International Journal of Social Science and Economic Research

ISSN: 2455-8834

Volume:08, Issue:04 "April 2023"

MANAGEMENT INFORMATION SYSTEMS ON PERFORMANCE OF ROAD CONSTRUCTION PROJECTS IN NYANDARUA COUNTY, KENYA

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DOI: 10.46609/IJSSER.2023.v08i04.014 URL: https://doi.org/10.46609/IJSSER.2023.v08i04.014

Received: 20 March 2022 / Accepted: 16 April 2023 / Published: 21 April 2023

ABSTRACT

The purpose of this study was to establish the influence of project management information systems on road construction project performance; a case of Nyandarua County, Kenya. The objective of this study was to establish the extent to which system quality influences the performance of road construction projects. The study was hinged on the Delone and Mclean IS Success Model .The study adopted a descriptive research design. The target population was 302 comprising of project managers, construction managers and project supervisors from 62 local road construction projects in Nyandarua County. The 169 participants were recruited by a stratified proportional random selection procedure. Self-administered questionnaires were used to collect primary information. Statistical Analysis Software for the Social Sciences was used for the data analysis (SPSS Version125.0). All numerical variables had their descriptive statistics computed, including frequency and percentage distributions, mean and standard deviation, and presentation in frequency tables. Inferential data analysis was done using multiple regression analysis. According to the research, the quality of the system had a minor impact on road construction project performance. The research found out that the information quality provided by the system has a significant impact on the outcomes of road construction performance projects. The study also found out that the performance of road construction projects was moderately affected by the ease with which project data could be accessed and retrieved.

From the findings, the study revealed that a unit increase in system quality would lead to a 0.828 increase in performance of road construction projects in Nyandarua County. This variable was significant since $p=0.001$ is less than 0.05 and therefore the study established that system quality had a positive influence on the performance of road construction projects in Nyandarua County, Kenya ($\beta=0.828$, $p=0.001<0.05$).

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Based on the results of the study, it is recommended that the management of road construction projects in Nyandarua County, upgrade their PMIS in terms of software adaptability, software availability, software reliability, software response time, usability, and maintainability in order to improve the performance of road construction projects.

Keywords: Project Management, Management Information System, Road Construction, Project Performance

Introduction

Globalization and the information age have resulted in a decline in information literacy and a narrowing of the digital divide (Raymond & Bergeron, 2017). This has resulted in increased corporate competitiveness not only locally but also internationally. Project management as a management discipline is a relatively recent development, and it is becoming increasingly complicated and dynamic (Elonen & Artto, 2020). The knowledge gap that exists within the profession has been the most significant impediment to project management. However, it is assumed that a thorough grasp of such important missing data will enable successful project management. Project management in a multi-project setting faces additional challenges than project management in a single-project environment. Project managers who are responsible for multiple projects with varying scopes, complexity, and timelines face unique challenges related to resource conflicts and throughput times (Zadeh, Zadeh, & Moini, 2019), project interdependence and interaction (Patanakul & Milosevic, 2017), and project overload (Alizadehsalehi & Yitmen, 2019).

Road construction projects come in a variety of sizes, from medium to huge to extremely large. They are located in isolated areas, with some operating in underdeveloped and environmentally vulnerable areas. They are located in areas remote from the supervisory team's headquarters, the contractor's headquarters, and large urban clusters. Throughout the construction process, all project stakeholders face several challenges and time-consuming management issues. These possible issues have a detrimental effect on the project's quality and result in significant delays and expense increases. The project team must address not just standard management issues, but also ones that arise as a result of these frequently environmentally sensitive sites' remote settings (Kestle & London, 2020). Bowden (2019) asserts that building expenses can be decreased by 25% with efficient information transfer between construction teams; this information transfer can be accomplished using an ACMS.

