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Project Evaluation and Performance of Roads Construction in Rwanda: A Case of Nyarutarama Property Developers COTRACO Projects

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Abstract

The general objective of this study was to determine the degree to which Rwandan road building performance is influenced by the evaluation of road projects. The specific goals were to examine the road construction project evaluation process and its effect on Rwanda's road construction performance, to assess the impact of formative project evaluation on Rwanda's road construction performance, and to evaluate the impact of summative project evaluation on Rwanda's road construction performance. Descriptive research design was adopted for this study as it assessed a sample at one specific point in time without trying to make inferences or causal statements; the target population is composed of sixty-six (66) fulltime workers of NPD – COTRACO Ltd in Rwanda who spends their working hours of the day in road construction activities in this company. The sampling technique was census. In this research work, questionnaires, and documentation data collection techniques were used. The collected data were analyzed using SPSS (version 23.0) software. It was first edited, categorized, or coded and computerized. Mean and standard deviation were utilized in descriptive statistics, while regression analysis was employed in inferential statistics to identify and demonstrate the strength of the link between the variables. The findings show that process evaluation relates positively with performance of road construction projects and cannot be concluded that this variable affects the dependent variable since (β=0.063, $p>0.05$; $p=0.360$); There is a positive relationship between formative evaluation and performance of road construction of NPD-COTRACO as results are statistically significant since (β=0.875, $p<0.5$; $p=0.000$); and summative evaluation relates positively with performance of road construction of NPD-COTRACO and cannot be concluded that this variable affects the dependent variable since (β=0.59, $p>0.5$; $p=0.265$). The recommendation that construction companies need to have a budget covering the whole of the project as the budget affects the performance of road construction implementation was provided.

Keywords: *Project Evaluation, Performance of Roads Construction, Nyarutarama Property Developers COTRACO, Rwanda*

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1. Introduction

Project evaluation is employed by project managers through the generation, storage, integration, and exploitation of learned knowledge from the assessment, as extensively supported by project management academics and practitioners (Davis, 2017). Since Rwanda inception in 2008, different kinds of evaluations have been conducted for each road construction project. However, it appears that the authority is having trouble carrying out its mandate, which shows that it hasn't learned from the experience of evaluating road projects. The institution has consistently struggled with faulty road project estimates, drawn-out procurement procedures, and non-performing contracts, which have delayed the start of and caused high-cost overruns on projects (PPDA Audit, 2013). There is currently a paucity of research on the impact of valuation in the construction sector, especially in developing countries (Cooper, 2014; Makarivo & Sokolova, 2014). Studies conducted in Rwanda found that construction project delays, construction project contract management and quality (Baguma, 2012), road construction project procurement management and execution (Konde, 2012), and monitoring based on the influencing factors and contractor performance, (Nkooka, 2014). These studies have not yet looked at how road construction projects are evaluated and performed to be completed within expected timeframes, budgets, or levels of quality. Due to flaws in their evaluation throughout the construction process, some roads are built only to be ruined a few years later.

According to a 2017 report by the Rwandan Audit Office, more than 50% of audited projects received an unqualified opinion, and 50% of projects received an adverse judgment. A total of 109 projects were investigated, of which 206 billion defaulted, 123 billion canceled contracts and 45 billion unfinished projects, 63% of which were road construction. Inability of staff to measure the progress of construction projects during monitoring and evaluation; insufficient budget for external parties to track progress of ongoing activities; inactivity and redundancy in project monitoring and evaluation; stakeholder involvement, etc., all contributed to the problem. Delay in project completion. This study aims to clarify how road project evaluations affect road construction performance in Rwanda and seeks to partially fill this information gap with a case study from NPD COTRACO.

1.1 Objectives of the study

1.1.1 General objective

The major goal of this study was to determine how much Rwanda's road construction performance is impacted by the evaluation of road projects.

1.1.2 Specific Objectives

(i) To examine the road construction project process evaluation and its influence of road construction performance in Rwanda.
(ii) To examine the contribution of formative project evaluation on road construction performance in Rwanda.
(iii) To assess the influence of summative project evaluation on road construction performance in Rwanda.

1.1.3 Research Hypotheses

Ho_1: There is no impact of road construction project process evaluation and its impact on road construction performance in Rwanda.

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H_{O2}: There is no contribution of formative project evaluation on road construction performance in Rwanda.

