

EFFECT OF RESOURCE PLANNING ON PERFORMANCE OF ROAD PROJECTS FUNDED BY BOMET COUNTY GOVERNMENT, KENYA

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Abstract: The integration of economic development needs with the enhancement of residents' quality of life is essential and can be achieved through infrastructure initiatives, particularly in road construction. In Bomet County, a significant portion of the population experiences insufficient access to roadways. Commonly identified issues affecting the road sector's performance in Bomet County include mismanagement of funds, project delays, and subpar service delivery to road users, despite the substantial financial resources provided by the government in its various budgets. This study employed a descriptive research methodology. The target population consisted of 203 employees, which included five county officials from the County Roads, Public Works, and Transport Department, fifty-two project managers, and fourteen members of the project management committee. A total of 52 projects were utilized to randomly select 112 respondents through stratified sampling. This group comprised project managers, project management committee members, and county officials from the Department of Roads, Public Works, and Transportation. Primary data was collected using questionnaires designed in a semi-structured format. The research yielded both qualitative and quantitative findings. The validity and reliability of the research instrument were evaluated through pilot testing. Descriptive statistics were applied to analyze the quantitative data, which was encoded and entered into SPSS (Version 24), while the qualitative data were examined thematically. Additionally, a regression analysis was performed to determine the correlation between the dependent variable and the independent variables. The results are presented through tables, charts, and graphs. Various ethical considerations were meticulously assessed throughout the experiment to ensure the reliability of the results. The correlation analysis indicated a robust and statistically significant positive relationship ($r=0.650$, $p=0.000$) between resource planning and the success of road projects. The study recommends that Bomet County Government should make sure that the roads projects in the County have the funding the funding complete them. The county administration should use rigorous resource management procedures to guarantee the effective execution of road development projects.

Keywords: Resource Planning, Project Performance.

1. INTRODUCTION

The alignment of economic growth objectives with the improvement of residents' quality of life requires the execution of infrastructure projects, particularly in the realm of road construction. Approximately one billion people worldwide lack adequate access to transportation infrastructure. This deficiency not only restricts individual mobility but also obstructs their capacity to benefit from advancements. The improvement of rural infrastructure is crucial and involves the development of new and upgraded roadways. Providing safe, affordable, accessible, and environmentally sustainable transportation systems for economically disadvantaged individuals is vital in the fight against poverty. Enhanced road infrastructure promotes better communication and increases transportation safety. This development has profound implications for health, education, and economic opportunities (Onyango, Bwisa, & Orwa, 2017).

In most cases, it is the responsibility of the government to take on the primary role in financing expensive road development projects. As noted by Abdi (2020), the existence of well-maintained road infrastructure within a nation can foster economic growth, reduce poverty, and create job opportunities and wealth. The state of a country's infrastructure plays a crucial role in its economic development and advancement. Liu et al. (2020) report that the Indian government has invested significant resources in improving high-quality infrastructure to attract both domestic and international investors. The authors suggest that businesses are more likely to leave a location due to poor infrastructure rather than be drawn to an area because of superior infrastructure. Furthermore, Khurmi et al. (2020) indicate that Canadian policymakers continue to utilize projects as their primary strategy for promoting foreign development.

Worldwide, construction initiatives have demonstrated inadequate performance and have not fulfilled stakeholder expectations, primarily due to a lack of compliance with established project criteria. A survey carried out by IBM in 2018 regarding project management reform indicated that only around 40% of projects were completed successfully within their designated timelines, scopes, and budgetary limits. Further analysis revealed that, on average, these 1,471 completed projects required 200% more time and 70% more financial resources than originally planned.

The availability of resources plays a pivotal role in shaping the scope and schedule of road infrastructure projects (Kerzner & Kerzner, 2017). To effectively oversee the resources required for significant road infrastructure enhancements in Australian counties, there is a need for a model that is both sophisticated and adaptable (Poiani & Stead, 2015). This necessity arises from the fact that counties are engaged in multiple initiatives simultaneously, leading to competition for limited resources. Denmark's implementation of advanced resource management strategies facilitates the more efficient utilization of its constrained resources (Tyagi et al., 2020). According to Pinha and Ahluwalia (2019), the majority of public infrastructure projects exceed their budgets and timelines due to ineffective resource management.

