



Community Workshops and Implementation of Road Maintenance Projects by Kenya National Highways Authority in South Rift Region, Kenya

N.K. Kiprop ¹, and D.M. Wanyoike

¹Student, ²Senior Lecturer

School of Business and Entrepreneurship

Jomo Kenyatta University of Agriculture and Technology

Kenya

ABSTRACT

*Effective engagement of the community in road maintenance projects promotes local needs and preferences, leading to more relevant and responsive initiatives. In particular, the community workshops cultivates a sense of ownership and collaboration among community members. This fosters trust between stakeholders and contributes significantly to the success and sustainability of road maintenance efforts. However, road maintenance projects in Kenya have continually demonstrated inadequate implementation with delays in repairs leading to extended road deterioration and increased safety risks. The present study examined the effect of community workshops, as a strategy of community engagement on the implementation of road maintenance projects in South Rift Region, Kenya. The study was grounded on stakeholder theory. A descriptive research design was adopted. The target population consisted of 28 road maintenance projects by KeNHA, South Rift Region. Both descriptive and inferential methods were applied in the analysis. In the descriptive analysis, means, percentages and standard deviations were employed. On the other hand, correlation and regression analysis were used in inferential analysis. The Statistical Packages for Social Sciences (SPSS) aided data analysis, and the findings were presented through tables. The descriptive findings indicated that community workshops play a vital role in the implementation of road maintenance projects by Kenya National Highways Authority. Correlation analysis revealed significant positive relationships between community workshops ($r = 0.744^{**}$, $p = 0.000$) and implementation of road maintenance projects. Regression analysis further demonstrated a strong overall relationship between community workshops and implementation of road maintenance projects. The coefficient of determination R^2 value of 0.554 indicated that 55.4% of the variation in road maintenance project implementation is explained by community workshops. The study concludes that community workshops enhance collaboration and coordination. They improve communication, accountability, and sustained involvement, ultimately strengthening the implementation of road maintenance projects. The study recommends Kenya National Highways Authority embed community workshops into operational framework to boost stakeholder alignment, and improve implementation of road maintenance projects.*

Key Words: Community Workshops, Community Engagement, Project Implementation, Kenya National Highways Authority.

1. INTRODUCTION

Community engagement in project management encompasses adopting proactive and inclusive methods to involve pertinent stakeholders, including local communities, in decision-making processes (Alqahtani, Salman, & He, 2024). It allows diverse voices to be considered, ensuring that outcomes reflect shared interests rather than isolated institutional priorities. Through fostering mutual trust, communities are more likely to support initiatives and actively participate in their implementation collaboration (Goodman, Zwick, Spicer, & Carlsen, 2020). This collaboration also enhances accountability, as stakeholders continuously monitor progress and contribute feedback. Ultimately, such an approach strengthens sustainability by aligning projects with community needs and long-term aspirations.

Within the community engagement strategy, community workshops represent a vital tactic within road maintenance projects, facilitating direct engagement among various stakeholders, including government officials, project managers, contractors, and residents (Bice & Jones, 2023). They serve as a platform for robust dialogue, fostering bidirectional communication and collaborative decision-making processes. Through such interactions, residents can voice concerns, offer valuable insights, and actively shape project plans, fostering a sense of ownership among community members (Alqahtani et al., 2024). This inclusive approach ensures that the diverse needs and preferences of residents are considered throughout the project implementation phase. The implementation of road maintenance projects transcends efficiency and effectiveness in preserving and enhancing road infrastructure. As Wang (2021) suggests, the success of these projects also hinges on considerations of sustainability, stakeholder contentment, and minimizing disruptions to the community and road users. Prioritizing sustainability practices, fostering positive stakeholder relationships, and implementing effective mitigation measures enable project managers to ensure that road maintenance projects fulfill immediate infrastructure needs.

