded a slightly slower growth of 4.5% in 2010 compared to a growth of 12.4% in 2009. There was improved activity and investment in road construction as evidenced by increased government spending and donor support. There is need to determine whether the resources provided by donors and the government of Kenya towards road construction activities are utilized efficiently and effectively, whether road construction projects are within schedule and to determine problems that may be hampering the timely delivery of road projects. The determination of efficient management of resources is a key factor in project monitoring. Monitoring provides the basis for minimizing or preventing schedule and cost overruns while ensuring that required quality standards are achieved in project implementation.

**Problem Statement**

Enormous donor and government resources are provided to various road construction contractors for the implementation of road construction projects in Kenya. Not only does best practice require that such road projects are monitored for control, but also project stakeholders require transparency, accountability for resource use and impact, efficient project performance and organizational learning. There have been numerous reports in the media decrying the poor quality and late delivery of road projects by various contractors in different parts of the country.

Numerous road projects in Kenya experience extensive delays and thereby exceed initial time and cost estimates. By examining twelve completed highway projects in different regions of the country, the delay encountered in most projects ranges from 25% to 75% of original contract time. According to Sambasivan and Soon (2007), the problem of delays in the road construction industry is a global phenomenon. The road construction process comprises many tasks which require monitoring and evaluation to ensure compliance with set standards. Task

management in road construction assumes that certainty prevails in the road construction process. However, it is widely observed that, due to poor monitoring in the road construction processes, the intended task management degenerates into mutual adjustment by teams on site leading to non adherence to project plans and subsequent delays (Radosavljevic and Horner, 2002).

Monitoring and evaluation of road projects implementation is paramount in determining the success of road construction projects. It is therefore hypothesized that poor and inefficient monitoring and evaluation of road construction projects could be one of the causes of endemic project delays and poor workmanships on completed road projects. Despite the huge amount of resources provided to the contractors to implement road projects and despite the fact that these projects play a big role in developing the road infrastructure, it is not clear how effectively the monitoring and evaluation is done on these projects implemented by private contractors and government agencies. It was therefore imperative to examine the monitoring and evaluation systems used in road construction projects in Kenya, and assess their effectiveness, with a particular emphasis on structural capacity as a component of monitoring and evaluation system.

### **General Objective**

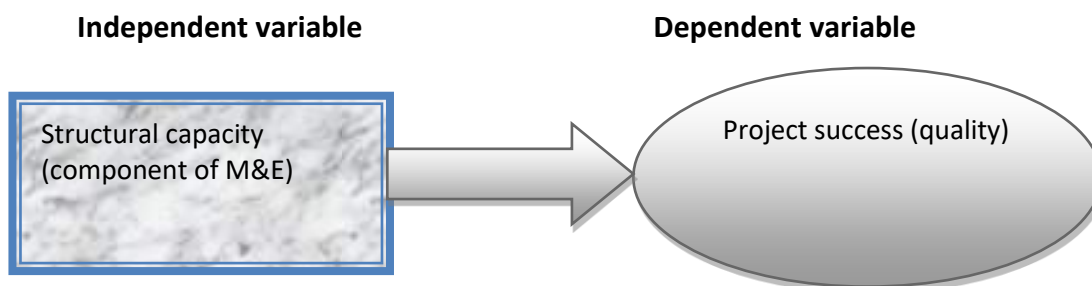
The general objective of this study was to assess the influence of structural capacity as a component of monitoring and evaluation systems on project success. It was envisaged that this research study would serve to fill this knowledge gap by identifying and elucidating the challenges that hinder proper monitoring and evaluation of road projects, and contribute to the existing body of knowledge on monitoring and evaluation.

### **Literature Review**

This chapter contains literature materials from a number of educational researchers; food security intervention projects reports and donor condition guideline manuals regarding food security projects. The literature gave the study its background information necessary to evaluate the variable under study.

### **Theoretical and Conceptual Framework**

The proposed conceptual framework for measuring performance was based on the work of Donabedian, which links structure, processes, outputs, and outcomes in a model for quality assessment and systems monitoring. Literature review focused on mission, structural capacity, processes and outcome mapping as components of Monitoring and evaluation system that work together for the overall success. The prince 2 (Projects in Controlled Environment) approach to quality was used to define project success which is the dependent variable.