In Kenya, the building industry is critical to the economy's growth. Kenya's building industry accounts for around 40% of Gross Fixed Capital Formation (GFCF) and 4% of Gross Domestic Product (GDP). It employs over 80,000 individuals. According to the Kenya National Bureau of

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Statistics (KNBS; 2018), construction contributed 3.8 percent, 4.1 percent, 4.3 percent, and 4.1 percent to Gross Domestic Product (GDP) in 2017, 2019, 2017, and 2017. This equates to an average of 4.1 percent, compared to 10% in developed economies (Hillebrandt, 2017). The road network's size is difficult to quantify precisely because it incorporates several unrecorded or unmeasured roads and trails. Sub-Saharan Africa has around 940,000 kilometers of designated rural roads, with an estimated replacement cost of US$48 billion. Additionally, Africa has an extensive network of unmarked rural roads, trails, walkways, and footbridges. This network is anticipated to be one and a half to two times the size of the local government road network. Agriculture generates a third of the region's gross domestic product and 40% of export income along this rural network.

Not only does the adoption of PMIS provide enterprises with a competitive edge over their competitors, but it also improves the effectiveness of construction projects across their life cycle and across the many construction business functions. According to Kaiser et al. (2017), the use of PMIS is justified by the idea that the associated costs will be covered by the associated benefits. They continue by stating that expanding the breadth of PMIS enables firms to manage not just individual projects, but entire project portfolios. These PMIS support the majority of the project life cycle phases, from idea generation to risk management, stakeholder management, and long-term knowledge management.

Statement of the Problem

There are numerous road contractors in Kenya who have fallen short of expectations (ROK, 2019). Historically, numerous road projects have been completed with substandard performance due to a variety of contractor factors, including the usage of information technology. Although the use of PMIS in project management does not ensure project success, PMIS have become a must for the management of all projects, large or little, public or private (Elonen & Artto, 2018). Raymond et al. (2017) predict that 75% of road construction projects managed with PMIS help succeed, while 25% of those managed without PMIS support fail. Numerous local road contractors in Nyandarua County have failed or performed poorly, particularly when it comes to road maintenance (KURA, 2019). The government's attention has been drawn to their performance, compelling it to develop performance contracts and even establish the authority to regulate the contractors' performance. Cost overruns and project delays can be linked to a lack of IT and PMIS adoption in construction projects' project management (Njenga, 2019). Ogero (2020), Ngari (2017), and Kiprotich and Kiptum (2017) have all undertaken related studies in Kenya. Ineffective ICT adoption offers significant hazards to the construction process, including internal financial difficulties, working capital constraints, substandard plans and specifications, and cost overruns (Benton & McHenry, 2018). This is corroborated by Tiwari et al. (2020), who noted that ICT utilization in the majority of road construction projects have frequently been

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described as restricted and ineffective in comparison to other sectors in the majority of economies.

The Ministry of Public Works (2018) identified an inadequate monitoring process and poor information management. Contractors in Kenya face a variety of challenges and limits related to their own management, as well as the adoption and usage of PMIS (Apudo, 2021).With project managers increasingly utilizing PMIS across all industries, little is known about the properties of these systems that contribute to project performance. Lack of perceived utility of the system is a major cause of construction project failure. Burke et al. (2017) also cited a problem with the system's information quality as a barrier to the effective application of IT for project performance. This opinion is backed up by study conducted by META Group (2019), which found that more than 75% of businesses identified simplicity of use as a major barrier to PMIS adoption, with many users viewing it as difficult.

The influence of PMIS on the performance of road construction projects, on the other hand, has not been explicated explicitly. As such, the purpose of this study was to ascertain the influence of PMIS on the performance of road construction projects in Nyandarua County, Kenya.

Objectives of the study

The study sought to establish the extent to which system quality influences the performance of road construction projects in Nyandarua County, Kenya.

Research Questions

The study was guided by the following research question:

i. To what extent does system quality influence the performance of road construction projects in Nyandarua County?

Literature Review

Road Construction Projects Performance

The global construction industry is continually evolving in response to new or improved management systems, new technology, and the need to grow and diversify activities in order to achieve company goals and objectives. The industry has been significantly impacted by the implementation of these sustainable project concepts and practices, and as a result, project management best practices are now recognized as a fundamental component of any successful, competitive firm (Musinya, 2017).