In Kenya, the enhancement of transportation efficiency through road maintenance is managed by key government institutions, including the Ministry of Transport, Infrastructure, Urban Development, and Public Works. Oversight extends to national road agencies such as the Kenya National Highways Authority (KeNHA), Kenya Urban Roads Authority (KURA), and Kenya Rural Roads Authority (KeRRA), which coordinate strategies, development, and upkeep of road networks alongside county governments and private contractors (Kimeu, 2018). Active community engagement is essential in promoting participation, addressing local concerns, and integrating indigenous knowledge into projects (Bice & Jones, 2023). However, insufficient engagement often leads to low participation and exclusion from decision-making processes, driven by limited awareness and ineffective outreach initiatives (Matu et al., 2020). Consequently, the inadequate integration of community input contributes to delays, disputes, and ineffective execution of road maintenance projects, highlighting the need for transparent communication and meaningful stakeholder involvement throughout project implementation.

2. STATEMENT OF THE PROBLEM

Significant concerns have been raised regarding the implementation of road maintenance projects in Kenya, particularly evident through persistent delays in repairs, which exacerbate road deterioration and increase safety risks. The 2024 report by the Kenya National Highways Authority highlights that the Narok – Ngoswani road maintenance project, with a budget of Kshs. 310,116,470.37, commenced in July 2021 and was scheduled for completion by July 2024, yet this deadline has not been met. Similarly, the Ngoswani – Sekenani road project, allocated Kshs. 164,003,711.60, began in August 2021 and was expected to conclude by August 2024, but remains unfinished. In addition, the Emining – Marigat road project, valued at Kshs. 224,008,449.60, started in December 2020 with a planned completion date of December 2023, but this timeline was also missed. Furthermore, the Ngorengore vented drift project along Olulunga – Lamek, initially budgeted at Kshs. 21 million and expected to last nine months, extended over two years due to challenges such as water diversion and road cutting at both ends. These examples underscore the ongoing challenges in executing road maintenance projects efficiently. Wang (2021) emphasizes that community engagement is critical for project planning and smooth execution, as it ensures that local needs and perspectives are incorporated throughout the process. Despite this, previous research has inadequately addressed community workshops within road maintenance initiatives in Kenya. For instance, M'arimi (2019) investigated factors affecting the implementation of performance-based road maintenance projects under the Kenya National Highways Authority. The study considered public participation indicators such as evidence, level, and frequency of involvement, but it did not explore specific approach for fostering community participation. Similarly, Kimeu (2018) examined institutional factors influencing the performance of rural road maintenance projects in Machakos County, noting that the expertise of project teams, combined with robust monitoring and evaluation systems, significantly affects project outcomes. However, the study did not address the role of community workshops in enhancing project implementation. To bridge these gaps, the current study focused on assessing the effect of community workshops on the implementation of road maintenance projects by KeNHA in the South Rift Region of Kenya.

3. OBJECTIVE OF THE STUDY

The study's objective was to assess the effect of community workshops on the implementation of road maintenance projects in KeNHA, South Rift Region.

4. LITERATURE REVIEW

Community workshops within road maintenance projects foster active involvement of local residents in discussions, collaborative planning, and decision-making processes that directly relate to the upkeep of road infrastructure (Mahmood, Sabir, & Ali, 2020). Functioning as structured platforms, they allow residents, local leaders, and other stakeholders to present insights, raise concerns, and communicate preferences, thereby embedding local perspectives into project processes. A central aspect of these workshops is stakeholder alignment, where diverse groups such as residents and community leaders are brought together to pursue a unified vision and shared objectives, minimizing fragmentation and strengthening cohesion in project planning (Zafar, Shen, Zahoor, Xue, & Ekanayake, 2020). They also serve to harmonize differing viewpoints, ensuring that maintenance projects remain responsive to real community needs while cultivating collaboration and reducing potential conflicts that could obstruct progress.

Beyond alignment, workshops provide a foundation for capacity building, which Sohu, Jhatial, Ullah, Lakhiar, and Shahzaib (2018) emphasize as crucial in enhancing the knowledge and skills of local participants, enabling them to take on a more active role in the execution of road initiatives. This empowerment transforms residents from passive beneficiaries into contributors who reinforce ownership and accountability in project outcomes. Equally, the effectiveness of communication during these sessions cannot be overlooked, as clear, transparent, and consistent dialogue between project teams and stakeholders fosters trust, inclusivity, and cooperative problem-solving (Warsame, 2023). Such communication enhances clarity of expectations, reduces uncertainties, and strengthens collaboration, all of which are essential for seamless project execution.