H_{03}: There is no influence of summative project evaluation on road construction performance in Rwanda.

2. Literature review

2.1 Empirical Literature Review

2.1.1. Process evaluation and project performance

According to Charles and Humam (2015), there seems to be a consensus among project management researchers that oversight and process evaluation play an important role in project success. By providing corrective action for deviations from expected levels, project evaluation and follow-up exercises improve the overall effectiveness of project planning, management, and execution. Although this study focused on road construction projects, these authors examined the impact of his M&E on overall project success. Ali (2013) emphasized that achieving maturity and quality in project management, especially process evaluation, should not be left to chance or trial and error. Instead, it should be a planned procedure that allows all parties to see the end of the tunnel.

He points to the idea of a project office, which is essential for the efficient application of procedures. The idea behind this project office strategy was to build an organization for customers to be closer to customers. He continues to emphasize the importance of project offices to improve monitoring and evaluation systems. In addition to the project office idea, there is the issue of information resources, especially data systems.

M&E is important because it continuously monitors many project metrics that are considered critical to project success. According to Zubair, Zaimi, and Mushairry (2006), monitoring project time is one of many obstacles for project managers. The purpose of time monitoring is to assess how effectively a project is meeting its expected schedule. A roadmap presentation can take many forms. Gantt Charts, Activities on Arrow, Priority Networks, and Balance Lines are some of the most used forms of construction scheduling. A bar chart, also known as a Gantt chart, is a very effective visual and graphical medium for planning construction projects.

2.1.2 Formative evaluation and project performance

According to Ousséni (2012) and other researchers, a formative is required for the Millennium Village project to collect data in the project area and subsequently assess its goals achieved, and resource allocation provide means and tools. This evaluation ensured that the timing, sequence and course of treatment were beneficial. The importance of formative evaluation in ensuring project implementation or project success was emphasized, but its focus was different from that of researchers.

Gladder (2010) provides the knowledge, skills, and tools that analytical project managers and monitoring and evaluation professionals must use to achieve expected results, meet project goals and budgets, optimize schedules, and strive for excellence. , and they need to be able to apply techniques effectively. This is evident from a study on the effects of project monitoring and evaluation on road construction projects in Malaysia. The p-value for each prediction was 0.000.

The results of this study only deal with the knowledge side of competence, whereas her second study of Australia's National Competence insists on verifiable success in project administering. The study also found that two of the most important criteria only addressed the knowledge side of competence. The study found that some project managers lack the expertise to effectively

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monitor and evaluate road infrastructure projects. Nor was it possible to make the necessary changes quickly.

Limitations and problems that impede the monitoring and evaluation of development initiatives were identified in a study by Ryman and Harries (2008). Data from 37 projects were used to achieve the intended goal. According to this study, the importance of project monitoring and evaluation should no longer be underestimated. The research also identified key obstacles and issues that make it difficult to monitor and evaluate project success.

These include the lack of commitment to conduct monitoring and evaluation, and the failure to conduct, communicate, share, and consider such activities. Other limitations identified by the survey were a shortage of skilled staff, a lack of technical resources, inadequate budget allocations for monitoring and evaluation with p-value of -0.002. However, as the study was conducted in Europe, Kenya will not necessarily benefit from its conclusions.

2.1.3 Summative evaluation and project performance

According to Harold (2013), summative evaluation knowledge enables project managers and contractors to analyze infrastructure projects more effectively, improving project performance. The study also showed that data collected through stakeholder feedback and monitoring, while statistically insignificant, is still important to project performance.

According to Harries and Reyman (2010), the project manager defines the objectives and parameters of the summative evaluation, plans the reporting and use of information, collects and manages data, performs data analysis, and has the ability report the results of the project. You have to be able to raise it and develop human resources. The main monitoring and evaluation activities of the project are outlined in studies by Kabwegyere and Kiyega (2010) and Kerzner (2011). These consist of an initial needs analysis, a project design theoretical framework, an M&E plan, and basic research. They insisted on impact of monitoring and evaluation on the efficiency of project input use and project implementation processes to ensure that completed road projects achieve the desired quality.

2.2 Research Gap

Project management techniques have been widely used to ensure success in various institutions (Andersen, 2008). In third world countries, the management technology aspect is important. It has little or no resources and needs to be fully utilized to achieve the project goals. Project management requires environmental considerations, preparation of some actions, development of implementation strategies, project monitoring and evaluation, and dissemination to project members.