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Kinuthia (2020) outlined several barriers to construction projects adopting construction management software, including a lack of information about these softwares, a lack of personnel with adequate working knowledge and familiarity with these softwares, a lack of a structured approach to planning construction activities within the firms, and the cost of the softwares. Due to a lack of continuity and repetitious behavior in projects, the construction sector is sometimes criticized of being fragmented and inefficient. For many years, information technology was promoted as a panacea.

However, despite the potential, the development of computerized information systems (IS) has yielded few benefits (Lindfors, 2019).

Another issue that may be unique to environments with multiple projects is project overload. The subject of project overload has received less attention than numerous other aspects of project management. As a result, precise definitions of project overload are difficult to come by. Project overload may be a result of over-commitment, or having too many initiatives in comparison to available resources. Zika-Viktorsson et al. (2017) discovered that the number of concurrent projects on which a project manager is working predicts project overload and that project overload has a detrimental study on project performance as evaluated by poor adherence to time deadlines and work quality. It is critical to strike a balance between project demand and available human resources in order to avoid project overload. To create balance, it is necessary to have suitable routines and support systems. A realistic assignment of tasks is an efficient method of managing several projects. Implementing a PMIS may assist in achieving realistic project assignment (Patanakul & Milosevic, 2017a).

PMIS are system tools and techniques used in project management to transmit information, according to Project Management Knowledge (2017). Micro-Soft Project, dot Project, and Primavera are all examples of PMIS tools. The primary goal of project management is to accomplish all project goals and objectives while adhering to predefined project constraints such as time, budget, quality, and scope, as well as optimizing the allocation and integration of inputs required to meet predefined objectives while mitigating risk. PMIS are critical components of efficient and effective project management, having evolved significantly from simple scheduling applications to complex information systems that span a broad variety of project operations while serving a diverse set of stakeholders (Kaiser et al., 2017).

System Quality and Road Construction Projects Performance

Leon, Osman, Georgy, and Elsaid (2017) conducted an evaluation of the system dynamics approach for forecasting construction project performance. The proposed model incorporates eight performance indices for construction projects that were identified through a literature

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review and interviews with domain experts. Cost, schedule, quality, profitability, safety, the environment, team satisfaction, and client satisfaction are all performance characteristics. This model is intended for use by contractors during the construction phase of projects using unit pricing contracts. The model was evaluated for usability and accuracy during a road construction project. The findings indicate that there is a high degree of concordance between actual and anticipated performance measures. The model was also used by the project manager to simulate four different intervention scenarios. The outcomes of various scenarios are generally consistent with the expected effects of the interventions. Through the development of a more holistic and interdependent model of project performance measures, the research advances the state of practice and knowledge in project performance forecasting. However, this is distinct from the use of project management information systems and the performance of Kenyan road construction projects: the case of Nyandarua County.

Wanyonyi and Theuri (2021) evaluated how the implementation of an integrated financial management information system affects the financial performance of Trans Nzoia County, Kenya. The foundation of the research is the Technology Acceptance Model, the Theory of Budgeting, and the Theory of Cost Reduction. Mean, mode, and median were utilized to assess the data as descriptive statistics. The study also utilized inferential statistics, such as regression analysis and the Pearson correlation coefficient. Utilizing statistical tables, charts, and bar graphs, the data were presented. The data was examined using SPSS (version 17). According to the report, IFMIS is widely implemented in Trans Nzoia County, where it has led to substantial gains in tax collection and a narrower gap between projected and actual spending. IFMIS has accomplished several objectives, including enhancements in transparency and accountability, enhanced public trust in administration, strengthened financial management, and decreased risk. It was determined that Trans Nzoia County has the capacity to enhance internal controls and responsibility management, as well as establish and execute positive institutional processes.

