ISSN 2348-3156 (Print)
International Journal of Social Science and Humanities Research ISSN 2348-3164 (online)
Vol. 14, Issue 4, pp: (134-144), Month: October - December 2026, Available at: www.researchpublish.com

Participatory Project Planning and Performance of Road Construction Projects in Nairobi City County, Kenya

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DOI: https://doi.org/10.5281/zenodo.23498043

Published Date: 20-October-2026

Abstract: **Road construction projects in Nairobi City County are characterised by schedule delays, cost overruns and quality shortfalls, with over 40% of major road projects reported to be delayed and over budget. This study examined the influence of participatory project planning on the performance of road construction projects in Nairobi City County, Kenya. Specifically, it assessed the influence of participatory goal setting, participatory resource planning, participatory scheduling and participatory risk assessment on project delivery performance. The study was anchored on Systems Theory, Stakeholder Theory and the Resource-Based View. Descriptive and explanatory research designs were adopted. The target population comprised 208 contractors, project managers, engineers and community representatives drawn from 52 road projects implemented by the Kenya Urban Roads Authority (KURA) in the 2019/20 to 2021/22 financial years. Using Slovin's formula and stratified random sampling, a sample of 136 respondents was selected, of whom 110 returned usable questionnaires (80.9% response rate). Data were analysed using SPSS Version 25 through descriptive statistics, Pearson correlation and multiple linear regression, while open-ended responses were analysed thematically. The four predictors jointly explained 79.6% of the variation in project delivery performance ($R^2 = 0.796$). Participatory goal setting ($\beta = 0.594$, $p < 0.05$), participatory scheduling ($\beta = 0.401$, $p < 0.05$), participatory risk assessment ($\beta = 0.395$, $p < 0.05$) and participatory resource planning ($\beta = 0.254$, $p < 0.05$) each had a positive and significant influence on performance. The study concludes that stakeholder participation in project planning is a significant determinant of road project performance. It recommends that KURA and project managers involve all stakeholders, including community members, in setting objectives and indicators, estimating task durations and assessing risks, and that budgeting be made transparent.**

Keywords: **Participatory Project Planning, Goal Setting, Resource Planning, Project Scheduling, Risk Assessment, Road Construction Projects, Project Performance, Nairobi City County, Kenya.**

1. INTRODUCTION

Road networks are central to economic growth, linking people and goods to markets, jobs and social services. Governments worldwide have invested heavily in road construction over the past two decades, yet more than half of such projects underperform, with many exceeding their budgets, overrunning their schedules or failing to meet quality standards (Umulisa, Mbabazize & Shukla, 2018). Evidence from several countries links these shortfalls to weak stakeholder involvement at the planning stage. In England, stakeholder participation in local and regional planning reduced implementation time and improved project quality (Baker, Hincks & Sherriff, 2018), while participatory planning has been associated with better infrastructure project performance in Malaysia (Waris, Khan & Ullah, 2022).

In Africa, roads remain the dominant mode of transport, yet much of the network is unpaved and less than half of the rural population has reliable access to all-weather roads (Noori, 2017). Insufficient stakeholder engagement has been identified as a leading cause of design changes, delays, cost increases and rework in Ethiopia (Bassa et al., 2019), and participatory

planning has been shown to shape project outcomes in Guinea (Magassouba et al., 2019). In Kenya, roads carry about 80% of passenger and cargo traffic (Rankonyana, 2018), and stakeholder engagement during planning has been found to be critical to the successful completion of urban road projects (Matu et al., 2020; Githinji, Ogolla & Kitheka, 2020).

Despite these investments, road works in Nairobi City County continue to perform poorly. Over 40% of major road projects in the county are reported to be delayed and over budget (Odongo, 2020; Karuga, Sang & Mutuku, 2024), while 30% fail to realise their expected benefits and about half do not meet quality criteria (Mongina & Moronge, 2021). Prior Kenyan studies have examined participatory planning in community development (Musyoki, Kisimbii & Kyalo, 2020), informal settlement upgrading (Njeru, 2018) and water projects (Diing et al., 2022), but few have examined how stakeholder participation across the components of project planning affects the delivery of urban road projects.