Anderson (2008) explained that realization is the main axis of victory or failure in projects. The phase of project realization, which involves acquiring growth and initiating projects, presents endless challenges for managers. This is a multifaceted process that often requires simultaneous attention to a variety of personal, scientific, and financial indicators (Okeyo, 2011). Project realization requires a clear framework to guide its implementation. However, as the action progresses, we often need to make a distinction. According to Gray and Larson (2003), their intention to focus on the realization gap is the discrepancy between goals set by lower-level managers and higher-level managers. This implementation phase presents many challenges.

As revealed by Cusworth and Franks (1993) and pointed out by Adzawodah (2009), the collapse of public projects is evident in the realization stages, action plans, and inability of subsidies to achieve their intended goals. All these problems are related to financial and poor operational or institutional policies in public administration. Morris (2002) emphasized that

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project failure is not the responsibility of the project board manager. Furthermore, in a Vietnamese study by Long et al. (2004) provided the following major causes of project failure: Time, cost and breakdown of achieving set terms and membership prospects.

In the United Arab Emirates, project performance is impacted by project complexity, lack of skilled manpower, the lack of planning capacity, ineffective follow ups, inadequate leadership, and lack of facilities. There are many factors that give Equipment failure (Faradic & El-Saying, 2010). Project performance in sub-Saharan Africa has been adversely affected by conflict, substandard work, and inadequate contractor capacity (Carter, 2012).

According to Harries and Ryman (2010), an average of 65% of construction projects by local firms in Africa were considered unsuccessful. This is because most project planners also acted as monitoring and evaluation agents and was unable to disclose the truth. About what is wrong and what changes are needed to affect the performance of the project. As a result, project delivery, which many researchers have worked to ensure that projects are completed within allocated budgets, timelines, and quality standards, is problematic. However, little attention was paid to government-built road projects.

Empirical literature indicates that many researchers have discovered the properties necessary for effective implementation and monitoring of projects. However, the researchers noted the lack of precise academic research on the performance impact of project evaluation and road construction in Rwanda.

2.3 Conceptual Framework

This part of conceptual framework analyses the way project evaluation in the lifecycle of roads constructed by the NPD – COTRACO Ltd affect the end results of the success of project by considering costs, completion period, satisfaction on both sides contractor and the client. Apart from independent variables to influence deliveries of the road projects, there are some other factors that can contribute either directly or indirectly to the deliveries of the road projects built by NPD – COTRACO Ltd.