As Zafar et al. (2020) observe, these workshops establish a well-organized setting in which participants can freely express opinions, engage in planning, and influence project direction, ensuring that initiatives align with local aspirations and practical realities. By embracing diverse perspectives and encouraging constructive dialogue, they guide projects toward outcomes that are both community-centered and sustainable. This collaborative approach not only enhances immediate implementation but also supports long-term success by nurturing trust, sustaining stakeholder commitment, and maintaining active involvement throughout the project lifecycle (Mahmood et al., 2020). Stakeholder theory emphasizes the critical influence stakeholders exert in shaping organizational decisions, policies, and strategic trajectories (Fares, Chung, & Abbasi, 2021). It encompasses a broad spectrum of actors ranging from individuals and groups to institutions who are affected by an organization's activities and outcomes. This acknowledges the complex interconnections between organizations and their external environment, highlighting that sustainable long-term success requires balancing and integrating the interests of multiple parties. In this sense, stakeholder theory stresses the necessity of strategies that not only ensure effective project implementation but also incorporate social responsibility and environmental stewardship as central to organizational performance.

Stakeholder theory advocates for prioritization of stakeholder contributions and mediating among competing interests, project managers foster greater alignment and secure broader support, thereby increasing the likelihood of project success. This ensures that projects create value not only for the organization but also for the wider stakeholder network. Within this framework, community workshops stand out as a practical community engagement strategy rooted in the principle of stakeholder inclusion (Spalek, 2024). Such workshops provide a platform for residents to directly influence decision-making processes, ensuring that project directions are responsive to the aspirations and needs of those most affected. Ultimately, the theory underscores the importance of expanding organizational focus beyond shareholders alone to embrace the full range of stakeholder interests. The conceptual framework illustrated in Figure 2.1 shows the relationship between community workshops and project implementation.

As demonstrated in the figure above, community workshops align diverse interests, allowing project goals to progress with fewer conflicts and smoother coordination. In the process, they strengthen local capacities, enabling communities to support implementation activities in ways that reinforce project continuity. The exchange of information within such forums quietly streamlines communication channels, reducing uncertainties that often slow execution. As a

result, the quality of work delivered tends to improve, and timelines experience fewer disruptions. In turn, efficient coordination and reduced setbacks contribute to the better use of resources, keeping operational costs from escalating during project implementation.