This study therefore sought to determine the influence of participatory project planning on the performance of road construction projects in Nairobi City County, Kenya. Four specific objectives guided the inquiry: (i) to examine the influence of participatory goal setting on project performance; (ii) to assess the influence of participatory resource planning on project performance; (iii) to establish the influence of participatory project scheduling on project performance; and (iv) to determine the influence of participatory risk assessment on project performance.

2. LITERATURE REVIEW

2.1 Theoretical Framework

The study was anchored on three theories that together explain why stakeholder participation in planning should shape road project outcomes.

Systems Theory (Von Bertalanffy, 1972) views an organisation or project as a set of interrelated parts that interact with one another and with their external environment. Road projects are open systems that continuously exchange information and resources with government agencies, regulators, suppliers and communities (Valentinov, Hielscher & Pies, 2016). Design, planning and execution failures often arise from weak feedback loops among these parties. The theory explains how goal setting, resource allocation, scheduling and risk control interact to determine overall project performance, and why broad participation in each produces better-coordinated decisions.

Stakeholder Theory (Freeman, 1984) holds that organisations are accountable to, and depend on, a wide range of individuals and groups whose interests must be considered for long-term success (Gaziyev, 2019; Uribe, Ortiz-Marcos & Uruburu, 2018). Applied to road projects, it explains how engaging contractors, engineers, project managers and community representatives in planning improves the legitimacy and quality of decisions. The theory underpinned the examination of participatory scheduling and participatory risk assessment, in which stakeholder knowledge widens the range of activities and risks identified.

The Resource-Based View (Wernerfelt, 1984) argues that performance depends on how well an organisation acquires, combines and deploys its tangible and intangible resources and capabilities (Wijethilake & Ekanayake, 2018). In road construction, the theory frames the examination of how the participatory identification, mobilisation and allocation of labour, finance, materials and equipment affects value for money, timeliness and workmanship.

2.2 Participatory Goal Setting and Project Performance

Participatory goal setting is a collaborative process through which managers, team members and other stakeholders negotiate consensus on project objectives before implementation (Groen, 2018). It involves needs assessment, formulation of objectives and identification of performance indicators (Noori, 2017). Magassouba et al. (2019) found that stakeholder participation in goal setting improved development project outcomes in Guinea, while Githinji et al. (2020) found that stakeholder participation in setting goals and objectives influenced project performance at Kenya Ferry Services. In Kakamega County, Mwanza, Namusonge and Makokha (2020) found that stakeholder involvement in defining objectives positively affected construction project performance, although beneficiary participation remained low. Ngala (2019) linked shifts in project objectives to the completion of road projects in Lang'ata Sub-County but did not examine stakeholder involvement. These studies were confined to other sectors or narrower settings, leaving the urban road context largely unexamined.

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2.3 Participatory Resource Planning and Project Performance

Resource planning involves systematically determining and mobilising the types and quantities of personnel, finance, materials and equipment needed to execute project activities (Umulisa et al., 2018). Tsurkan, Sotskova and Oksana (2016) showed that participatory budgeting supports infrastructure development in Russia, while Akinbile et al. (2016) found that community involvement in mobilising financial and human contributions drove the success of rural water projects in Nigeria. In Kenya, Owili and Paul (2021) found that resource planning influenced the time and cost performance of hospital infrastructure projects in Nairobi County, and Abdi (2020) established that resource planning, allocation and monitoring influenced road project performance in Wajir County. Ndavi (2019) similarly linked resource planning to construction project performance in Nairobi but did not examine the role of stakeholders.