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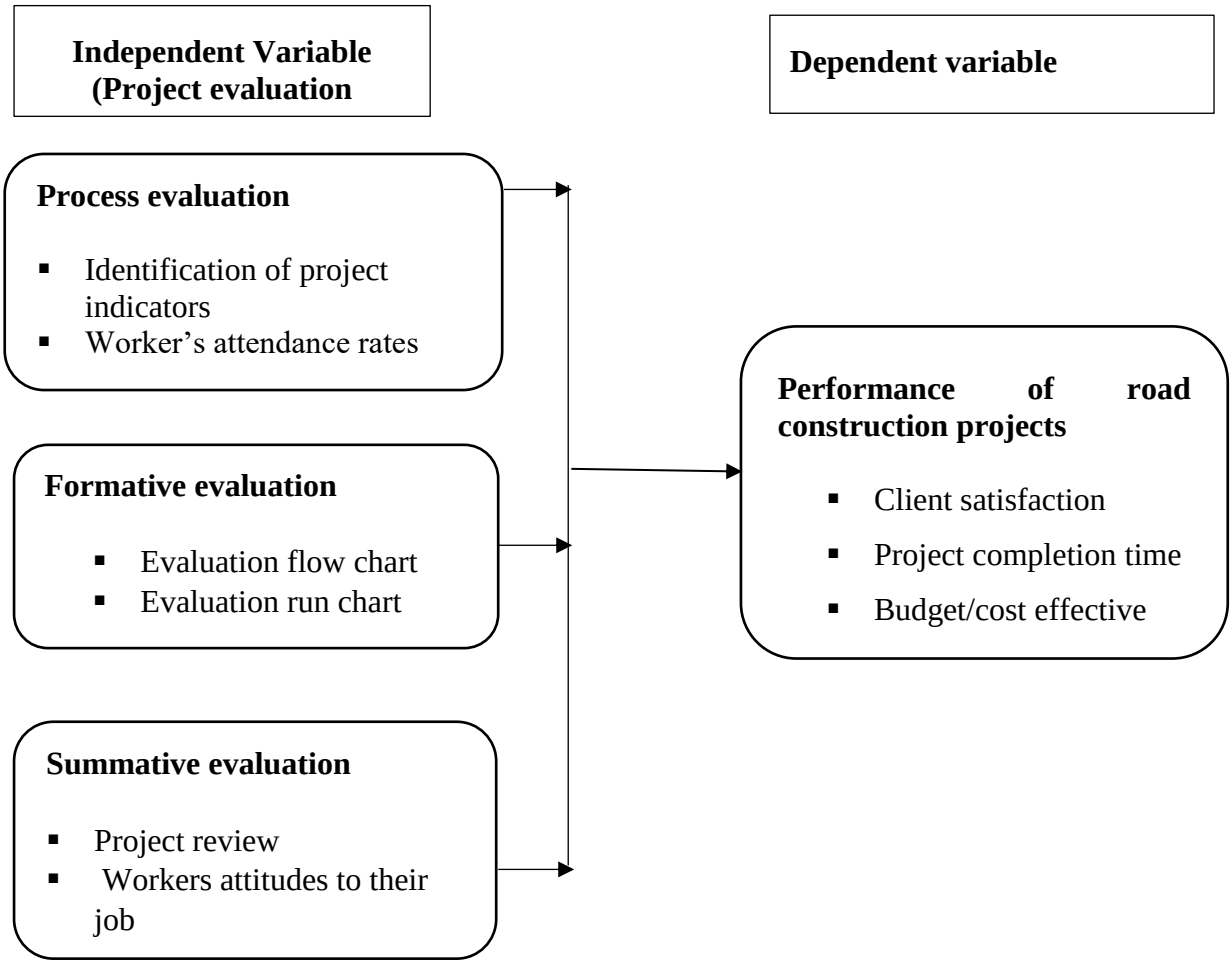

Source: Researcher, 2023

Figure 1: Conceptual Framework

The relationship between variables is shown in the image to explain how project appraisal affected the success of road construction projects. The figure illustrates that the project evaluation, which is conceptualized as process evaluation, formative evaluation, and summative evaluation as indicators to which contribute on performance of the road construction projects built by NPD - COTRACO Ltd as a case of this study, is the independent variable in this study. One independent variable influences or controls another (Omachonuet al., 2008). It is flexible and its values are simply assumed; they do not constitute a problem that needs to be clarified through investigation. The performance of the road construction projects built by NPD - COTRACO Ltd is the dependent variable in this example, and it is analyzed in terms of client and contractor satisfaction, project completion time, and budget/cost effectiveness. The figure also noted a few influencing factors, such as the district strategic plan, the accessibility of construction materials, and the financial situation, which could have an impact on how well NPD - COTRACO Ltd.'s road construction projects perform. These factors could affect the study's findings if they are not controlled.

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3. Materials and Methods

In the context of the current study, the descriptive research design was chosen to gather accurate data about the current situation and draw broad conclusions from the results. It utilizes a combination of qualitative and quantitative design strategies to ensure comprehensive understanding of the phenomenon. The target population comprises sixty-six (66) full-time workers of NPD – COTRACO Ltd in Rwanda who are involved in road construction activities.

Since the sample size is equal to the entire population, a census method was employed, ensuring that every individual in the target population was considered. This approach enhances the reliability of the research findings as it eliminates sampling bias. Data collection techniques included questionnaires and documentation. Questionnaires were filled on the same day of delivery and returned automatically. Secondary data were gathered from various papers of NPD - COTRACO Ltd, while primary data were collected through questionnaires from the respondents.

The questionnaire consisted of three sections: socio-demographic characteristics related questions, open-ended and closed-ended questions, and a Likert scale for ranking responses. This approach minimized researcher and respondent bias. Additionally, documentary analysis was employed to assess papers providing data on how project evaluation affects the effectiveness of road construction projects.

Data collection instruments were administered directly to the 66 respondents using the drop-and-pick method. Follow-up visits and courtesy calls were made to increase the response rate. The researcher ensured instrument validity through expert judgment and instrument reliability through a pilot study and Cronbach's Alpha Coefficient analysis.

