



INFLUENCE OF STAKEHOLDER MANAGEMENT ON PERFORMANCE OF RENEWABLE ENERGY PROJECTS IN KENYA

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ABSTRACT

This study assessed the influence of stakeholder management on the performance of renewable energy projects in Kenya. The study was grounded in the Stakeholder Theory which provided a multidimensional lens for examining how institutional and managerial practices shape project outcomes. The study adopted an explanatory research design was targeting stakeholders involved in the implementation of renewable energy projects across Kenya. Primary data were collected using structured questionnaires, while secondary data were obtained from relevant project reports and regulatory agencies. The target population was 380. Sample size was 195. The stratified random sampling technique was the most appropriate approach for this study. Responses were analyzed using descriptive statistics and multiple regression analysis to determine the nature and strength of the relationships between the PPP drivers and project performance. The findings revealed that stakeholder management had a positive and statistically significant influence on project performance. The study concludes that the successful implementation of renewable energy projects in Kenya requires strategic attention to inclusive stakeholder engagement. It recommends that project managers adopt integrated planning approaches and that policymakers strengthen regulatory frameworks to support sustainable project outcomes. The study also identifies gaps for future research, particularly the need to explore the roles of technological innovation, regulatory governance, and longitudinal project tracking in the evolving renewable energy landscape.

Key Words: Stakeholder Communication, Level of Community Engagement, Stakeholder Satisfaction Score, Partnership Agreements Signed

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INTRODUCTION

While some studies have explored the impact of financing structures and market risks on renewable energy projects, there remains a need to examine the influence of stakeholder engagement on project performance. Addressing this challenge is critical to ensuring that renewable energy projects contribute effectively to Kenya's long-term energy sustainability and economic development (Eze et al., 2022).

Stakeholder management is a critical determinant of project success. Renewable energy projects involve multiple stakeholders, including government agencies, private investors, regulatory bodies, local communities, and environmental groups (Antwi & Ley, 2021). Effective stakeholder management fosters collaboration, minimizes conflicts, and ensures that all parties are aligned toward common objectives. Poor stakeholder engagement can lead to opposition, regulatory bottlenecks, and social resistance, all of which can delay or derail projects. By assessing how stakeholder management influences the performance of renewable energy projects, this study will provide strategies for improving engagement, communication, and participation to enhance project acceptance and sustainability (Eze et al., 2022).

Germany's renewable energy transition, known as the *Energiewende*, has been one of the most ambitious in the world, with the country aiming to phase out nuclear power while increasing reliance on wind, solar, and biomass energy. The introduction of the Renewable Energy Sources Act (EEG) in 2000 facilitated the rapid expansion of renewable energy by guaranteeing fixed feed-in tariffs for producers. This policy spurred large-scale investments and significantly increased the share of renewables in the national energy mix (Manap et al., 2024). However, despite Germany's progress, the high costs of energy subsidies and grid congestion have posed significant challenges. The country has had to scale back some financial incentives, leading to market uncertainty and

project delays. Furthermore, integrating intermittent sources like wind and solar into the national grid has required substantial infrastructure upgrades, increasing the overall cost of the energy transition. Nevertheless, Germany remains a global benchmark for countries looking to transition towards renewable energy through strong policy support and stakeholder engagement (Atuya et al., 2023).

According to Michaelowa et al. (2021), Morocco has successfully implemented large-scale renewable energy projects by fostering strong stakeholder collaboration between the government, private investors, international donors, and local communities. The government, through the Moroccan Agency for Sustainable Energy (MASEN), has played a pivotal role in coordinating renewable energy initiatives, ensuring that both private sector and public sector interests align. The Noor Ouarzazate Solar Complex (580 MW) stands as one of the best examples of well-executed stakeholder management, involving financing from international organizations such as the World Bank, African Development Bank (AfDB) and European Investment Bank (EIB). By integrating local communities into project planning and ensuring transparency in regulatory policies, Morocco has managed to minimize resistance to large-scale renewable developments. However, challenges such as balancing local job creation with foreign expertise in project implementation remain, requiring continued stakeholder engagement strategies to enhance long-term project acceptance (Chileshe et al., 2022).