2.4 Participatory Project Scheduling and Project Performance

Participatory scheduling engages stakeholders in identifying, prioritising and estimating the duration of the tasks needed to achieve project goals (Matu et al., 2020; Kinyata & Abiodun, 2020). Al-Keim (2017) found that managing stakeholder approvals at the design stage minimised later changes and helped control cost and time in United States construction projects. Suresh and Sivakumar (2019) reported that comprehensive schedule management plans improved project management effectiveness. Matu et al. (2020) found a strong association between stakeholder participation in activity scheduling and the completion of urban road projects in Kenya, though only community members were surveyed, while Chepng'eno and Kimutai (2021) found that schedule planning improved road project performance in Kericho County but focused on engineers and contractors.

2.5 Participatory Risk Assessment and Project Performance

Participatory risk assessment involves stakeholders in identifying, characterising and planning responses to events that could affect project time, cost or quality (Kinyua & Ogollah, 2019; Amoah & Pretorius, 2020). Otaalo, Muchelule and Asinza (2019) found that risk identification and analysis significantly influenced the performance of road projects in Kakamega County, and Nyarangi, Ogolla and Kitheka (2021) established a positive relationship between risk identification, assessment, mitigation and control and the performance of borehole projects in Mombasa County. Amoah and Pretorius (2020), however, found that small construction firms in South Africa lacked formal risk management processes. None of these studies examined stakeholder participation as part of risk assessment in urban road projects.

3. RESEARCH METHODOLOGY

The study adopted descriptive and explanatory research designs. The descriptive design characterised participatory planning practices and project performance, while the explanatory design tested the cause-and-effect relationships between the variables (Babbie, 2017). Both quantitative and qualitative data were collected.

The target population comprised 208 key informants drawn from 52 road construction projects implemented by the Kenya Urban Roads Authority (KURA) in Nairobi City County during the 2019/20, 2020/21 and 2021/22 financial years: 52 contractors, 52 project managers, 52 engineers and 52 community representatives. Using Slovin's formula, $n = N / (1 + Ne^2)$, at a 5% margin of error, a sample of 136 respondents was obtained. Stratified random sampling was used to select 34 respondents from each stakeholder category.

Primary data were collected between October and December 2022 using a semi-structured questionnaire with five-point Likert-scale items (1 = Strongly Disagree, 5 = Strongly Agree) and open-ended questions, administered on a drop-and-pick-later basis; project records were obtained from KURA. The instrument was pre-tested on 14 respondents (10% of the sample) in Kiambu County. Face and content validity were established through review by project management experts and the research supervisor, and all constructs exceeded the 0.70 Cronbach's alpha threshold (Table 1).

Quantitative data were analysed using SPSS Version 25 through descriptive statistics (frequencies, percentages, means and standard deviations) and inferential statistics (Pearson correlation and multiple linear regression). Open-ended responses were analysed thematically. The regression model was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

where Y is project delivery performance, X_1 participatory goal setting, X_2 participatory resource planning, X_3 participatory scheduling, X_4 participatory risk assessment, β_0 the constant, β_1–β_4 the regression coefficients and ε the error

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term. Regression assumptions were tested before analysis. Shapiro-Wilk tests indicated that all variables were normally distributed ($p > 0.05$; Table 1), the Durbin-Watson statistic of 1.869 indicated no autocorrelation, and variance inflation factors of 1.316 to 1.623 ruled out multicollinearity. Ethical approval was obtained from Kenyatta University and a research licence from NACOSTI; participation was voluntary and responses were anonymised.

Table 1: Reliability and Normality Tests

Variable	Cronbach's α	Shapiro-Wilk W	Sig.
Participatory goal setting	0.873	0.987	0.115
Participatory resource planning	0.789	0.981	0.097
Participatory scheduling	0.821	0.985	0.101
Participatory risk assessment	0.807	0.976	0.064
Project delivery performance	0.781	0.969	0.061

Source: Research Data (2023)

4. FINDINGS AND DISCUSSION

Of the 136 questionnaires distributed, 110 were returned, a response rate of 80.9%, covering 34 of the 52 targeted projects. Most respondents were male (61.8%), aged 31–40 years (41.8%), and held a bachelor's degree (69.1%), suggesting that they had the experience and education needed to comment on the planning and delivery of road projects.