Data analysis was conducted using SPSS software. The gathered data were edited, categorized, and computerized. Descriptive statistics, including mean and standard deviation, were employed for descriptive analysis, while linear regression analysis was used for inferential statistics to examine the relationships between variables. For this investigation, a linear regression model was applied. $\boldsymbol{Y} = \boldsymbol{\beta 0} + \boldsymbol{\beta 1 X 1} + \boldsymbol{\beta 2 X 3} + \boldsymbol{\beta 3 X 3} + \epsilon$ Where: $\boldsymbol{Y}$ = Performance of road construction, $\boldsymbol{X1}$ = Process Evaluation, $\boldsymbol{X2}$= Formative Evaluation, $\boldsymbol{X3}$ = Summative Evaluation, $\boldsymbol{\beta 0}$ = the Constant and ϵ = error term

Ethical considerations were considered throughout the study. The researcher emphasized the academic nature of the research, ensured confidentiality, and maintained anonymity by avoiding the use of names in the questionnaires. Participation in the research was voluntary, and participants were provided with information about the study's objectives and the truthful reporting of research findings.

4. Research Findings

4.2.1 Project process evaluation

The first indicator of project evaluation studied is the process evaluation done by NPD-COTRACO to improve its performance. To find out the status of process evaluation, the questions were asked to the respondents and their answers are as follow:

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Table 1: Project process evaluation

Statement	Mean	SD
Project process evaluation helps to understand the project activities being done	4.34	.77
Project process evaluation helps in tracking the changes	4.19	.76
Project process evaluation helps in Identification of indicators & targets of the project	4.63	.57
Project process evaluation leads to achieving set goals	3.96	1.06
Project process evaluation is the continuous routine in tracking of key elements of project implementation performance	4.18	1.12
Project process evaluation influences NPD COTRACO LTD to understand project expectations	3.72	.92
Project process evaluation outlines influence project performance	4.69	.46
Project process evaluation takes care of all aspects that need to be in place so that there is early detection of progress of project performance	3.69	.91

Source: Primary data (2023)

Legend: *X: Mean, SD≤1: HomogeneitY, SD≥1: Heterogeneity SD, 4.2-5.0 -very high, 3.4-4.2 -high, 2.6-3.4-Moderate mean, 1.8-2.6 -low mean, 1.0-1.8 -very low mean.*

The table 1 portrait the statistics from the respondents and it was made clear that most of respondents were in agreement with the statements as shown by the high means and homogeneity in responses indicated as follows: Project process evaluation helps to understand the project activities being done with X=4.34 and St. D of 0.77; project process evaluation helps in tracking the changes with X=4.19 and St. D of 0.76; project process evaluation helps in Identification of indicators & targets of the project with X=4.63 and St. D of 0.57; project process evaluation influences NPD COTRACO LTD to understand project expectations with X=3.72 and St. D of .92; project process evaluation outlines influence project performance with X=4.69 and St. D of 0.46; project process evaluation takes care of all aspects that need to be in place so that there is early detection of progress of project performance with X=3.69 and St. D of 0.91. to the other side, the respondents also weren't in agreement with in responses as shown in the following two statements and their statistics on agreement there is the high means and heterogeneity in their responses: Project process evaluation leads to achieving set goals with X=3.96 and St. D of 1.06; project process evaluation is the continuous routine in tracking of key elements of project implementation performance with X=4.18 and St. D of 1.12

4.2.2 Project formative evaluation

The second indicator of project evaluation studied is the formative evaluation done by NPD-COTRACO to improve its performance. To find out the status of process evaluation, the questions were asked to the respondents and their answers are as follow:

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Table 2: Formative project evaluation and the performance of road construction

Statement	Mean	SD
Formative project evaluation of the project depends on a summary of the roads project execution, including whether the project met its objectives	4.43	.78
Formative project evaluations aim to assess the continued relevance of an intervention and the progress made towards achieving its planned objectives.	3.90	1.28
Formative project evaluations in NPD-COTRACO LTD should take place approximately halfway through the implementation of projects to ensure its success.	4.36	.93
Staff management of NPD-COTRACO LTD in formative project evaluations influence performance of load construction project of NPD-COTRACO LTD	3.95	1.20
Stakeholders in NPD-COTRACO LTD are involved in preparation of formative project evaluations of work plans.	4.13	.95
Staff Management of NPD-COTRACO LTD decisions are considered during formative project evaluation process;	4.09	1.06
Trainings and capacity building for formative project evaluation reporting is important in NPD-COTRACO LTD to ensure performance of its project.	4.19	1.07
Formative project evaluation helps project owner be familiar with its design, intent, focus, and how to use the monitoring tools.	4.33	.82
Formative project evaluation helps in respecting the road construction project timelines	4.33	.88