To avert financial setbacks for construction firms, it is essential to reduce the wastage of project resources during construction processes (Schaufelberger & Holm, 2017). The ineffective allocation and use of resources within the construction sector adversely affect project performance in multiple areas, including adherence to schedules, financial results, budget management, quality control, and overall efficiency. As noted by Agenda (2016), the standardization of project resources significantly influences the decision-making processes of funding departments in the United Kingdom. In this regard, the implementation of resource management practices is crucial in the dynamic environment of construction projects, as it enhances service delivery and productivity. Effective resource management across various construction initiatives requires the adoption of comprehensive strategies, which may include the incorporation of advanced information technologies. Such strategies are vital in addressing challenges related to limited resource availability, supply delays, cost fluctuations, damage and waste management issues, and insufficient material storage space.

Despite the thorough investigation of this matter across Africa, a satisfactory solution remains elusive. Mugwagwa and Banda (2009) highlight that the efficient management of resources continues to be a persistent challenge for projects in Botswana, Egypt, Zambia, and South Africa. Saleh et al. (2019) indicate that project management methodologies frequently contribute to delays in construction projects in Libya, thereby adversely affecting overall project results. The prevalence of this issue is further emphasized by Aibinu and Odeyinka (2016) as well as Amusan, Dolapo, and Joshua (2017) in the context of Nigeria. The findings of the study indicate that enhancing resource management practices has a significant positive effect on project performance, particularly regarding efficiency and timeliness. Additionally, the study's third objective successfully demonstrated a strong positive correlation between resource management and the performance of construction projects. Therefore, it is recommended that any nation aiming to enhance the effectiveness of its construction initiatives consider adopting resource management strategies similar to those implemented in Rwanda.

Awulachew (2019) emphasizes the critical importance of careful resource management in construction projects, given their far-reaching consequences. This assertion is especially pertinent in the Ethiopian context. The inherent unpredictability of construction projects compels project managers to navigate complex scheduling challenges, particularly in balancing resource limitations with optimal resource utilization. The author further noted that the importance of scheduling is especially evident in construction projects, which are marked by complex resource allocation patterns that contribute to uncertainty and increased risks. Consequently, the success of a project relies on the adoption of effective resource management strategies, which require judicious resource allocation to prevent potential delays.

The construction sector in Kenya, akin to its counterparts in other nations, is widely acknowledged as a vital driver of both economic growth and social progress. As noted by Dolo (2011), a key determinant of a project's success lies in its completion within the stipulated time frame and budget, while ensuring the satisfaction of all stakeholders and preventing unexpected cost escalations. The primary emphasis has been on construction initiatives led by the national government and state-owned enterprises. It is expected that over 70% of ongoing projects in Kenya will face schedule delays exceeding 50%, thereby underscoring the inadequate time and cost efficiency of projects in the nation. Additionally, Rugenyi (2016) has estimated that approximately 50% of all projects are likely to experience cost overruns surpassing 20%.

The government, as the principal executor of major public road initiatives, holds the responsibility for ensuring their thorough and effective execution, especially when substantial financial investments have been allocated for this purpose (Yeri, 2018). Instances of delays, inferior quality, and budget overruns exemplify the inadequate performance often seen in road infrastructure projects, leading to a reduction in the social and economic benefits that nations could otherwise realize (Kagiri & Wainaina, 2017). To alleviate the uncertainties linked to various limiting factors or constraints, infrastructure projects may benefit from the application of resource management principles. The successful realization of capital-intensive road projects in Bomet County necessitates a meticulous assessment of the resources needed for the execution of each task within the road infrastructure initiative.