4.1 Participatory Goal Setting and Project Performance

Respondents rated their agreement with nine statements on participatory goal setting. Results are presented in Table 2.

Table 2: Mean Ratings for Participatory Goal Setting

Item	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	SD
All project team members are involved in needs assessment	21.8	3.6	16.4	54.5	3.6	**2.37**	0.92
Involvement of team members has helped to prioritise resources	29.1	43.6	16.4	7.3	3.6	**3.87**	1.03
Satisfied with team members' participation in needs assessment	10.9	14.5	61.8	9.1	3.6	**3.20**	0.89
All team members are involved in developing objectives	29.1	7.3	9.1	50.9	3.6	**2.25**	1.00
The project targets set are achievable	14.5	29.1	41.8	10.9	3.6	**3.40**	0.99
Developing objectives gives team members clear paths to the desired output	23.6	52.7	23.6	0.0	0.0	**4.00**	0.69
All project members are involved in identifying indicators	21.8	0.0	27.3	50.9	0.0	**2.15**	0.70
Indicators are vital in evaluating and communicating progress	34.5	41.8	23.6	0.0	0.0	**4.11**	0.76
Identifying indicators ensures projects proceed as planned	18.2	69.1	12.7	0.0	0.0	**4.05**	0.56

Source: Research Data (2023)

Respondents agreed that performance indicators are vital for evaluating and communicating progress (mean = 4.11), that identifying indicators keeps projects on track (mean = 4.05) and that well-developed objectives give team members a clear path to the desired output (mean = 4.00). However, they disagreed that all team members were involved in identifying indicators (mean = 2.15), developing objectives (mean = 2.25) or assessing needs (mean = 2.37). Thus, while stakeholders valued clear goals and indicators, participation in setting them was limited. Open-ended responses stressed that involving stakeholders in goal setting promotes collective decision-making and should take place early, and that project objectives should reflect the varied interests of stakeholders and partner organisations.

ISSN 2348-3156 (Print)
International Journal of Social Science and Humanities Research ISSN 2348-3164 (online)
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Correlation analysis showed a strong, positive and significant relationship between participatory goal setting and project performance ($r = 0.877$, $p < 0.01$), and regression analysis confirmed it as the strongest predictor of performance ($\beta = 0.594$, $p < 0.05$; Table 7). A unit improvement in participatory goal setting was associated with a 0.594-unit improvement in performance. These findings agree with Magassouba et al. (2019), Mwanza et al. (2020) and Githinji et al. (2020), who found that stakeholder involvement in goal setting improves project results, and with Ngala (2019), who argued that clear objectives give projects the direction needed for success. From a systems perspective, agreeing goals with stakeholders aligns the project with the forces in its environment.

4.2 Participatory Resource Planning and Project Performance

Table 3 presents respondents' ratings of participatory resource planning.

Table 3: Mean Ratings for Participatory Resource Planning

Item	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	SD
Team members identify the types and quantities of resources needed	23.6	36.4	32.7	7.3	0.0	**3.76**	0.90
Satisfied with team members' part in identifying resource requirements	16.4	34.5	49.1	0.0	0.0	**3.67**	0.74
Identifying resource requirements has aided appropriate budgeting	29.1	38.2	32.7	0.0	0.0	**3.96**	0.79
Team members are involved in resource mobilisation	21.8	49.1	23.6	5.5	0.0	**3.87**	0.81
Involvement in mobilisation ensured timely, economical acquisition	12.7	34.5	40.0	9.1	3.6	**3.44**	0.95
Resource mobilisation has facilitated project continuity	10.9	34.5	32.7	16.4	5.5	**3.29**	1.04
Budgeting is done in a transparent and honest manner	7.3	18.2	5.5	60.0	9.1	**2.54**	1.11
Proper procedures exist for allocating resources	21.8	56.4	21.8	0.0	0.0	**4.00**	0.66
Resource allocation has prevented under- or over-utilisation	0.0	10.9	36.4	38.2	14.5	**2.44**	0.87