Effective stakeholder management has been crucial in the implementation of renewable energy projects in Kenya, involving government agencies, private investors, local communities, and international development partners. The Ministry of Energy, KenGen, Kenya Power, and the Energy and Petroleum Regulatory Authority (EPRA) have played a central role in policy formulation and project execution (Chileshe et al., 2022). Private sector participation has increased, with

independent power producers (IPPs) contributing significantly to the energy mix through projects such as Lake Turkana Wind Power (310 MW) and Garissa Solar Power Plant (54 MW). Community engagement has also been prioritized, particularly in geothermal projects, where benefit-sharing agreements ensure that local communities receive economic and social benefits from energy developments. However, stakeholder conflicts have emerged, particularly over land acquisition, environmental concerns, and delays in compensation. Strengthening stakeholder coordination through transparent consultation processes, community development initiatives, and fair compensation mechanisms will be essential for the continued success of renewable energy projects (Takase et al., 2021).

Kenya has positioned itself as a regional leader in renewable energy, with ambitious targets to achieve 100% clean energy by 2030. The country is expanding investments in green hydrogen, floating solar farms, and energy storage solutions to enhance the sustainability of its energy sector (Eze et al., 2022). Future projects, such as the Menengai Geothermal Expansion and the expansion of solar mini-grids will further diversify Kenya's energy mix and increase resilience against climate change. Additionally, Kenya is exploring carbon trading and climate financing mechanisms to attract more investments in renewables. By addressing challenges related to stakeholder inclusivity, Kenya is well on its way to becoming a global model for clean energy transition and sustainable energy development (Olando et al., 2024).

Statement of the Problem

The adoption of renewable energy in Kenya is a strategic imperative to address the nation's growing energy demand and sustainability concerns. While Stakeholder management has emerged as a critical mechanism for financing and implementing renewable energy projects, its effectiveness remains inconsistent due to various influencing drivers. Kenya has a renewable energy penetration rate of approximately 90%, mainly from

hydropower, geothermal, and wind energy sources (Kenya Energy Sector Report, 2023). However, project failures, cost overruns and delays are still prevalent, raising concerns about the underlying factors that shape Stakeholder management performance in this sector. Despite the existence of policies like the Public-Private Partnership Act (2013), inefficiencies persist due to inadequate risk-sharing frameworks, unclear legal structures, and financial bottlenecks (Mungai et al., 2022).

Institutional and governance challenges further exacerbate the inefficiency of Stakeholder -driven renewable energy projects. Bureaucratic red tape, weak coordination between public and private entities and corruption has been reported in multiple infrastructure projects (Oluoch et al., 2021). According to the World Bank report (2021), corruption-related inefficiencies account for up to 30% of project cost escalations in Kenya's energy sector. Additionally, a lack of technical expertise in PPP negotiations often results in unbalanced contracts that disproportionately benefit private investors at the expense of public interests. This affects project sustainability and reduces overall investor confidence in the sector.

Existing literature, such as studies by Odhiambo et al. (2020) and Mathu (2023), has identified factors like market risks, government support, and financial sustainability but lacks a direct empirical link to performance metrics such as project completion rates, cost efficiency, and long-term sustainability. Additionally, much of the existing research focuses on financial and market risks, often overlooking the complexities of stakeholder engagement. While global studies highlight political and regulatory challenges in renewable energy PPPs, their relevance to Kenya's socio-political context remains uncertain. This study sought to fill these gaps by providing empirical insights into the influence of various Stakeholder management drivers on the performance of renewable energy projects in Kenya, offering practical recommendations to enhance efficiency and sustainability.

Objectives of the Study

The Objective of this study was to determine the influence of Stakeholder management on performance of renewable energy projects in Kenya. The study was guided by the following question:

- In what ways does Stakeholder management influence performance of renewable energy projects in Kenya?