Source: Primary data (2023)

Legend: *X: Mean, SD≤1: Homogeneity, SD≥1: Heterogeneity SD, 4.2-5.0 -very high, 3.4-4.2 -high, 2.6-3.4-Moderate mean 1.8-2.6 -low mean, 1.0-1.8 -very low mean.*

Table 2 indicates that there is agreement among respondents about with formative project evaluation of the project depend on a summary of the roads project execution, including whether the project met its objectives with a mean of 4.43 which is taken as a very high mean and homogeneity in responses as the standard deviation is 0.78 which is less than one (SD≤1).

It is clear also that to all statements many respondents were in agreement with high and very high means and most of them with homogeneity in responses as follows: Formative project evaluations aim to assess the continued relevance of an intervention and the progress made towards achieving its planned objectives X=3.90 and St. D=1.28; formative project evaluations in NPD-COTRACO LTD should take place approximately halfway through the implementation of projects to ensure its success X=4.36 and St. D= 0.93; staff management of NPD-COTRACO LTD in formative project evaluations influence performance of load construction project of NPD-COTRACO LTD X= 3.95 and St. D= 1.20, stakeholders in NPD-COTRACO LTD are involved in preparation of formative project evaluations of work plans X= 4.13 and St. D= 0.95, staff Management of NPD-COTRACO LTD decisions are considered during formative project evaluation process X= 4.09 and St. D= 1.06; trainings and capacity building for formative project evaluation reporting is important in NPD-COTRACO LTD in order to ensure performance of its project X= 4.19 and St. D= 1.07, formative project evaluation helps project owner be familiar with its design, intent, focus, and how to use the monitoring tools X= 4.33 and St. D= 0.82, and formative project evaluation helps in respecting the road

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construction project timelines X= 4.33 and St. D= 0.88. From the findings in table 4.3 formative evaluation greatly influence the performance of road construction.

4.2.3 Project summative evaluation

The third indicator of project evaluation studied is the summative evaluation done by NPD-COTRACO to improve its performance. To find out the status of process evaluation, the questions were asked to the respondents and their answers are as follow:

Table 3: Summative project evaluation and the performance of road construction

Statement	Mean	SD
Use of summative project evaluation helps in avoiding roads post completion defects in NPD-COTRACO LTD	4.43	.68
Summative evaluation practices are the continuous routine in the tracking of key elements of project implementation performance;	4.31	.93
The effectiveness of end-time project monitoring is also dependent on the technique's practices used.	4.06	1.02
Basic research; accounting and certification; status assessment; and effectiveness measurement are used at NPD-COTRACO LTD projects.	3.86	.69
Use of summative evaluation increases the client and user satisfaction	4.10	.96
Summative project evaluations help towards the success in terms of complying with NPD-COTRACO LTD projects plans.	4.36	.85
Summative project evaluations help in establishing the extent to which the project has achieved its objective.	4.34	.81
Summative project evaluations help in finding out the overall project performance	4.33	.84
Summative project evaluations help in avoiding repeating mistakes on future projects and objectives.	4.45	.76

Source: Primary data (2023)

Legend: *X: Mean, SD≤1: Homogeneity, SD≥1: Heterogeneity SD, 4.2-5.0 -very high, 3.4-4.2 -high, 2.6-3.4-Moderate mean, 1.8-2.6 -low mean, 1.0-1.8 -very low mean.*

From the findings of table 3, the respondents views were as follows; use of summative project evaluation helps in avoiding roads post completion defects in NPD-COTRACO LTD with X=4.43 and St. D of 0.68; summative evaluation practices are the continuous routine in the tracking of key elements of project implementation performance with X=4.31 and St. D of 0.93; the effectiveness of end-time project monitoring is also dependent on the techniques practices used with X=4.06 and St. D of 1.02, basic research; accounting and certification; status assessment; and effectiveness measurement are used at NPD-COTRACO LTD projects with X=3.86 and St. D of 0.69, use of summative evaluation increases the client and user satisfaction with X=4.10 and St. D of 0.96, summative project evaluations help towards the success in terms of complying with NPD-COTRACO LTD projects plans with X=4.36 and St. D of 0.85; summative project evaluations help in establishing the extent to which the project has achieved its objective with X=4.34 and St. D of 0.81; summative project evaluations help in finding out the overall project performance with X=4.33 and St. D of 0.84; summative project evaluations help in avoiding to repeat mistakes on future projects and objectives with

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X=4.45 and St. D of 0.76. All respondents were in agreement on all statements with high means and homogeneity in responses except on the effectiveness of end-time project monitoring is also dependent on the technique's practices used with X=4.06 and St. D of 1.02 for which respondents agreed with high mean and heterogeneity in responses since the St. D of 1.02 is greater than one.