Source: Research Data (2023)

Respondents agreed that their organisations had proper procedures for allocating resources (mean = 4.00), that identifying resource requirements supported appropriate budgeting (mean = 3.96), and that team members were involved in resource mobilisation (mean = 3.87) and in identifying the types and quantities of resources needed (mean = 3.76). They were neutral on whether participation in mobilisation ensured timely and economical acquisition (mean = 3.44) and project continuity (mean = 3.29). They disagreed that budgeting was transparent and honest (mean = 2.55) and that allocation prevented under- or over-utilisation of resources (mean = 2.44). Respondents explained that participatory resource planning is not only about mobilising and dividing resources but about matching personnel, expertise, finance and materials to the work to be done.

Participatory resource planning was strongly and positively correlated with performance ($r = 0.808$, $p < 0.01$) and had a positive and significant effect in the regression model ($\beta = 0.254$, $p < 0.05$). This is consistent with Owili and Paul (2021) and Abdi (2020), who found that planning human, financial and material resources improves the time, cost and quality of infrastructure projects, and with Akinbile et al. (2016) and Tsurkan et al. (2016) on participatory mobilisation and budgeting. In line with the Resource-Based View, sharing knowledge among stakeholders enables more efficient allocation of project resources.

ISSN 2348-3156 (Print)
International Journal of Social Science and Humanities Research ISSN 2348-3164 (online)
Vol. 14, Issue 4, pp: (134-144), Month: October - December 2026, Available at: www.researchpublish.com

4.3 Participatory Project Scheduling and Project Performance

Results on participatory scheduling are presented in Table 4.

Table 4: Mean Ratings for Participatory Project Scheduling

Item	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	SD
Community members help identify tasks that produce key results	18.2	45.5	23.6	9.1	3.6	**3.65**	1.00
Task identification allows community members to assess the project	23.6	40.0	27.3	5.5	3.6	**3.75**	1.00
Satisfied with community participation in task identification	10.9	27.3	47.3	9.1	5.5	**3.29**	0.97
The organisation gives the most important tasks highest priority	25.5	41.8	23.6	7.3	1.8	**3.82**	0.96
Task prioritisation minimises time wastage and boosts productivity	10.9	43.6	36.4	5.5	3.6	**3.53**	0.90
Satisfied with how tasks are prioritised	5.5	47.3	23.6	14.5	9.1	**3.25**	1.07
Community members help estimate task durations	0.0	14.5	21.8	54.5	9.1	**2.42**	0.85
Duration estimation helps predict activity costs and meet goals	29.1	54.5	10.9	5.5	0.0	**4.07**	0.79
Projects are completed on time	0.0	20.0	36.4	40.0	3.6	**2.73**	0.82

Source: Research Data (2023)

Respondents agreed that estimating task durations enabled their organisations to predict activity costs and achieve set goals (mean = 4.07), that the most important tasks were prioritised (mean = 3.82), and that community members took part in identifying key tasks (mean = 3.65), which allowed them to assess the project (mean = 3.75). They were neutral on whether prioritisation minimised time wastage (mean = 3.53) and on their satisfaction with community participation in task identification (mean = 3.29) and with task prioritisation (mean = 3.25). Respondents disagreed that projects were completed on time (mean = 2.73) and that community members helped estimate task durations (mean = 2.42). Open-ended responses indicated that involving community members in identifying project activities helped align them with project objectives and supported timely implementation within budget.

Participatory scheduling was strongly correlated with performance ($r = 0.841$, $p < 0.01$) and had a positive and significant effect in the regression model ($\beta = 0.401$, $p < 0.05$). This agrees with Matu et al. (2020) and Adhan and Mutuku (2023), who linked stakeholder participation in scheduling to the completion of urban road projects, with Suresh and Sivakumar (2019) and Kinyata and Abiodun (2020) on the value of detailed schedules, and with Al-Keim (2017), who showed that managing stakeholder approvals early reduces variations during construction.