LITERATURE REVIEW

Stakeholder Theory

According to Grebel et al. (2024), the Stakeholder Theory, which was created by Freeman (1984), contends that organizations do not function in isolation but are instead influenced by many stakeholders who have varying levels of influence on decision-making and the success of projects. These stakeholders share a variety of interests, expectations, and levels of influence. For the purpose of achieving long-term sustainability and performance, the theory proposes that enterprises and projects should give priority to the interests of all stakeholders rather than just shareholders. In the context of PPP renewable energy projects in Kenya, stakeholder management plays a critical role in ensuring smooth project implementation, regulatory compliance, social acceptance, and environmental sustainability. The theory provides a strategic framework for managing interactions with government agencies, private investors, regulatory bodies, local communities, and environmental organizations, who all have a vested interest in the performance of renewable energy initiatives (Chisika & Yeom, 2021).

According to Chileshe et al. (2022), effective stakeholder management in Kenya's renewable energy sector requires identifying and engaging key players from project inception to execution. According to Stakeholder Theory, projects that integrate early and continuous stakeholder consultation are more likely to gain public support, secure regulatory approvals, and minimize opposition. For instance, the Lake Turkana Wind

Power Project, the largest wind farm in Africa, faced legal challenges due to inadequate community involvement and land rights disputes. Applying Stakeholder Theory in such projects ensures that all affected parties are engaged proactively, reducing the likelihood of conflicts, delays, and financial losses. The theory encourages collaborative decision-making, ensuring that stakeholders contribute to project planning, risk assessment, and benefit-sharing agreements that enhance long-term project sustainability (Grebel et al., 2024).

Another key aspect of Stakeholder Theory in renewable energy projects is the balancing of diverse stakeholder interests. In Kenya, government agencies focus on policy and regulation, private investors prioritize financial returns, while local communities emphasize land rights and environmental sustainability (Oguanobi & Joel, 2024). Stakeholder Theory suggests that project developers must consider and integrate these concerns equitably, ensuring that projects deliver economic, social, and environmental benefits. For example, successful geothermal projects in Kenya, such as Olkaria Geothermal Power Plants, have established community compensation frameworks and corporate social responsibility (CSR) programs, reinforcing the importance of balancing stakeholder interests. Without such approaches, renewable energy projects risk community resistance, regulatory hurdles, and operational inefficiencies, ultimately affecting their performance (Chisika & Yeom, 2021).

Furthermore, Stakeholder Theory underscores the importance of transparency and trust-building in stakeholder management. In PPP renewable energy projects, lack of transparency can lead to mistrust, legal battles, and project delays. For instance, some solar energy projects in Kenya have faced scrutiny over unclear land acquisition processes and exclusion of local communities in decision-making (Mungai et al., 2022). Stakeholder Theory promotes open communication, regular stakeholder meetings, and participatory governance, ensuring that projects gain public legitimacy and long-term

community support. By fostering stakeholder inclusivity, renewable energy projects can mitigate risks associated with social resistance, policy changes, and investor uncertainty, leading to improved performance and sustainability (Ali et al., 2024).

Despite its applicability, Stakeholder Theory has some limitations when explaining stakeholder management in renewable energy PPPs. The theory assumes that all stakeholders have equal influence and can be effectively engaged, but in reality, power dynamics and conflicting interests often hinder fair engagement. In Kenya, private investors and government agencies may dominate decision-making, sidelining local communities and environmental organizations (Mungai et al., 2022). Additionally, the theory does not provide a structured framework for prioritizing stakeholders, making it challenging to manage competing interests effectively. Some critics argue that Stakeholder Theory is idealistic, as it assumes that organizations will always act ethically and equitably, whereas profit motives and political interests often drive project decisions. In complex PPP energy projects, where financial constraints, regulatory pressures, and political factors shape decision-making, the theory's emphasis on broad stakeholder engagement may not always be practical or achievable (Ali et al., 2024).