### **Structural capacity**

To achieve maturity and excellence in project management, and in particular monitoring and evaluation, nothing should be left to chance or to trial and error. Instead it should be a structured process whereby stakeholders can see the light at the end of tunnel. Kerzner identifies the concept of project office as key to successful implementation of processes. The concept of this project office approach was to get closer to the customer by setting up an organization dedicated to that customer. He continues to emphasize the need for a project office for strengthening monitoring and evaluation system.

Other than the project office concept, there is the issue of information resources particularly on data systems. According to (Mackay, 2007) a problem in African countries, and perhaps in some other regions, is that although sector ministries collect a range of performance information, the quality of data is often poor. Data are poor partly because they aren't being used; and they're not used partly because their quality is poor. In such countries there is too much data, not enough information. So, this lesson for the institutionalization of a government monitoring and evaluation system is to build reliable ministry data systems to help provide the raw data on which monitoring and evaluation systems depend. Data verification and credibility is partly a technical issue of accuracy, procedures, and quality control. Related to this issue of technical quality is the need for data to be potentially useful, for it to be available on a timely basis, easy to understand, consistent over time, and so forth.

### **The Project Quality**

The prince2 (Project In Controlled Environment) training manual describes quality generally as the total amount of features or characteristics of a product, such that it meets expectations and satisfies the stated needs. Project Product approves or disapproves this. The Product Description is a description of the main product that will be produced by the project. The Project Product Description is created in the Starting up of a Project process. It becomes part of the Project Brief and may be refined in the Initiation Stage when creating the Project Plan. After this, the Project Product Description is subject to change control, as it is baselined at the end of the Initiation Stage. The Project Product Description is used by the Closing of a Project Process to help verify that the project has delivered what was expected and that the acceptance criteria have been met. According to the prince2 manual a Project Product Description should include: the purpose of the main product, i.e., what the project must deliver to gain acceptance, its composition, i.e., the set of products that will be delivered during the project that make up the main product, customer's Quality Expectations, acceptance Criteria, Acceptance Methods and Acceptance Responsibilities, project-level quality tolerances.

The above description of quality by prince2 suits well in a road construction project. The purpose of the road has to be defined well with other deliverables along with the product (roads) and the customer expectations and means and ways of accepting the final project.

### **The Kenyan scenario**

To strengthen the monitoring and evaluation (M&E) system, the Government established the Monitoring and Evaluation Directorate (MED) within the Ministry of State for Planning, National Development and Vision 2030 (MPND&V2030) to coordinate the National Integrated Monitoring and Evaluation system (NIMES), Vision Delivery Secretariat (VDS) and a National Steering Committee (NSC) to provide policy direction in matters of M&E, in consultation with other existing bodies such as the National Economic and Social Council (NESC). The Ministry of State for Planning, National Development and Vision 2030 through the Monitoring and

Evaluation Directorate established the National Integrated Monitoring and Evaluation System (NIMES) in 2004 to track implementation of policies, programmes and projects during the ERS and, later on, the Medium Term Plan (MTP) of the Kenya Vision, 2030. The main objective of this system was to provide the Government with a reliable mechanism and framework for measuring the efficiency of Government programmes and/or projects and the effectiveness of public policy in achieving government objectives. In the current Medium Term Planning (MTP), the Government is committed to: Strengthening the institutional framework to ensure that all projects, programmes and policies by the Government, civil society, the private sector and donor partners especially those in the Vision 2030's MTP (2008-2012) are effectively monitored; Train officers in online reporting as well as ensure that information from line ministries, parastatals, local authorities, reform programmes, civil society, private sector and development partners is uploaded and accessible from the online systems, Produce quarterly and annual progress reports on the implementation of the MTP and to ensure that the reports are available on the Monitoring and Evaluation Directorate's web site.