Mwarangu (2018) sought to analyze the impact of various IMS tools, including the System applications and Processes (SAP) Enterprise Resource Planning system (ERP), the Electronic Weighment System (EWS), the Electronic Document Management System (EDMS), and the automated Fleet Management System (AFMS), on the productivity of the Kenya Tea Development Agency's orthodox tea production project. The Kangaita, Mununga, and Kimunye Tea factories were selected as the sites for this research because they were all under the management of the Kenya Tea Development Agency (KTDA). Descriptive research was employed to collect this extensive data for the study. Among the 430 responders were 26 managers, 149 designated workers, and 255 regular workers from the three tea facilities administered by the KTDA. A total of 131 participants were chosen as responders, which is equivalent to 30% of the population of interest. In this research, we used a multistage sampling

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strategy. The respondents from each stratum were chosen using simple random sampling. A questionnaire with both closed and open-ended questions was used to gather primary data. Descriptive statistics like means, proportions, and frequencies; inferential statistics like correlation coefficients, regression lines, and analyses of variance (ANOVA); and the Statistical Package for the Social Sciences were used to examine the data (SPSS). Graphs and tables were used to display the findings. A number of Information Management Systems (IMS) were found to have significantly boosted the efficiency of the orthodox tea project in KTDA. These included the System applications and Processes (SAP) Enterprise Resource Planning system, the Electronic Weighment System, the Electronic Document Management System, and the Automated Fleet Management System.

Theoretical Framework

This section looked at the theoretical underpinning of the study by specifically reviewing the Delone and McLean IS Model.

Delone and Mclean IS Success Model

DeLone and McLean (1992) developed the first model of information systems success, which was based on Shannon and Weaver's (1949) communication theory. DeLone and McLean's model has distinct characteristics that are defined by two fundamental concepts: system quality and information quality. The way the system is used has a direct performance on how individuals perform. This effect may eventually have an effect on the performance of the organization. It was one of the first studies to impose some order on the success measures chosen by information systems researchers. The model is based on theoretical and empirical studies undertaken in the 1970's and 1980's by a number of researchers. DeLone and McLean developed the model by conducting a survey of 100 papers that contained empirical IS success measures and were published in seven journals between 1981 and 1987. They synthesized the resulting vast array of information system success metrics into an integrated picture of information system success, represented by the six dimensions below: System Quality, Information Quality, Information Use, User Satisfaction, Individual Impact, and organizational Impact.

While the model incorporates all of the dependent variables utilized by information systems researchers, it has faced various criticisms. De Lone and McLean (1992) conducted a review of the studies published between 1981 and 1987 and developed a taxonomy of information systems success based on their findings. They defined six criteria or components of successful information systems in their 1992 paper: system quality, information quality, utilization, user satisfaction, individual impact, and organizational effect (Petter, De Lone & McLean, 2008). The current study used a taxonomy of MIS success measures based on the De Lone and McLean

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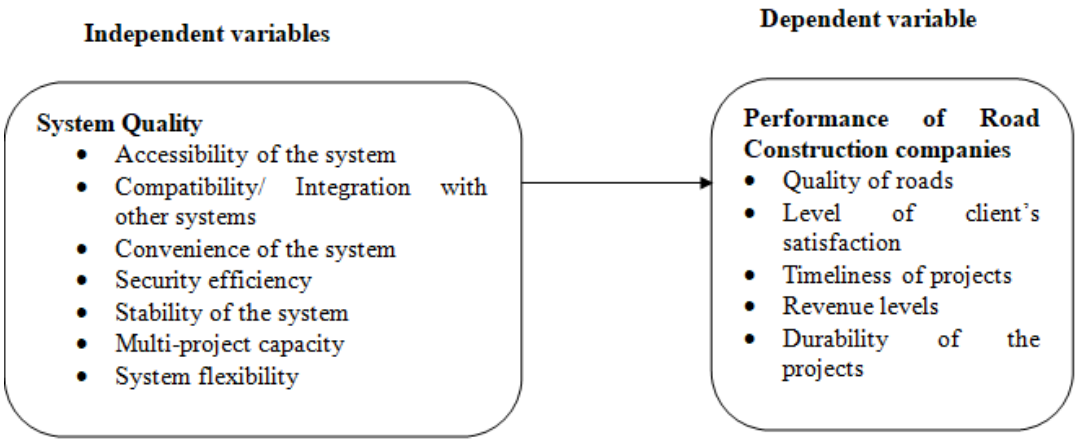
study and a literature review. Six characteristics or components of MIS success were identified in this study: MIS quality, information quality, top management support, perceived usefulness, decision maker satisfaction, and managerial decision-making quality. It is assumed that system quality has an effect on project performance and that there is a direct relationship between the quality of information and managerial decision making.