The issue of insufficient project performance has been a persistent challenge, often resulting in dissatisfaction among project advocates, including stakeholders and beneficiaries. Researchers, practitioners, and organizational leaders have made significant efforts to create a thorough definition of project success. Nevertheless, despite the extensive discussions, surveys, and recommendations, a universally accepted definition remains elusive. Performance is assessed from multiple perspectives, reflecting the varied interests of stakeholders such as donors, beneficiaries, and internal efficiency, as noted by Sushma, Bhavya, Rajeeva, and Narayan (2017). Evaluating performance is a vital component in the pursuit of enhanced outcomes. Optimal performance signifies the sustainable achievement of various objectives, which may often be at odds with each other, while remaining responsive to changing circumstances. Although assessing project performance may seem straightforward, it involves the careful monitoring and evaluation of elements such as time, cost, and scope.

Shenhar and Holzmann (2017) characterize project success as the realization of objectives within the established budget and timeframe. This evaluation criterion has consistently served as the primary metric in various industries. Nevertheless, in the realm of development projects, success encompasses more than merely meeting time and budgetary constraints. It involves the effective delivery of expected benefits and the satisfaction of the needs of recipients, stakeholders, funders, or financing entities. However, determining these success indicators poses a challenge, as many factors can only be evaluated retrospectively, often several years post-project completion. Additionally, numerous organizations face difficulties in conducting these assessments, primarily due to constraints in funding.

As stated by Kerzner (2018), resource management involves the organized distribution and utilization of all available materials in an efficient manner, taking into account time limitations, to successfully execute projects and deliver high-quality results. To effectively implement the strategic plan and meet corporate goals and financial objectives, it is essential to allocate resources appropriately and use them judiciously, especially concerning the workforce. The involvement of human resources is vital for the successful execution and management of projects. Therefore, the effective conduct of project operations requires a diverse set of information, skills, attitudes, cultural viewpoints, and ethical standards within a capable workforce.

A significant challenge faced in construction projects is the insufficient management of resources and materials, which leads to disruptions in various project activities. Therefore, it is essential to develop a decentralized, coordinated, and controlled system for tracking and monitoring resources within organizations. Additionally, establishing a site-specific framework that promotes awareness and accountability is vital. The Agenda (2016) emphasizes the importance of effectively managing the three fundamental resources in construction: financial capital, machinery, and human labor. The project implementation process involves executing the actions outlined in the application form to achieve project goals and deliver the anticipated outcomes and outputs. The successful realization of these objectives depends on a range of internal and external factors. A well-structured project and an ample supply of resources are deemed critical determinants (Dixit et al., 2021). Ndayisaba and Mulyungi (2018) have consistently observed that inadequate resource planning and management significantly contribute to project failures. The importance of resource scheduling cannot be overstated, as it

plays a pivotal role in ensuring the successful attainment of project objectives through effective workforce planning and resource allocation.

Resource planning is a systematic approach that involves the identification, forecasting, and allocation of various organizational resources to projects, thereby ensuring their timely availability and cost-effectiveness (Biruk, 2022). Additionally, it facilitates the optimal and effective distribution of resources throughout the organization. Yesodharan and Mansinghka (2021) assert that corporate resources encompass a wide range of elements, which may include, but are not limited to, human resources, equipment, assets, and facilities. The practice of resource planning is a widely adopted strategy that plays a crucial role in ensuring the success of various infrastructure projects. The application of rigorous methodologies, processes, and technologies provides substantial evidence to support this assertion. To effectively mitigate potential financial and other adverse impacts that could impede the achievement of project goals, it is essential for project managers to employ planning techniques that enhance the efficiency of resource allocation. This strategy aims to minimize both idle time and excessive resource consumption, thereby alleviating negative consequences. The Work Breakdown Structure (WBS) is widely acknowledged as a valuable planning tool in the existing body of literature.