4.4 Participatory Risk Assessment and Project Performance

Table 5 presents respondents' ratings of participatory risk assessment.

Table 5: Mean Ratings for Participatory Risk Assessment

Item	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	SD
Team members have adequate skills to identify project risks	10.9	23.6	36.4	9.1	0.0	**3.76**	0.99
Early identification of risks facilitates their control	27.3	41.8	30.9	0.0	0.0	**3.96**	0.77
Satisfied with efforts put into risk identification	29.1	38.2	23.6	9.1	0.0	**3.87**	0.94

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Item	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	SD
Project managers understand frequency and severity of risk effects	21.8	49.1	25.5	3.6	0.0	**3.89**	0.78
Team members are trained on the nature and extent of risk impacts	25.5	49.1	20.0	5.5	0.0	**3.94**	0.82
Satisfied with team knowledge of risk severity to exposed populations	16.4	49.1	25.5	9.1	0.0	**3.73**	0.84
The organisation has outlined risk mitigation strategies	21.8	50.9	16.4	10.9	0.0	**3.84**	0.89
Each individual is assigned a responsibility in case of risk	18.2	54.5	21.8	5.5	0.0	**3.85**	0.78
The organisation has proper equipment to respond to risks	10.9	20.0	54.5	9.1	5.5	**3.22**	0.95

Source: Research Data (2023)

Respondents agreed that early identification of risks facilitates their control (mean = 3.96), that team members had been trained on the nature and extent of risk impacts (mean = 3.95), that project managers understood the frequency and severity of risk effects (mean = 3.89), that responsibilities were assigned for risk response (mean = 3.85) and that mitigation strategies had been outlined (mean = 3.84). They were, however, neutral on whether their organisations had proper equipment to respond to risks (mean = 3.22). Respondents noted that stakeholder participation makes it possible to identify early the risks, activities and events that could affect project success, which supports completion within budget.

Participatory risk assessment was strongly correlated with performance ($r = 0.872$, $p < 0.01$) and had a positive and significant effect in the regression model ($\beta = 0.395$, $p < 0.05$). The findings support Otaalo et al. (2019) and Nyarangi et al. (2021), who found that risk identification, analysis, mitigation and control improve project performance, and Kinyua and Ogollah (2019), who linked risk management to project performance. Consistent with Stakeholder Theory, involving stakeholders broadens the range of risks identified. The neutral rating on response equipment echoes Amoah and Pretorius (2020), who found that many construction firms lack formal means of acting on identified risks.

4.5 Performance of Road Construction Projects

Respondents' ratings of project delivery performance are presented in Table 6.

Table 6: Mean Ratings for Performance of Road Construction Projects

Item	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	SD
Projects are always completed within the specified time	0.0	16.4	21.8	49.1	12.7	**2.42**	0.91
Some projects take more time than required	29.1	52.7	18.2	0.0	0.0	**4.11**	0.68
Satisfied with the time taken to complete projects	0.0	7.3	20.0	54.5	18.2	**2.16**	0.81
Projects are completed within the specified budgets	0.0	16.4	25.5	43.6	14.5	**2.44**	0.93
Some projects incur cost overruns	36.4	40.0	16.4	7.3	0.0	**4.05**	0.91
Most projects are left uncompleted due to insufficient budget	43.6	29.1	18.2	9.1	0.0	**4.07**	0.99
Our projects are of good quality	25.5	50.9	16.4	7.3	0.0	**3.94**	0.84
The quality of projects has improved over the years	27.3	54.5	10.9	7.3	0.0	**4.02**	0.82
There have been few complaints about project quality	29.9	45.5	16.4	9.1	0.0	**3.94**	0.91

Source: Research Data (2023)