### **Critique of the Existing Literature Relevant to the Study**

The Donabedian Model has long served as a unifying framework for examining health services and assessing patient outcomes. Donabedian defines Structure as the physical and organizational properties of the settings in which care is provided, while Process is the treatment or service being provided to the patient, and Outcomes are the results of the treatment. His model was developed for health systems and not for road construction projects and could not thus be used authoritatively on these projects.

### **Research Methodology**

A descriptive study design was used to collect quantitative and qualitative data. The major purpose of descriptive research is description of the situation as it exists at present (Kothari, 2008). This study adopted descriptive research design which involved field survey. The target population of this study was the road construction contractors and regulatory bodies involved in ongoing road construction projects in Nairobi city and its environs. This research targeted project managers and team leaders involved in road construction projects. Primary data was collected by use of structured questionnaires. The questionnaire was designed to respond to research question. It was administered to project officials who participated in the study. Secondary data was collected through review of published literature such as journals articles, published theses and textbooks.

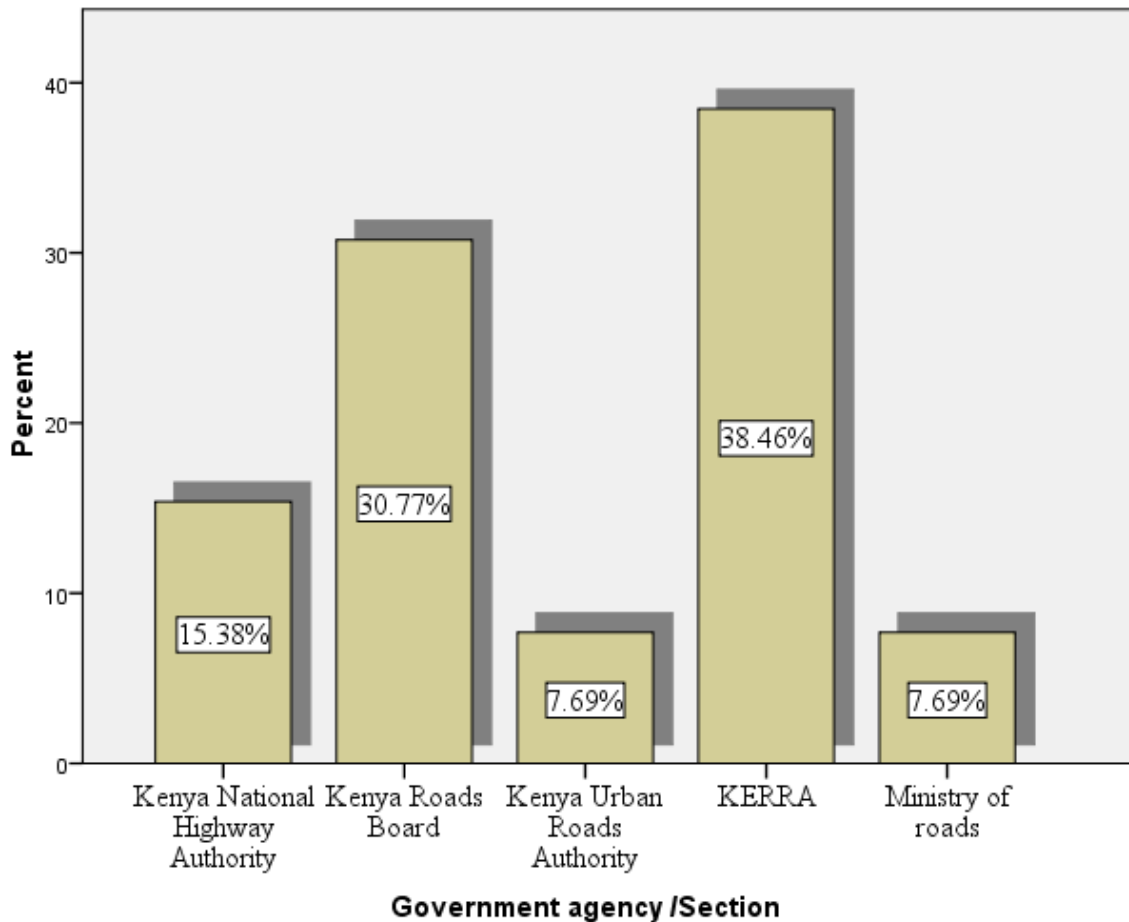
The data collected from the field was captured using Statistical Package for Social Sciences (SPSS) and Microsoft excel. Descriptive statistics including frequency, percentages and means were employed and a summary graphs, pie charts and frequency distribution tables given. Content analysis was used to analysis qualitative data to help triangulate quantitative data. It primarily involves analyzing the contents of documentary materials such as books, magazines, newspapers and the contents of all other verbal materials which can be either spoken or printed. (Kothari, 2009). Correlations for the variables which were defined as the M&E system components were done and results presented in a table.