Bomet County, located in the southwest region of Kenya, faced considerable challenges with its road infrastructure. Residents encountered difficulties reaching their homes, workplaces, and educational institutions due to the poor condition of many roads. Recognizing the urgent need for enhancements in road infrastructure, the administration of Bomet County initiated several road development initiatives. The first of these projects involved the construction of a new 50-kilometer road linking a local village to Bomet, the county's capital. This road was designed with various safety features, including guardrails and lighting, and was sufficiently wide to accommodate two-way traffic. The completion of this road marked a significant milestone for Bomet County, symbolizing the government's commitment to improving the living standards of its residents. The second project focused on the renovation of the county's existing roadways, which included updating outdated signage and road markings, improving drainage systems, and repairing damaged sections of the roads. These improvements made travel safer and more convenient for residents, contributing to a reduction in accident rates. The final phase of the project involved constructing several bridges and culverts to replace those that had been destroyed by heavy rainfall. This initiative greatly benefited the rural communities of Bomet County by facilitating access to essential services such as schools and markets.

The residents of Bomet County experienced considerable changes in their lives due to the road development projects. These initiatives not only improved the economy by enabling businesses to transport goods and services more efficiently but also made travel safer and more convenient for individuals. The achievements of these projects highlighted the government's commitment to improving public welfare and underscored the essential role of road infrastructure in promoting sustainable development.

2. STATEMENT OF THE PROBLEM

According to the County Integrated Development Plan for the period from 2017 to 2022, the administration of Bomet County initiated several road projects aimed at addressing the existing deficiencies in road infrastructure. In alignment with the initial County Integrated Development Plan (CIDP), the county embarked on a gravelling project spanning 1,815 kilometers. Despite the substantial financial resources allocated for road infrastructure development—amounting to Kshs 1.36 billion in the fiscal year 2017–2018 and Kshs 1.256 billion in 2019–2020—the county's primary focus remained on improving connectivity to key destinations from Bomet town, resulting in the gravelling of 415 kilometers (Bomet County Integrated Development Plan 2017–2022). The monitoring and evaluation indicators reveal that only one Bus Park was constructed between 2014 and 2018. Furthermore, public satisfaction regarding the transportation and road networks was found to be below average. The Monitoring and Evaluation (M&E) report for the initial five years of devolution indicates that the county successfully reduced travel time and costs by twenty-four percent, as noted in the First County Integrated Development Plan (CIDP). Additionally, the study highlights a 13% reduction in transportation costs for products reaching the market.

The road construction sector in Bomet County encounters numerous challenges, including inadequate financial management, delays in project completion, and substandard service delivery to road users. Despite substantial funding from the government, these issues are often identified as primary factors contributing to the underperformance of the road sector. As a result of these circumstances, approximately one billion individuals globally face restricted access to road infrastructure.

3. LITERATURE REVIEW

Theoretical Literature Review

Constraints Theory

Goldratt (1984) asserts that the theory of constraints suggests that every manageable system is limited in its capacity to achieve its objectives by a small number of constraints, with at least one constraint being unavoidable. This theory is based on the premise that the speed at which a goal is reached is hindered by the existence of at least one constraining process. Simsit et al. (2014) further indicate that the overall throughput can only be enhanced by increasing the flow through the identified constraint. The theory outlines the most effective strategies for addressing these limitations, as well as the underlying causes of system constraints. Organizations employ systematic methods to function effectively. A system can be characterized as a collection of distinct yet interconnected processes that work together to transform inputs into outputs while striving to achieve specific goals. The limitations of this system act as obstacles that prevent it from progressing towards the fulfillment of organizational objectives (Tulasi & Rao, 2012).

Given the limited resources available to project teams in various countries engaged in road infrastructure development, the theory of constraints is particularly relevant to this issue. Addressing these challenges to eliminate barriers in the execution of road projects is the most effective approach to managing such problems (Ofori, 2013). Effective resource management is essential for the successful implementation of road projects and should be approached in a manner that enhances their overall success. One significant challenge hindering project success is the inadequate and inefficient allocation of resources across project activities. These constraints play a critical role in project completion failures, resulting in inefficiencies and delays that can escalate project costs. Proponents of this theory emphasize the importance of project teams identifying limitations and developing effective strategies to address these constraints early on, thereby mitigating their impact on road construction initiatives (Aryanezhad et al., 2012).