ISSN 2348-3156 (Print)
International Journal of Social Science and Humanities Research ISSN 2348-3164 (online)
Vol. 14, Issue 4, pp: (134-144), Month: October - December 2026, Available at: www.researchpublish.com

Respondents agreed that some projects take longer than planned (mean = 4.11), that most incomplete projects stall for lack of funds (mean = 4.07) and that some projects incur cost overruns (mean = 4.05). They disagreed that projects were completed on time (mean = 2.42) or within budget (mean = 2.44), and were dissatisfied with completion times (mean = 2.16). Quality was rated more favourably: respondents agreed that projects were of good quality (mean = 3.95), that quality had improved over the years (mean = 4.02) and that there had been few complaints about quality (mean = 3.95). Time and cost, rather than quality, are therefore the main performance gaps in Nairobi's road projects.

4.6 Regression Analysis

Multiple linear regression was used to establish the joint and individual influence of the four participatory planning practices on project performance. Results are presented in Tables 7 and 8.

Table 7: Model Summary and ANOVA

Statistic	Value
R	0.892
R^2	0.796
Adjusted R^2	0.782
Std. error of the estimate	0.137
F (4, 105)	953.198
Sig.	0.000
Durbin-Watson	1.869

Source: Research Data (2023)

Table 8: Regression Coefficients

Predictor	B	Std. Error	Beta	t	Sig.	VIF
(Constant)	0.288	0.088	–	3.273	0.012	–
Participatory goal setting (X_1)	0.594	0.082	0.537	7.244	0.000	1.316
Participatory resource planning (X_2)	0.254	0.087	0.249	2.920	0.023	1.623
Participatory scheduling (X_3)	0.401	0.079	0.428	5.076	0.000	1.488
Participatory risk assessment (X_4)	0.395	0.102	0.398	3.873	0.001	1.472

Source: Research Data (2023)

The four predictors jointly explained 79.6% of the variation in road project performance ($R^2 = 0.796$), and the model was statistically significant ($p < 0.05$). All four practices had positive and significant coefficients, giving the fitted model:

$$Y = 0.288 + 0.594X_1 + 0.254X_2 + 0.401X_3 + 0.395X_4$$

Participatory goal setting had the largest effect, followed by participatory scheduling, participatory risk assessment and participatory resource planning. The remaining 20.4% of the variation in performance is attributable to factors not included in the model.

5. CONCLUSION

This study established that participatory project planning has a positive and statistically significant influence on the performance of road construction projects in Nairobi City County, Kenya. Together, participatory goal setting, resource planning, scheduling and risk assessment explained about four-fifths of the variation in project performance.

Participatory goal setting was the strongest predictor of performance, yet stakeholders were rarely involved in needs assessment, developing objectives or identifying indicators. Participatory resource planning improved performance, but budgeting was perceived as lacking transparency and resource allocation as inefficient. Participatory scheduling improved the predictability of costs and timelines, although community members were seldom involved in estimating task durations

and projects were often completed late. Participatory risk assessment was well established in terms of training, responsibilities and mitigation strategies, but was constrained by inadequate response equipment. Overall, road projects in the county performed reasonably well on quality but poorly on time and cost, and wider stakeholder participation in planning offers a practical route to closing these gaps.

6. RECOMMENDATIONS

6.1 Policy Recommendations

KURA and the Nairobi City County Government should institutionalise stakeholder participation in the planning of road projects, requiring contractors, engineers, project managers and community representatives to take part in needs assessment, objective setting and the identification of performance indicators before projects are approved for implementation.

KURA should adopt transparent budgeting and resource-allocation procedures, including disclosure of approved budgets to project stakeholders, to improve the timely and economical acquisition of resources and reduce under- and over-utilisation.

6.2 Practice Recommendations

Project managers should involve community members in identifying project activities and estimating task durations so that schedules reflect local conditions and projects stay on time. They should also equip project teams with the tools and equipment needed to respond to identified risks, and maintain proper records of planning decisions and stakeholder input.

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