### **Findings and Discussions**

This research targeted 43 people and same number of questionnaires was distributed. However, a total of 39 were received back. The response rate was 90.69%. Majority of

respondents were between **35 – 44 years** recording over **46%**. **45 – 54 years** followed closely with approximately **31%**.

*Respondents from the various agencies were distributed as follows.*



**Figure 1: Respondent's agency**

The majority of the respondents work with KeRRA at **38.46%** followed by Kenya Roads Board at **30.77%** while ministry of Roads official were the minority at **7.69%**.

**Structural capacity**

*This study sought to know how prepared the ministry of roads is regarding monitoring and evaluation particularly pertaining to data system in place, financial strength, and a framework to support M&E. A likert scale of 1(Strongly disagree) to 5 (strongly agree) was used in rating of statements under each variable then transformed into the corresponding variables named above.*

**Data system**

		Frequency	Valid Percent	Cumulative Percent
Valid	Disagree	6	16.7	16.7
	Not sure	15	41.7	58.3
	Agree	15	41.7	100.0
	Total	36	100.0	
Missing	System	3		
Total		39		

*Availability of data systems necessary for M&E was missing as per the findings of this study. These findings are consistent with earlier research findings by Mackay (2007) that a problem in African countries is lack of adequate data for M&E.*

**Financial support**

		Frequency	Valid Percent	Cumulative Percent
Valid	Disagree	6	15.4	15.4
	Not sure	3	7.7	23.1
	Agree	24	61.5	84.6
	Strongly agree	6	15.4	100.0
Total		39	100.0	

*This study found out that M&E has financial support with at least 76.9% of the respondents attesting to that.*

**Framework for M&E**

		Frequency	Valid Percent	Cumulative Percent
Valid	Agree	27	75.0	75.0
	Strongly agree	9	25.0	100.0
	Total	36	100.0	
Missing	System	3		
Total		39		

*There exists a framework for M&E, according to this study. To strengthen the monitoring and evaluation (M&E) system, the Government established the Monitoring and Evaluation Directorate (MED) within the Ministry of State for Planning. The ministry of Roads has cascaded this to the project level as per the findings.*

### Conclusion and Recommendations

The objective of this study was to assess the influence of monitoring and evaluation system on project success. In particular, it explores the effect of structural capacity of projects teams on road construction project success.

Correlation was then done to find out how these variables worked together under the monitoring and evaluation system to increase project quality which was used in this research to denote project success. Below is a summary of the responses to research questions in a tabular format.

	Structural Capacity	Project Quality
<b>Structural Capacity</b> Pearson Correlation	1	.877
Sig. (2-tailed)		.281
N	39	39

This research was based on the work of Donabedian, which links structure, processes, outputs and outcomes in a model for quality assessment and systems monitoring. This study however narrowed down to research on structural capacity as one of the components of the system. The prince 2 approach to quality was used to define project success. It is clear for an effective monitoring and evaluation, which is key to project success structural capacity, has to be adequate at **.877**. Further, this research also indicated that structural capacity and in particular data systems necessary for monitoring and evaluation exercise is lacking.

### Recommendations

The quality of data sets the standard for all further use of the data and merits careful attention. M&E designers should examine existing data and the reporting procedures used by the project authorities to assess the capacity to generate the data that will be needed for monitoring and evaluation purposes.

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