This theory acts as a framework for both broad and specific research aims within this study. It is crucial for addressing the dependent variable, which is project performance. To ensure the effective execution of road projects in Bomet County, it is necessary to mitigate any limitations that could adversely affect project outcomes, such as the quality of the constructed roads. The theory underscores the significance of project management in identifying potential constraints that may influence a project's performance and in implementing suitable measures to mitigate these issues. Consequently, this theory will guide the assessment of resource management challenges that could impact the success of road construction initiatives in Bomet County. Despite its extensive application, the Theory of Constraints (TOC) has faced criticism from various quarters, making it essential to carefully evaluate its strengths and weaknesses before determining its suitability for your organization.

A primary criticism of the Theory of Constraints (TOC) is its limited scope. Critics argue that the TOC overlooks other crucial factors that can influence a system's performance, such as human dynamics, market conditions, and external factors, as it primarily focuses on identifying and managing constraints within a system (Hopp & Spearman, 2004). Hopp and Spearman (2004) assert that this focus on constraints may lead to a neglect of the broader organizational context and the complex interrelationships among various system components.

Another point of contention regarding the TOC is its rigidity. While the TOC provides a structured approach to constraint management, some argue that it may not be suitable for all business types and can be difficult to apply in real-world scenarios (Eisingerich & Fuchs, 2008). Eisingerich and Fuchs (2008) suggest that the TOC's focus on quantifiable metrics and reliance on a singular bottleneck may render the system overly simplistic and less responsive to evolving circumstances.

Empirical Literature Review

Anwar and Munir (2021) examined the impact of well-structured resource management on the results of construction projects in Pakistan. Their findings indicated that effective resource planning positively influences various project outcomes, such as budget adherence, scheduling, and overall quality. The authors emphasized the importance for project managers to prioritize resource planning to ensure optimal allocation and utilization of resources.

Purohit and Dubey (2021) investigated the role of resource planning in construction projects within India. Their study revealed that resource planning plays a crucial role in determining project outcomes, particularly in terms of timely

delivery, cost management, and product quality. The authors recommended that project managers focus their efforts on developing a comprehensive resource plan that encompasses all available resources while addressing potential risks and uncertainties..

Huang and Lin (2021) investigated the relationship between resource planning and project success within Taiwan's construction industry. Their findings indicated that effective resource planning had a substantial impact on project outcomes, including adherence to timelines, cost management, and the quality of the final product. The authors emphasized the importance of prioritizing resource planning for project managers to ensure efficient allocation and utilization of resources. Zhang et al. (2021) examined the performance of construction projects in China following the implementation of resource planning. Their study concluded that effective resource planning was instrumental in achieving project success regarding budget adherence, scheduling, and quality of output. The authors recommended that project managers develop comprehensive resource plans that encompass all necessary tools and include provisions for unforeseen challenges. Chuan and Chin (2021) explored the role of strategic resource management in enhancing the success of construction projects in Malaysia. Their research revealed that resource planning significantly influenced project outcomes, such as timeliness, cost control, and product quality. The authors reiterated the necessity for project managers to prioritize resource planning to ensure efficient resource allocation and utilization. Ali et al. (2022) examined the impact of resource planning on construction projects in the United Arab Emirates. Their findings indicated that effective resource planning was vital for project success in terms of budget, schedule, and output quality. The authors advised project managers to create detailed resource plans that consider all available tools and account for potential unexpected challenges.

To effectively plan, schedule, and optimize resource utilization in India, Sushma, Bhavya, Rajeeva, and Narayan (2017) examined the use of Primavera in road construction projects. Their findings indicated that resource preparation is crucial for construction endeavors, as it aids in minimizing and managing project disruptions. The report highlighted that the construction industry incurs significant losses in time, finances, and other resources annually due to inadequate resource planning. The study emphasized that as construction projects become larger and more complex, the role of project planning software becomes increasingly essential for ensuring effective planning and a smooth flow of resources, thereby facilitating the achievement of project objectives. However, it is important to note that since the research was conducted in a different context that may present unique challenges compared to Bomet County, the applicability of the findings may be limited.