Despite these critiques, Stakeholder Theory remains a valuable framework for explaining stakeholder management in Kenya's renewable energy sector. The theory provides a structured approach to engaging key stakeholders, balancing competing interests, and fostering transparency, which are essential for the success and sustainability of stakeholder management driven renewable energy projects. It offers a proactive model for mitigating conflicts, ensuring regulatory compliance, and improving community relations, all of which contribute to enhanced project efficiency, financial performance, and long-term viability. By applying Stakeholder Theory, this study will provide insights into how effective stakeholder engagement

strategies can enhance the performance of renewable energy projects in Kenya, making them more socially acceptable, economically viable, and environmentally sustainable.

Empirical Literature Review

Stakeholder Management and Performance of Renewable Energy Projects

To ensure the smooth launch of renewable energy projects in local communities, Ishola et al. (2024) investigated stakeholder communication frameworks. Local communities, government agencies, project developers, and NGOs are among the many types of stakeholders that this study aims to address through its proposed strategic framework for communication.

As guiding principles, the framework for community-based renewable energy initiatives stresses openness, trust-building, and participation in order to meet the specific needs of these projects. Selecting suitable channels for tailored, ongoing discourse, identifying important stakeholders, and establishing clear communication goals are all critical components. As a first step, the framework details how to identify important stakeholders by taking their responsibilities, influence, and interests into account throughout the project's lifecycle. This allows for more targeted engagement by classifying stakeholders as either primary (directly affected) or secondary (indirectly affected). Community meetings, social media, local radio, and educational workshops are among the various channels of communication that the framework suggests next. This ensures that all stakeholders are effectively reached by selecting channels that are accessible, take stakeholder preferences into account, and are culturally appropriate. Transparent reporting on project milestones and impacts, participatory planning sessions, and regular feedback loops are all strategic engagement tactics that the framework incorporates to increase community participation. Through consistent communication, the project team can establish and maintain credibility, which in turn can allay fears and win over the community.

In order to build trust, obtain the necessary approvals, and minimize conflicts, Ezeh et al. (2024) stressed the importance of proactive stakeholder engagement in energy projects. It highlights the significance of open communication, honest procedures, and stakeholder engagement in decision-making for project longevity and community backing. The paper also highlights the importance of transparent decision-making and strong stakeholder relationships as outcomes of well-thought-out communication strategies that incorporate frequent updates, public consultations, and information sessions. Strategies to improve project acceptability and long-term benefits include adopting CSR initiatives, creating advisory committees, and reaching out through digital and social media platforms. Findings from the study indicate that a thorough and strategic approach is necessary to effectively engage stakeholders in energy projects. This approach should include recognizing stakeholder interests, keeping communication open and honest, encouraging collaboration, and resolving conflicts before they escalate. The energy industry can do its part to promote social responsibility and sustainable development by employing tactics like stakeholder mapping, strong communication plans, collaborative approaches, and dispute resolution mechanisms to increase the longevity of their projects, guarantee compliance, and win over the community.

The function of stakeholder involvement in improving renewable energy supply chain sustainability was investigated by Reynolds (2024). The research shows the importance and complexity of effective stakeholder engagement through a qualitative research approach, which includes in-depth interviews with important stakeholders including government agencies, industries, renewable energy companies, community groups, and environmental organizations. Concerns about the environment, society, the economy, and regulations were among the many stated reasons for stakeholder involvement. Based on the findings,