According to De Lone and McLean (1992), numerous researchers have employed Use as an objective metric for determining a system's success. The conclusion is that if a system is implemented, it must be beneficial and thus successful. However, inactivity does not always indicate that a system is ineffective; it may just indicate that the potential user has more pressing tasks to complete. Because the general concept of use as a metric of information system success makes more sense when applied to voluntary or discretionary users rather than captive users, this construct (use) was excluded from the created model (Visser, Biljon & Herselman, 2019).

According to Seddon (1997), the important factor for determining if an information system is successful is not system utilization, but rather that net benefits should come from use. He contends that a good system will bring benefits such as assisting the user in accomplishing more or better work in the same amount of time, or in taking less time to accomplish the same amount of work with the same quality as previously accomplished. Thus, perceived usefulness is a subjective indicator of the extent to which a stakeholder believes that implementing a certain technology has improved his or her work performance. This theory emphasizes the critical nature of system quality in terms of performance. As a result, the study employed this theory to determine the influence of system quality on the performance of road construction projects in Nyandarua County.

Conceptual Framework



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3.0 Methodology

The study employed a descriptive research design in order to determine the influence of project management information systems on the performance of road construction projects in Nyandarua County, Kenya. The objective of a descriptive design was to ascertain the frequency with which something occurs or the relationship between variables (Bryman & Bell, 2017). Thus, this strategy was appropriate for this study, as the study's objective was to collect detailed data via descriptions that aided in identifying factors. According to Polit and Beck (2019), descriptive study involves the observation, counting, delineation, and classification of phenomena. Additionally, they define descriptive research studies as those that focus on the accurate representation of the features of individuals, circumstances, or groups, and/or the frequency with which particular events occur.

3.1 Target Population

The population in this study is the total number of local construction projects which are registered by NCA as roads and civil works contractors. Local road construction projects who had been awarded road projects by the Kenya Urban Roads Authority (KURA), Kenya National Highways Authority (KeNHA),Kenya Rural Roads Authority (KeRRA) and the county government in Nyandarua County within the last five years (2021-2021) were involved in the study. From the records available with the Nyandarua County Engineer's department, there were 62 fully registered local road contractors operated in the region for the period covered. The management staff in the companies formed the study population. The target population of the study was project managers, construction managers and project supervisors.

Table 1 Target Population

Department	Total Number	Percentage
Project managers	62	20.5
Construction managers	101	33.4
Project supervisors	139	46.0
Total	**302**	**100**

3.2 Sample Size and Sampling Procedures

The sampling procedure for this study was governed by the mixed method research design. A sample is a study of a population chosen with the goal of drawing conclusions about the population (Larossi, 2021). A sample population of 169 was determined by computing the target population of 302 with a 95 percent confidence level and a 0.05 error using the formula below,

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which was adapted from Kothari (2004).

$$n = \frac{z^2.N.\partial_p^2}{(N-1)e^2 + z^2\partial_p^2}$$

Where; n = Size of the sample,

N = Size of the population and given as 406,

e = Acceptable error and given as 0.05,

∂p = The standard deviation of the population and given as 0.5 where not known,

Z = Standard variate at a confidence level given as 1.96 at 95% confidence level.

The sample size fits within the minimum of 30 proposed by Saunders, Lewis and Thornhill (2018).