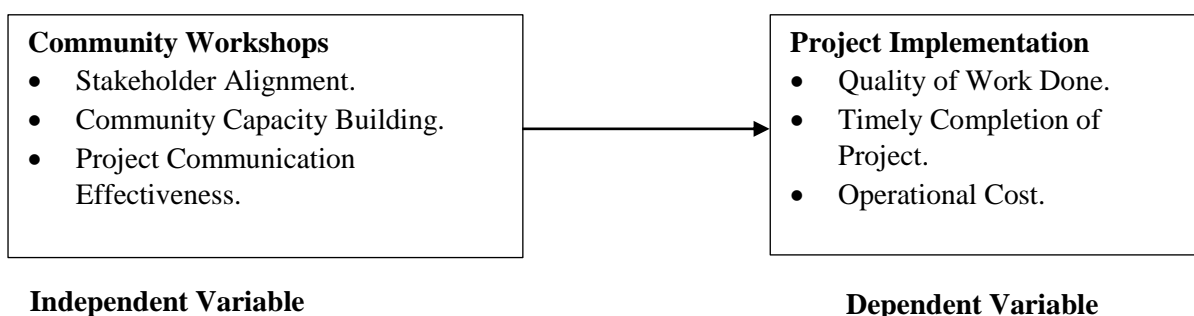


Figure 1: Conceptual Framework

Empirical studies related to community workshops and the implementation of road maintenance projects were reviewed. Matu, Kyalo, Mbugua, and Mulwa (2020) assessed the stakeholder participation in project planning among the urban road transport infrastructure projects in Kenya. The study employed a descriptive survey and correlational research design. The target population consisted of 1,593 individuals, from which a sample of 309 respondents was selected using purposive and simple random sampling techniques. The findings revealed that stakeholder participation in project planning had a positive and significant impact on the completion of urban road transport infrastructure projects in Kenya ($r = 0.838$, $R^2 = 0.703$, $F(4, 209) = 123.43$, $p < 0.001 < 0.05$). The R^2 value of 0.703 indicated that stakeholder participation in project planning accounted for 70.3% of the variation in the completion of urban road transport infrastructure projects in Kenya. The study concluded that stakeholder involvement in project planning significantly influences the successful completion of these infrastructure projects in the country.

M'arimi (2019) examined the factors impacting the implementation of performance-based road maintenance projects in the Kenya National Highways Authority Central Region. The results indicated that access to finance, staff competence, and public participation plays a substantial role in influencing the implementation of performance-based road maintenance projects. Maina (2019) assessed factors influencing road maintenance in Kenya, focusing on the Nairobi Thika highway improvement project. The study highlighted that the availability of funds, community participation, procurement procedures of contractors, and project managers' competency significantly impact road maintenance. Notably, the research concluded that project managers' competency exerted the greatest influence on road maintenance, followed by the availability of funds, and then community participation.

Akinyi (2022) investigated the capacity and implementation of performance road maintenance contract projects on class A roads in Kenya. The findings indicated that the contractor's construction experience exerted an 84.5% influence on the implementation of Performance-Based Contracts (PBC) on Class A Roads, while the contractor's financial capacity had a 90.2% influence, the technical capacity had a 79.2% influence, and the leadership capacity had a 78.5% influence. Collectively, all variables had a combined influence of 39.7% on the implementation of PBC contracts on Class A Roads in Kenya. Also in 2022, Kimanzi evaluated stakeholder involvement and the implementation of projects by the Kitui County Government in Kenya. The findings suggested that stakeholders' involvement had a positive and significant effect on the implementation of projects by the Kitui County government.

From above reviewed studies, research gaps were identified. M'arimi (2019) focused on public participation indicators like evidence, level, and frequency. The current study examined community workshops and how they influence implementation of road maintenance projects by KeNHA. Maina's (2019) research focused on factors such as the availability of funds, community participation, procurement procedures of contractors, and project managers' competency. However, it did not specifically explore the contributions of community engagement strategies such as community workshops in road maintenance projects, which has been covered in the current research. Additionally, Matu et al. (2020) highlighted stakeholder participation's impact on completing road projects in Kenya but did not

cover long-term sustainability or post-completion engagement. The current study addressed this by examining how stakeholder alignment, community capacity building, and project communication effectiveness affect both project completion and sustainability.

5. METHODOLOGY

A descriptive research design was utilized, to deliver a thorough and precise depiction of the characteristics, behaviors, or phenomena being evaluated. The target population was the 28 ongoing road maintenance projects managed by the Kenya National Highways Authority (KeNHA) within South Rift Region. Three respondents were selected from each of these ongoing projects, resulting in a total population of 84 respondents. These comprised the project manager, community representative and the contractor from each project. A census design was employed where all the respondents were included into the study. A structured questionnaire was utilized for data collection. This analysis applied both descriptive and inferential techniques. Descriptive analysis involved determining means, percentages, and standard deviations, while inferential analysis employed correlation and regression methods. The Statistical Packages for Social Sciences (SPSS) aided data analysis, and the results were presented by tables. For regression analysis, the following model was utilized as shown:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where;

Y = Project Implementation

β_1 = Beta Coefficient

β_0 = Constant

X_1 = Community Workshops

ε = Error of Margin

6. RESULTS

The study involved the participation of the project manager, a community representative, and the contractor from each of the 28 road maintenance projects. Consequently, 84 questionnaires were developed and distributed. From these, 61 were duly completed and returned, giving a response rate of 72.6%, which was regarded as adequate for the study. The descriptive and inferential statistical results have been discussed and interpreted to establish the effect of community workshops on implementation of road maintenance projects by Kenya National Highways Authority.