Shadrack (2018) examined the elements influencing contractors' strategies for resource planning within the Nairobi metropolitan region of Kenya. The study employed descriptive research methodologies. It was determined that resource planning is often utilized in the industry, albeit in a largely unstructured manner. The findings indicated that delays in the availability of materials and equipment, along with staff shortages during critical periods, continued to adversely affect the advancement of county construction projects. The research highlighted that labor, material, and equipment planning were more frequently utilized and endorsed by senior management in contracting firms. Although the findings were noteworthy, they cannot be generalized, as the study concentrated on construction projects initiated by private developers, differing from road projects executed within the county of Bomet.

Khisa and Mutuku (2023) examined the link between critical success factors and the performance of completed construction projects at the National Social Security Fund in Nairobi, Kenya. A descriptive research design was used to collect and analyze data from 512 stakeholders involved in six completed projects. A purposive sampling method selected 84 participants, and data was gathered through semi-structured questionnaires. Analysis with SPSS revealed an R-square value of 0.282 and an R value of 0.531. ANOVA results were significant ($p=0.001$, $F=9.961$), confirming the model's appropriateness. Key factors influencing NSSF construction project performance included client variations ($p=0.05$), financial availability ($p=0.047$), and construction disputes ($p=0.001$).

4. RESEARCH METHODOLOGY

This study employed a descriptive research methodology. The target population consisted of 203 employees, which included five county officials from the County Roads, Public Works, and Transport Department, fifty-two project managers, and fourteen members of the project management committee. A total of 52 projects were utilized to randomly select 112 respondents through stratified sampling. This group comprised project managers, project management committee members, and county officials from the Department of Roads, Public Works, and Transportation. Primary data

was collected using questionnaires designed in a semi-structured format. The research yielded both qualitative and quantitative findings. The validity and reliability of the research instrument were evaluated through pilot testing. Descriptive statistics were applied to analyze the quantitative data, which was encoded and entered into SPSS (Version 24), while the qualitative data were examined thematically. Additionally, a regression analysis was performed to determine the correlation between the dependent variable and the independent variables. The results are presented through tables, charts, and graphs. Various ethical considerations were meticulously assessed throughout the experiment to ensure the reliability of the results.

5. FINDINGS

The participants were requested to express their degree of agreement regarding statements concerning the allocation of resources for road improvement projects undertaken within the county. A five-point Likert scale was provided to the subjects for this purpose.

Table 1: Resource Planning

Statements	SD	D	N	A	SA	Mean
	%	%s	%	%	%	
The budget for road projects in Bomet County was accurately forecasted.	1.1	24.4	18.9	51.1	4.4	3.30
Resources required for road projects in Bomet County were properly identified.	4.4	12.2	18.9	55.6	8.9	3.52
Resources available for road projects in Bomet County met the project requirements	7.8	26.7	34.4	26.7	4.4	2.93
Resources were prioritized effectively in road projects in Bomet County.	4.4	22.2	24.4	34.4	14.4	3.32
There was a well-defined contingency plan in place for managing unexpected resource challenges in road projects in Bomet County.	6.7	28.9	17.8	43.3	3.3	3.08
Average score	4.9	22.9	22.9	42.2	7.1	3.23

The data shown in Table 1 demonstrates that resource planning had a moderate influence on the performance of road projects in Bomet County, as seen by the average mean of 3.23. The poll findings revealed that, on average, 7.1% of the respondents highly agreed, 42.2% agreed, 22.9% stayed neutral, 22.9% disagreed, and 4.9% severely disagreed. The statistics revealed that a substantial majority of the participants concurred with all the assertions pertaining to resource planning, on average. Abu El-alkass (2017) did research on resource management in building projects for contractors in the Gaza strip. The study revealed that equipment planning is crucial for identifying the necessary types and sizes of equipment. This include the acquisition or rental of equipment, which aids in managing the expenses associated with equipment in building endeavors.