4.2.4 Project performance

The dependent variable under this study is NPD-COTRACO road construction performance. To find out the status of process evaluation, the questions were asked to the respondents and their answers are as follow:

Table 4: Road construction project performance at NPD-COTRACO

Statement	Mean	SD
In my own point of view project evaluation leads to the timely completion of projects.	4.01	1.12
Project evaluation leads to timely completion of projects.	4.19	.84
NPD-COTRACO LTD in Rwanda has been able to complete projects on time over the past one year	4.06	1.10

Source: Primary data (2023)

Legend: *X: Mean, SD: Standard Deviation, St. D≤1: Homogeneity, SD≥1: Heterogeneity, SD, 4.2-5.0 -very high, 3.4-4.2 -high, 2.6-3.4-Moderate mean, 1.8-2.6 -low mean, 1.0-1.8 -very low mean.*

Table 4 which is about the road construction project performance at NPD-COTRACO shows the respondents view as the following: In my own point of view project evaluation leads to the timely completion of projects, Project evaluation leads to timely completion of projects, and NPD-COTRACO LTD in Rwanda has been able to complete projects on time over the past one year respectively 4.01, 4.19, and 4.06 of means and above three-quarters of respondents were in agreement with all statements. The respondents were asked if in their opinions they think the project evaluation methods improve road construction project performance; the respondents' responses are as follows:

Table 5: Respondents view on project evaluation and project performance.

Respondent' view	Frequency	Percent
Yes	57	86.4
No	9	13.6
Total	66	100.0

Source: Primary data (2023)

Table 5 indicates that many respondents represented by 57(86.4%) agree that project evaluation has a great impact on project performance while only 9 (13.6%) respondents answered that project evaluation doesn't impact its performance.

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4.2.5 The relationship between project evaluation and performance of roads construction in Rwanda

In this part, the relationship between project evaluation and performance of roads construction in Rwanda was examined. Therefore, multiple regression models were used. This is a good method to determine the relationship between dependent and independent variables (Cohen, West and Aiken, 2003).

This part indicates the individualized correlation model between the independent variables (project process evaluation, project formative evaluation and project summative evaluation) and the project performance.

Table 6: Correlation between the variables

Project Evaluation		Project Performance
Project Process Evaluation	Pearson Correlation	.845**
	Sig. (2-tailed)	.000
	N	66
Project Formative Evaluation	Pearson Correlation	.969**
	Sig. (2-tailed)	.000
	N	66
Project Summative Evaluation	Pearson Correlation	.724**
	Sig. (2-tailed)	.000
	N	66

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

Source: Primary data (2023)

The findings from Table 6 indicated that there is the positive relationship between independent variables namely the process, formative and summative evaluation and dependent variable in this case the performance of roads construction because of their correlation coefficients of .845** , .969** and .724** respectively and that is statistically significant since the Sig. (2-tailed) P-value of .000 is less than 0.01.

Regression analysis

Table 7: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.972[a]	.944	.941	.22443

a. Predictors: (Constant), Project Summative Evaluation, Project Formative Evaluation, Project Process Evaluation

Source: Primary data (2023)

Table 7 shows Adjusted R squared explains the variation in the dependent variable due to changes in the independent variable, the findings in the above Table 4.8 indicated the value of adjusted R squared was .941 an indication that there was variation of 94.4% on performance of road construction projects of NPD-COTRACO, this was because of changes in process

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evaluation, formative evaluation, summative evaluation at 95% confidence interval. Therefore 94.4% changes in performance of road construction projects of NPD-COTRACO could be accounted for by process evaluation, formative evaluation, and summative evaluation. This indicated that the other variables (factors) that were not studied in this study contributed 5.6% of the variability on performance of road construction projects of NPD-COTRACO.