Table 2 Sampling Frame

Department	Population	Ratio	Sample
Project managers	62	0.56	35
Construction managers	101	0.56	57
Project supervisors	139	0.56	78
Total	**302**		**169**

3.3 Sampling Procedures

The respondents for the study was chosen using a stratified proportionate random sampling technique. Stratified random sampling is an unbiased sampling technique that involves segmenting a diverse population into homogeneous subsets and then selecting members from each subset to ensure representativeness. The purpose of stratified random sampling was to obtain the necessary representation from the population's various subgroups. Subjects are chosen in stratified random sampling in such a way that existing subgroups in the population are more or less represented in the sample (Kothari, 2018). Additionally, the approach divides the population into a number of relevant strata, implying that the sample is more representative (Saunders et al., 2019).

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4.0 RESEARCH FINDING AND DISCUSSION

4.1 System Quality

The purpose of the study was to determine how much system quality affects the efficiency of road building projects in Nyandarua County. The study targeted 169 respondents out of which only 130 respondents returned the questionnaires dully filled. This represented a response rate of 76.8% which is above 50% and is considered significant response rate for as statistical analysis as prescribed by Krosnick (2018). Respondents were asked to rate how much they believed system quality had an impact on the success of road building projects in Nyandarua County. The data is displayed in Table 3.

Table 3

	Frequency	Percent
Not at all	16	12.3
Little extent	29	22.3
Moderate extent	32	24.6
Great extent	29	22.3
Very great extent	24	18.5
Total	**130**	**100.0**

According to the findings, 24.6% of respondents said that system quality had a moderate effect on the performance of road construction projects in Nyandarua County, Kenya; 22.3% said it had a slight effect; 22.3% said it had a great effect; 18.5% said it had a very great effect; and 12.3% said it had no effect at all. The research indicated that system quality has a moderate impact on the outcomes of road building projects in Kenya's Nyandarua County.

4.1.1 Aspect of system quality

The respondents were further required to indicate the extent to which the aspects of system quality affect performance of road construction projects in Nyandarua County, Kenya. The findings are presented on Table 4

Table 4

	Mean	Std. Dev.
Accessibility of the system	2.928	0.509
Compatibility/ Integration with other systems	4.072	0.886
Convenience of the system	3.165	0.731

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Security efficiency	4.516	0.792
Stability of the system	3.845	0.960
Multi-project capacity	4.722	0.887
System flexibility	3.227	0.504

The results showed that the respondents believed that multi-project capacity (with a mean score of 4.722) and security efficiency (with a mean score of 4.516) significantly affected the success of road building projects in Nyandarua County. The respondents also noted that the stability of the system (shown by a mean score of 3.845) and compatibility/integration with other systems (shown by a mean score of 4.072) had significant impacts on the success of road development projects in Nyandarua County.

Road building projects in Nyandarua County were shown to be moderately affected by respondents' ratings of system flexibility (mean score:3.227), convenience (3.165), and accessibility (mean score: 2.928).

Additionally, respondents were prompted to highlight how the higher quality of the system boosted the efficiency of regional road building initiatives. They mentioned that quality of the system is essential for the roles of functioning, performance, and support. A reliable system facilitates all of these tasks, as well as control, decision-making, and planning.

4.2 Regression Analysis

Multiple regression analysis allows researchers to assess the strength of the relationship between the dependent variable and several predictor variables. Performance of road construction projects in Nyandarua County was used as the dependent variable, and regression analysis was used to determine the relationship between the independent variables of system quality, quality of information generated by the system, perceived usefulness of the system, and ease of use of the system, and the dependent variable.

Table 5 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.878	0.771	0.764	0.880

These results demonstrate the extent to which the model equation matches the data. The predictive power of the study model was calculated using the adjusted R and found to be 0.764, indicating that shifts in system quality, quality of information generated by the system, perceived

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usefulness of the system, and ease of use account for 76.4% of the variations in performance of road construction projects in Nyandarua County.