6.1 Descriptive Statistical Results

The study sought to establish the effect of community workshops on the implementation of road maintenance projects. The findings are presented in Tables 1 and 2:

Table 1: Effect of Community Workshops on Implementation of Road Maintenance Projects

	N	SA	A	N	D	SD	Mean	Std. Dev.
	Percentage (%)							
Community workshops address local concerns related to the project.	61	44.3	37.7	11.5	3.3	3.3	4.16	0.986
We conduct community workshops to keep residents informed.	61	50.8	34.4	9.8	4.9	0	4.31	0.847
Community workshops facilitate collaboration.	61	37.7	42.6	14.8	4.9	0	4.13	0.846
Active stakeholder involvement helps align project goals with community needs.	61	27.9	65.6	4.9	1.6	0	4.20	0.601
Participation in community workshops build relationships between project teams and residents.	61	24.6	37.7	19.7	13.1	4.9	3.64	1.141

The descriptive findings show that 44.3% of the respondents strongly agreed, while an additional 37.7% agreed, resulting in a total of 82% who expressed agreement (Mean=4.16; Std. Dev.=0.986) that community workshops address local concerns related to the project. It implied that community workshops enable KeNHA identify and resolve local issues early, ensuring that road maintenance projects address real needs. This leads to effective implementation, fewer conflicts, and stronger community support. Furthermore, 50.8% of respondents strongly agreed, with a further 34.4% expressing agreement, bringing the overall proportion of those who at least agreed to 85.2% (Mean=4.31; Std. Dev.=0.847) that they conduct community workshops to keep residents informed. This finding means that by organizing community workshops, the project team ensures that residents stay updated and aware of the project's progress. This transparency helps build trust and encourages ongoing community involvement. Additionally, 37.7% of the respondents strongly agreed and 42.6% also agreed hence 80.3% were in agreement (Mean=4.13; Std. Dev.=0.846) that community workshops facilitate collaboration. They create opportunities for different stakeholders to work together and share ideas. As a result, they promote teamwork and improve coordination throughout the project. In addition, 27.9% of respondents strongly agreed and 65.6% agreed, bringing the total to 93.5% who expressed agreement (Mean=4.20; Std. Dev.=0.601) that active stakeholder involvement helps align project goals with community needs. As such, the project's objectives better reflect what the community truly requires. This alignment increases the chances of the project being successful and well-supported. Although 37.7% of the respondents agreed that participation in community workshops build relationships between project teams and residents. This improved relationship encourages cooperation and smoother project progress. Overall, the findings revealed that community workshops enhance the implementation of road maintenance projects by KeNHA by improving communication, fostering collaboration, and building trust between the project team and community.

Table 2: Implementation of Road Maintenance Roads

	N	SA	A	N	D	SD	Mean	Std. Dev.
	Percentage (%)							
The project milestones are consistently achieved within the planned timelines.	61	45.9	45.9	8.2	0	0	4.38	0.637
We conduct regular operational cost reviews for effective control.	61	50.8	37.7	4.9	6.6	0	4.33	0.851
Financial resources are allocated and utilized effectively to achieve objectives.	61	49.2	42.6	8.2	0	0	4.41	0.642
Our tasks align with the quality requirements.	61	34.4	45.9	9.8	9.8	0	4.05	0.921
Adequate budget allocation is essential for addressing unexpected project expenses.	61	44.3	39.3	13.1	3.3	0	4.25	0.809

The findings shows that 45.9% of the respondents strongly agreed (Mean=4.38; Std. Dev.=0.637) that the project milestones are consistently achieved within the planned timelines. Additionally, it was established that 50.8% of the respondents strongly agreed and 37.7% concurred hence 88.5% at least agreed (Mean=4.33; Std. Dev.=0.851) that they conduct regular operational cost reviews for effective control. 49.2% of the respondents strongly agreed and 42.6% agreed hence 91.8% expressed agreement (Mean=4.41; Std. Dev.=0.642) that financial resources are allocated and utilized effectively to achieve objectives. The respondents also agreed (Mean=4.05; Std. Dev.=0.921) that their tasks align with the quality requirements. 44.3% of the respondents strongly agreed while 39.3% also agreed hence 83.6% in total agreed (Mean=4.25; Std. Dev.=0.809) that adequate budget allocation is essential for addressing unexpected project expenses. Overall, the findings established that implementation of road maintenance projects is affected by the community workshops. It was revealed that community workshops provide a platform for open dialogue between project implementers and local residents. This strategy helps in clarifying project goals, addressing concerns, and gathering feedback. They help in continuous monitoring, resolving conflicts, and keeping the

community informed. This consistent engagement improves accountability and transparency, which positively influences project implementation.