it is clear that customized engagement strategies are necessary to account for the diversity of stakeholders and meet their unique requirements and expectations. Pooling resources, exchanging knowledge, and tackling common problems are best accomplished through collaborative approaches like public-private partnerships and multi-stakeholder initiatives. Nevertheless, difficulties arising from unequal power dynamics, competing agendas, and difficulties in conveying ideas were also identified. In order to shape stakeholder engagement practices and sustainability outcomes, government policies and regulatory frameworks were determined to play a crucial role. Significant concerns that could undermine sustainability initiatives were regulatory uncertainty and inconsistency. Solar power plants typically have a direct influence on nearby neighborhoods, so community involvement became an important consideration. Establishing credibility and gaining societal support necessitates active participation, which includes consultation and methods for sharing benefits. Marketing tactics and emotional intelligence were acknowledged as vital resources for successful stakeholder engagement, with an emphasis on the significance of understanding, attentive listening, and precise expression. Stakeholder engagement and sustainable supply chains in renewable energy must be approached holistically, according to this study's results. Accelerating the transition to a more sustainable energy future can be achieved through stakeholder collaboration, policy alignment with sustainability goals, and meeting the needs of diverse stakeholders.

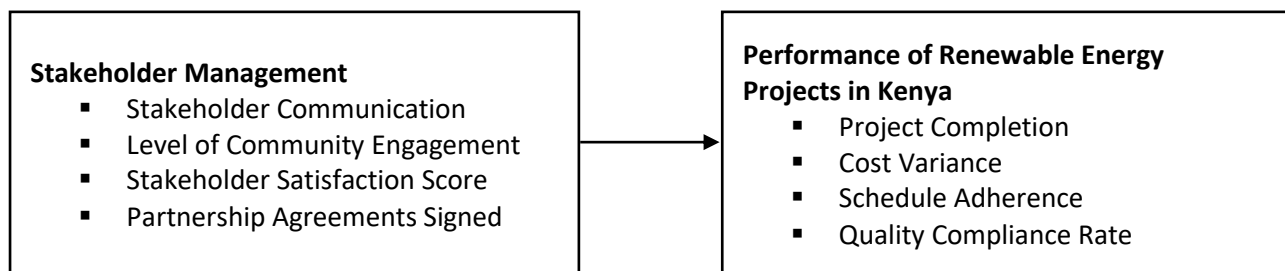
The purpose of the study by Maarif et al. (2023) was to determine who the important players were in the renewable energy tourism village development project known as "Kampung Emas," what their duties were, and how to best manage the project's stakeholders. Researchers used the RACI Matrix to analyze data collected from interviews with project stakeholders. Village Head, Tourism Awareness Group Chair, Restaurant

Manager, and Academician were the four primary stakeholders identified by the analysis. Each member of the team plays an important role: the village head acts as an information disseminator, the chair of the tourism awareness group is in charge of the most important parts of the project, the manager of the restaurant is in charge of both tactical and strategic matters, and the academic makes substantial contributions to the analysis of every task. The Village Head is tasked with disseminating information, the Tourism Awareness Group Chair with acting as the principal spokesperson, the Restaurant Manager with contributing to strategic decision-making, and the Academician with serving as a consultative partner according to the proposed stakeholder management strategy. The purpose of this strategy is to facilitate the development of a tourist village that relies on renewable energy sources.

Port energy transition stakeholders' management was the subject of an analysis by Alamoush et al. (2024). Insights regarding life cycle approach stakeholder management tools are the goal of this

study. It is possible to manage PETPs' stakeholders through the use of stakeholder theory and the stakeholders' circle methodology. The five-step approach involves identifying, prioritizing, visualizing, engaging, and monitoring twenty-two groups of stakeholders with varying stakes that could be involved in the shift to and implementation of PETPs. This will help manage and engage them while also overcoming any challenges that may arise. When port managers and practitioners use this life cycle approach, they are better able to pinpoint important stakeholders, create engagement strategies to connect with them, and keep those relationships strong. While viewed as a tool for guidance, the demonstrated life cycle approach encourages cooperation and trust, which in turn improves PETPs' decision-making and resource allocation. Despite being the first study to do so, it may be seen as a more in-depth use of stakeholder theory and the stakeholder circle method in relation to PETPs. Efficient port energy transition and stakeholder management are two areas that could benefit from the results of this study.