Table 4.3 shows that the average value of 3.52 for the resources needed for road upgrades in Bomet County was highly indicative of correct resource identification. The following percentages of respondents: 8.9% strongly agreed, 55.6% agreed, 18.9% were unsure, 12.2% disagreed, and 4.4% very disagreed with the statement. Almost half of those who took the survey agreed with the assertion that Bomet County had properly determined the resources that would be required to complete road construction. With an average score of 3.32, the county's road projects were making reasonable use of available resources. Only 14.4% of those who took the survey found this statement to be very agreeable; 34.4% found it to be somewhat agreeable; 24.4% were unsure; and 22.2% and 4.4%, respectively, were vehemently opposed. Nearly 40% of people who took the survey agreed with the assertion. The results show that respondents were ambivalent about the assertion that the estimated budget for road building in Bomet County is reasonable, with a mean score of 3.30. Still, 51.1% of people who took the survey agreed with the statement. The following percentages of respondents: 4.4% strongly agreed, 51.1% agreed, 18.9% were unsure, 24.4% disagreed, and 1.1% very disagreed with the statement.

The average of 3.08 indicated that respondents were impartial regarding the presence of a clearly defined contingency plan for handling unforeseen resource issues in road developments in Bomet County. 3.3% of the respondents highly agreed with this statement, whereas 43.3% agreed, 7.8% were indifferent, 28.9% disagreed, and 6.7% severely disagreed. A majority of the respondents, specifically 43.3%, expressed agreement with the statement. The average of 2.93 suggests that the respondents were neutral to the statement that the available resources for road projects in the county met the project requirements. Approximately 34.4% of the respondents had a neutral stance towards the statement.

Results of Inferential Analysis

Table 2: Correlation Analysis

		Resource planning	Project performance
PTE	Pearson Correlation	1	.650**
	Sig. (2-tailed)		.000
	N	90	90

According to the results in table 4.11, revealed that resource planning has a very strong positive influence on the performance of road construction projects ($r = 0.650$, $p = 0.650$). This value indicates a strong positive correlation, implying that improvements in the quality and effectiveness of resource planning are likely to lead to corresponding enhancements in the performance of road construction projects.

Regression Analysis Results

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.816 ^a	.665	.650	.45373

The findings reveal that the adjusted r value stands at 0.650, indicating that 65.0% of the variation in project performance can be attributed to resource planning.

Table 4: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.070	.258		.271	.001
	Resource planning	.179	.096	.179	1.860	.001

Table 4 reveals the coefficient of regression summary model given in the equation below.

$$Y = 0.070 + 0.179(\text{resource planning})$$

The research further demonstrated that resource planning exerted a significant positive impact on project performance, with a standardized coefficient (β) of 0.179 and a p-value of 0.001. This indicates that effective resource planning is associated with improved outcomes in project execution and delivery.

6. CONCLUSIONS

The research indicates that a primary benefit of resource planning is its role in enabling county governments and organizations to effectively assess the resources necessary for road construction. This planning process facilitated the mobilization of resources essential for the successful completion of road projects, taking into account the availability and capacity of those resources. The findings revealed a positive and statistically significant correlation between resource planning and the successful execution of road construction initiatives. Furthermore, the study concluded that resource planning had a beneficial and significant effect on the performance of road projects.

7. RECOMMENDATIONS

The study suggests that the County conduct regular assessments of the road infrastructure's current condition and identify areas that require immediate attention. Community surveys, traffic studies, and road condition assessments of the past are all examples of this. Participate in the planning process with the local communities to make sure that their wants and needs are taken into account. Better project acceptance and utilization may result from this. Make a long-term financial plan that divides resources among several years for road projects, allowing for better financial forecasting and stability.

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