Table 6 ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	334.609	4	83.652	105.402	4.41E-39
Residual	99.206	125	0.794		
Total	**433.815**	**129**			

When it comes to predicting how the system's quality, the system's information quality, the user's perceived usefulness of the system, and the user's ease of use affect the performance of road construction projects in Nyandarua County, the probability value of 4.41E-39 indicates the regression relationship is highly significant. Since the estimated F was larger than the F-critical (value = 2.4442), and the p-value was smaller than 0.05, the entire model was significant.

Table 7 Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	9.279	1.918		4.838	0.000
System quality	0.828	0.244	0.735	3.393	0.001

The regression equation obtained from this outcome was: -

$Y = 9.279+0.828\mathbf{X_1}+0.694\mathbf{X_2}+0.751\mathbf{X_3} + 0.807\mathbf{X_4}$

Based on the findings of the research, it was determined that road building projects in Nyandarua County may expect to achieve a success rate of 9.279 if all independent variables are maintained constant at zero. According to the results, improving the quality of the system by one unit will boost the efficiency of road building projects in Nyandarua County by 0.828 percent. The null hypothesis that there is no significant association between system quality and performance of road development projects in Nyandarua County was rejected since p=0.001 is less than 0.05.

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Moreover, the research showed that the efficiency of road building projects in Nyandarua County will vary by 0.694 for every unit change in the quality of the information supplied by the system. Given that the p-value for the variable was less than 0.05, it was determined that there was a strong correlation between the quality of the information supplied by the system and the success of road building initiatives in Nyandarua County.

5.0 Conclusions

Results showed that the quality of the system has a large and beneficial impact on the success of road building initiatives in Kenya's Nyandarua County. Researchers came to the conclusion that high-quality systems are crucial to successful project management because they produce the kind of reliable data that managers require to get the job done well.

The research also found that the quality of the system's information significantly improved the efficiency of road building projects in Kenya's Nyandarua County. According to the findings, the system's primary function is to supply the project team with correct and trustworthy data so that they may complete their work in a timely manner. What is important is the quality of the data the system produces, not the sophistication of the software used to make the predictions. The managers of the road development projects in Nyandarua County may now do their work in a more informed and efficient fashion thanks to this data.

The study also found that the success of road building initiatives in Kenya's Nyandarua County was positively impacted by the residents' perceptions of the system's utility. The study concluded that the advantages to user performance and the systems overall productivity and effectiveness are linked to the user's perception of the system's usefulness. Greater project planning, scheduling, monitoring, and control are only some of the ways in which the managers' efforts have proven more fruitful and efficient recently. Timely decisions are also a contributing factor to increased production.

Results showed a good and statistically significant correlation between system usability and the success of road building projects in Nyandarua County, Kenya. The research found that a product's ability to decrease support requests by their exceptional user-friendliness might save a significant amount of money. Less time and money will be wasted on complaints and mistakes if the project team has an easy time navigating the system.

5.1 Recommendation of Study

Based on the results of the study, it is recommended that the management of road construction projects in Nyandarua County improve the quality of their PMIS in terms of software adaptability, software availability, software reliability, software response time, usability, and

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maintainability in order to improve the performance of road construction projects. As a first step, businesses should use a PMI-supported PMIS to better oversee their projects. For the simple reason that they may enhance project management. Software developers should collaborate closely with road building projects to allow the features that matter most to the project.

Project management information systems (PMIS) are encouraged for use in the administration of road building projects. Better project management is guaranteed by the high quality of the data collected and analyzed by the PMIS. It is important for road building projects to use the accurate, timely, and relevant data supplied by PMIS in order to make quality judgments.

Findings from the research also suggest that, prior to and during the course of a project's execution, banks should provide training for all team members involved. Employees' dedication to PMIS will be strengthened as a result.

5.2 Suggestion for Future Study

Further studies are recommended especially on the challenges facing road construction projects in adoption of project management information systems.

There is also need to study more of project management information systems factors that affect the performance of road construction projects.

Further, a similar study needs to be done but that considers other counties. Other studies should consider other types of projects.

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