The letter R is the correlation coefficient that indicates relationship between the studies variables, the findings shows that there was a strong positive relationship between the study variables 0.972.

Table 8: Analysis of variance (ANOVA)

ANOVA[b]					
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	52.776	3	17.592	349.260	.000[a]
	Residual	3.123	62	.050		
	Total	55.899	65			

a. Predictors: (Constant), Project Summative Evaluation, Project Formative Evaluation, Project Process Evaluation

b. Dependent Variable: Project Performance

Source: Primary data (2023)

The ANOVA report which assessed the overall significance of the regression model applied in this study indicated the $p<0.05$ (Sig. =0.000) and therefore the model was significant at 95% confidence level. This shows that process evaluation, formative evaluation, and summative evaluation influence performance of road construction. A p-value of 0.000 is less than the set level of significance of 0.05 for a normally distributed data. This means that the model is highly significant in explaining performance of the performance of road construction projects at NPD-COTRACO.

Table 9: Regression Coefficients

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.230	.377		-3.260	.002
	Project Process Evaluation	.135	.147	.063	.922	.360
	Project Formative Evaluation	.975	.061	.875	15.873	.000
	Project Summative Evaluation	.156	.139	.059	1.125	.265

a. Dependent Variable: Project Performance

Source: Primary data (2023)

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The results in Table 9 imply that process evaluation relates positively with performance of road construction projects, we cannot conclude that this variable affects the dependent variable since (β=0.063, p>0.05; p=0.360); There is a positive relationship between formative evaluation and performance of road construction of NPD-COTRACO as results are statistically significant since (β=0.875, p<0.5; p=0.000); and summative evaluation relates positively with performance of road construction of NPD-COTRACO and we cannot conclude that this variable affects the dependent variable since (β=0.59, p>0.5; p=0.265).
The results of the study concurred with that of Ryman and Harries (2008) which was about Limitations and problems that impede the monitoring and evaluation of development initiatives were identified in a study by Ryman and Harries (2008). Data from 37 projects were used to achieve the intended goal. According to this study, the importance of project monitoring and evaluation should no longer be underestimated. The research also identified key obstacles and issues that make it difficult to monitor and evaluate project success.
These include the lack of commitment to conduct monitoring and evaluation, and the failure to conduct, communicate, share, and consider such activities. Other limitations identified by the survey were a shortage of skilled staff, a lack of technical resources, inadequate budget allocations for monitoring and evaluation with p-value of -0.002. The negative constant (β0=-1.230) simply means that the baseline proportion of the study sample is quite low.

5.1 Conclusion

In conclusion, based on the findings, the research objective regarding examination of project process evaluation and its influence on road construction performance showed that most respondents agreed with the statements related to process evaluation and its influence on road construction performance. There were high means and homogeneity in responses for most statements. However, there were also statements where respondents were not in agreement, indicated by high means and heterogeneity in responses. These findings align with previous research emphasizing the importance of planned process evaluation for achieving maturity and quality in project management.

The objective regarding contribution of formative project evaluation on road construction performance showed that many respondents agreed with the statements regarding the contribution of formative project evaluation on road construction performance. There were high means and homogeneity in responses for most statements, indicating agreement among respondents. The findings support the idea that formative project evaluations play a significant role in assessing intervention relevance, progress, stakeholder involvement, and staff management decisions, ultimately influencing road construction performance.

The findings showed that respondents agreed with the statements related to the influence of summative project evaluation on road construction performance. There were high means and homogeneity in responses for most statements, indicating agreement among respondents. Summative evaluation was seen as helping to avoid post-completion defects, tracking key elements of project implementation performance, increasing client and user satisfaction, and establishing project objectives and overall performance. However, there was one statement where respondents showed agreement with a high mean and heterogeneity in responses regarding the effectiveness of end-time project monitoring.

Finally, It is concluded that process evaluation relates positively with performance of road construction projects, there is a positive relationship between formative evaluation and performance of road construction of NPD-COTRACO, and summative evaluation relates positively with performance of road construction of NPD-COTRACO and process evaluation

and summative evaluation variables we cannot conclude that affect the dependent variable since their p>0.05.

5.2 Recommendations

Based on the findings, these are the recommendations: Construction companies need to have a budget covering the whole of the project as the budget affects the performance of road construction implementation. Employees of Construction Companies are recommended to be offered the ongoing professional trainings.

5.3 Acknowledgement

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