Conceptual Framework



Independent Variable

Dependent Variable

Figure 1: Conceptual Framework

METHODOLOGY

This study used explanatory research design. The target population for this study consisted of key stakeholders directly involved in the planning, financing, implementation, and management renewable energy projects in Kenya. The sampling frame consisted of key organizations, agencies and institutions actively involved in financing, developing, and managing renewable energy

projects. The stratified random sampling technique was the most appropriate approach for this study on the influence of stakeholder management on the performance of renewable energy projects in Kenya. The choice of stratified random sampling was justified by its ability to capture diversity within the target population while maintaining representativeness. Stratified random sampling ensured that respondents from all categories are

included proportionally, preventing dominance from any one group (Dzwigol, 2022). The researcher utilized the Yamane (1967) sampling formula and achieved a sample size of 195.

The data collection instruments for this study included structured questionnaires and document review checklists, ensuring a comprehensive and reliable approach to gathering both primary and secondary data. Structured questionnaires were used to collect quantitative data from respondents across various stakeholder categories, including government officials, private sector investors, project managers, engineers, financial analysts, and utility company representatives. The questionnaire featured closed-ended questions using a Likert scale to assess the extent to which stakeholder management influenced project performance.

The data analysis for this study was conducted using quantitative methods, with all statistical processing carried out in SPSS Version 28. The analysis involved both descriptive and inferential statistics to ensure a comprehensive examination of the influence of stakeholder management on the performance of renewable energy projects in Kenya. The structured questionnaire responses were coded and entered into SPSS 28, where data cleaning was performed to eliminate errors, handle missing values, and ensure data accuracy before analysis.

RESULTS AND DISCUSSIONS

Stakeholder Management

The descriptive statistics presented in Table 1 provide a comprehensive overview of stakeholder management practices and their perceived influence on the performance of renewable energy projects in Kenya. The mean scores for all eight statements range from 3.84 to 4.07, indicating a generally high level of agreement among respondents that effective stakeholder management contributes positively to project outcomes. The standard deviations, which vary from 0.77 to 0.96, reflect moderate variability in responses, suggesting some differences in

experiences or perceptions across projects or respondent categories.

The statement with the highest mean score, "Stakeholder communication in the project is timely, transparent, and effective" (Mean = 4.0667, SD = 0.87745), underscores the critical role of clear and timely communication in stakeholder management. This is closely followed by the belief that "Stakeholder satisfaction has a direct impact on project success" (Mean = 4.0303, SD = 0.76847), which not only reinforces the importance of meeting stakeholder expectations but also reflects a strong consensus, as indicated by the lowest standard deviation in the table. These results suggest that communication and satisfaction are viewed as the most influential components of stakeholder engagement.

Conversely, the lowest mean score was recorded for "The project ensures a high level of community engagement throughout its implementation" (Mean = 3.8424, SD = 0.93673). Although still moderately high, this score suggests that sustained community involvement may not be uniformly achieved across projects. Similarly, "Strong stakeholder engagement has improved project acceptance and social license to operate" (Mean = 3.8909, SD = 0.86967) indicates moderate agreement, highlighting an area where deeper engagement may be necessary to secure long-term community support.

Other indicators such as conflict resolution strategies (Mean = 3.9273), collaboration with local leaders (Mean = 3.9697), and consideration of stakeholder feedback in decision-making (Mean = 3.9515) further emphasize the multifaceted nature of stakeholder management. These relatively high mean values demonstrate that while stakeholder strategies are in place, opportunities for strengthening inclusive engagement and feedback integration still exist.

Overall, the descriptive results point to a favorable perception of stakeholder management in renewable energy projects. Effective

communication, satisfaction, and strategic collaboration with key actors are seen as significant contributors to project performance. However, the moderate variability and slightly lower scores on community engagement and social license imply that targeted improvements in grassroots involvement and inclusive participation could further enhance stakeholder alignment and project sustainability.