6.2 Inferential Analysis Results

Inferential analysis was performed to determine the relationship between community workshops and implementation of road maintenance projects by Kenya National Highways Authority. In this context, the correlation analysis and multiple regression statistical methods were utilized.

6.2.1 Correlation Analysis Results

Correlation analysis was conducted to assess the relationship between community workshops and implementation of road maintenance projects. The results are presented in Table 3:

Table 3: Correlation between Community Workshops and Project Implementation

		Project Implementation
Community Workshops	Pearson Correlation	.744**
	Sig. (2-tailed)	.000
	N	61

The correlation analysis results show that the relationship between community workshops and implementation of road maintenance projects was positive and significant ($r=0.744^{**}$; $p=0.000$). This means that enhancement of community workshops improves project implementation. The findings indicate that these workshops provide a collaborative platform where diverse actors clarify roles and expectations, reducing conflict and improving coordination. By providing community with relevant information, workshops build local capability to contribute meaningfully to maintenance efforts and support long-term sustainability. Additionally, they serve as effective channels for timely dissemination of project information, encouraging transparency and feedback while minimizing misunderstandings.

6.2.2 Regression Analysis Results

Regression analysis identifies the nature of the relationship between variables and allow predictions to be made. It helped to better understand how community workshops contributed to implementation of road maintenance projects by Kenya National Highways Authority. The results are presented in Tables 4, 5, and 6:

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.744 ^a	.554	.546	.26764

a. Predictors: (Constant), Community Workshops

As shown in Table 4, it was found there was a significant relationship between community workshops and implementation of road maintenance projects. This was demonstrated by the correlation coefficient $R=0.744$. The coefficient of determination $R^2=0.554$ meant that 55.4% of variation in implementation of road maintenance projects was accounted for by community workshops. This means that community workshops affected the implementation of road maintenance projects.

Table 5: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.244	1	5.244	73.205	.000 ^b
	Residual	4.226	59	.072		
	Total	9.470	60			

a. Dependent Variable: Implementation

b. Predictors: (Constant), Community Workshops

The findings show that F-value was significant ($F=73.205$; $p=0.000$). It implies that the overall model was significant and fit to analyze the relationship between community workshops and implementation of road maintenance projects. Evidently, the community workshops affected the implementation of road maintenance projects.

Table 6: Regression Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.628	.312		5.215	.000
Community Workshops	.649	.076	.744	8.556	.000

a. Dependent Variable: Implementation

The multiple regression model; $Y = \beta_0 + \beta_1 X_1 + \varepsilon$ was expressed as $Y = 1.628 + 0.649X_1 + \varepsilon$. Aligned with this model, the analysis revealed that a one unit change in community workshops corresponded to a 0.649 unit change in the implementation of road maintenance projects. The findings thus show that the implementation of KeNHA project is reliably predicted based on the extent to which community workshops were utilized as a strategy for engaging community. The t-value ($t = 8.556$; $p = 0.000$) was found to be significant at the 95% confidence level, indicating that community workshops exert a notable influence on the implementation of road maintenance projects. Based on this result, the study concluded that community workshops play a critical role in determining project implementation.

7. CONCLUSION

In conclusion the study demonstrate that community workshops play a crucial role in the implementation of road maintenance projects. These workshops foster stakeholder alignment by creating a shared understanding of project goals and responsibilities, reducing conflicts and ensuring everyone works toward common objectives. They also contribute significantly to community capacity building by equipping local residents with the knowledge and skills needed to actively participate and support maintenance activities. The study also concludes that community workshops strengthens local ownership and sustainability of the projects. Furthermore, community workshops enhance project communication effectiveness by providing transparent and consistent channels for information exchange. This openness helps address concerns promptly and builds trust between the project team and the community. Overall, community workshops as strategy of community engagement create a foundation for more efficient and inclusive project implementation, ultimately leading to better outcomes and stronger community engagement throughout the road maintenance processes.

8. RECOMMENDATIONS

The study recommends that Kenya National Highways Authority should integrate community workshops into their operational framework and as a standard practice in all road maintenance projects. These workshops should be conducted at key project stages to facilitate early dialogue, clarify objectives, and collect feedback. This will promote stakeholder alignment, improve planning, and strengthen community support throughout implementation of road maintenance projects.

REFERENCES

- Akinyi, R. F. (2022). *Contractor's Capacity and Implementation of Performance Based Road Maintenance Contract Projects on Class a Roads in Kenya: a Case of Class A2 Road by Kenya National Highways Authority* (Doctoral dissertation, university of nairobi).
- Alqahtani, D., Salman, B., & He, S. (2024). An integrated sustainability assessment framework for public-private partnerships in highway projects. *Journal of Transportation Engineering, Part A: Systems*, 150(7), 04024023.
- Bice, S., & Jones, K. (2023). Community Engagement for Urban and Regional Futures. In *The Palgrave Encyclopedia of Urban and Regional Futures* (pp. 329-340). Cham: Springer International Publishing.

- Goodman, N., Zwick, A., Spicer, Z., & Carlsen, N. (2020). Public engagement in smart city development: Lessons from communities in Canada's Smart City Challenge. *The Canadian Geographer/Le Géographe canadien*, 64(3), 416-432.
- Kenya National Highways Authority (2024). *Annual Report for the financial year 2023/2024*.
- Kimanzi, A. (2022). Stakeholder Involvement and Implementation of Projects by Kitui County Government, Kenya. *Journal of Entrepreneurship & Project Management*, 2(5), 1-9.
- Kimeu, P. S. (2018). *Institutional factors influencing performance of rural roads maintenance projects in Machakos County, Kenya* (Doctoral dissertation, University of Nairobi).
- M'arimi, A. G. (2019). *Factors Influencing Implementation of Performance Based Road Maintenance Projects in Kenya National Highways Authority Central Region, Kenya* (Doctoral dissertation, university of nairobi).
- Mahmood, S., Sabir, M., & Ali, G. (2020). Infrastructure projects and sustainable development: Discovering the stakeholders' perception in the case of the China–Pakistan Economic Corridor. *PloS one*, 15(8), e0237385.
- Maina, T. W. (2019). *Factors influencing maintenance of roads in Kenya: A case of the Nairobi Thika highway improvement project* (Doctoral dissertation, University of Nairobi).
- Matu, J., Kyalo, D., Mbugua, J., & Mulwa, A. (2020). Stakeholder Participation in Project Planning: Prerequisite to Effective Completion of Urban Road Transport Infrastructure Projects in Kenya. *Journal of Building Construction and Planning Research*, 8(1), 73- 91.
- Sohu, S., Jhatial, A. A., Ullah, K., Lakhiar, M. T., & Shahzaib, J. (2018). Determining the critical success factors for highway construction projects in Pakistan. *Engineering, Technology & Applied Science Research*, 8(2), 2685-2688.
- Spalek, S. (2024). Sustainable project management by considering the impact of modern technologies on stakeholder management. In *Sustainability and Agile Project Management* (pp. 73-86). Routledge.
- Wang, W. (2021). The concept of sustainable construction project management in international practice. *Environment, Development and Sustainability*, 23(11), 16358-16380.
- Warsame, H. K. (2023). *The Influence of Stakeholder Involvement on Implementation of Road Construction Projects in Somalia* (Doctoral dissertation, Kampala International University).
- Zafar, I., Shen, G. Q., Zahoor, H., Xue, J., & Ekanayake, E. M. A. C. (2020). Dynamic stakeholder salience mapping framework for highway route alignment decisions: China–Pakistan Economic Corridor as a case study. *Canadian Journal of Civil Engineering*, 47(11), 1297- 1309.