The descriptive results on stakeholder management align with recent international research that underscores the value of inclusive and strategic engagement practices in renewable energy projects. A systematic review by Smith, Taylor and Hernandez (2023) published in *Sustainability* examined stakeholder engagement in hybrid renewable energy projects and found that transparent communication, active community

participation, and well-defined conflict resolution mechanisms significantly enhance project acceptance and operational outcomes. These findings mirror the current study, where respondents strongly agreed that timely and transparent stakeholder communication (Mean = 4.07), stakeholder satisfaction (Mean = 4.03), and collaboration with community leaders (Mean = 3.97) contribute to project success. Smith et al. (2023) also emphasized that integrating stakeholder feedback into project decisions builds trust and social license to operate—reflected in the present data where consideration of stakeholder input (Mean = 3.95) and conflict management (Mean = 3.93) were perceived as influential. This convergence in findings reinforces the conclusion that effective stakeholder management is a key driver of performance in renewable energy projects executed through public-private partnerships.

Table 1: Stakeholder Management

Statements	N	Mean	Std. Deviation
Stakeholder communication in the project is timely, transparent, and effective	165	4.0667	.87745
The project ensures a high level of community engagement throughout its implementation	165	3.8424	.93673
Stakeholder feedback is actively considered in decision-making processes	165	3.9515	.88211
The project has effective strategies for resolving stakeholder conflicts	165	3.9273	.95995
Stakeholder satisfaction has a direct impact on project success	165	4.0303	.76847
There are adequate partnership agreements between public and private sector players	165	3.9152	.87238
The project team actively collaborates with local authorities and community leaders	165	3.9697	.95907
Strong stakeholder engagement has improved project acceptance and social license to operate	165	3.8909	.86967
Valid N (listwise)	165		

Performance of Renewable Energy Projects

The descriptive statistics in Table 2 provide key insights into how respondents perceive the overall performance of renewable energy projects under public-private partnerships in Kenya. All mean scores are relatively high, ranging from 3.88 to 4.25, indicating broad agreement that these projects are performing well across multiple dimensions. Standard deviations are consistently low (between

0.67 and 0.84), suggesting limited variability in responses and a strong level of consensus among stakeholders.

The highest-rated performance indicator is “The project meets its completion targets within the planned schedule” (Mean = 4.2545, SD = 0.67764), reflecting widespread recognition of schedule discipline in project implementation. This is followed closely by “Cost variance is effectively

managed to prevent budget overruns” (Mean = 4.2121, SD = 0.68777) and “The project has had a positive impact on renewable energy access and sustainability” (Mean = 4.1515, SD = 0.70370), highlighting the significance of both financial control and the project's societal contribution.

Indicators such as “The project maintains high schedule adherence” (Mean = 4.0606) and “Effective resource management has improved energy production efficiency” (Mean = 3.9394) also performed well, further emphasizing the importance of disciplined execution and operational optimization in driving performance. Meanwhile, statements regarding compliance with regulatory quality standards (Mean = 3.9273), stakeholder engagement (Mean = 3.8970), and financial structuring’s contribution to overall performance (Mean = 3.8788) received slightly lower but still positive ratings. These suggest that while these factors are acknowledged as important, they may not be consistently optimized across all projects.

Overall, the findings portray a positive outlook on project performance, particularly in relation to timeliness, budget adherence and sustainability impact. However, there remains room for further

enhancement in stakeholder integration to achieve even more robust and holistic performance outcomes in renewable energy projects.

The descriptive results on overall project performance closely mirror findings from Wijaya, Kusuma and Hartono (2023) who analyzed critical success factors (CSFs) in Indonesian renewable energy projects and identified strong alignment with our performance indicators. They reported that disciplined scheduling and strict budget management were key drivers, with timely completion targets and cost control significantly enhancing project success. The study also highlighted that integrating stakeholder engagement, resource efficiency, and robust financial frameworks led to improved sustainability and long-term impact on energy access. These outcomes correspond directly with our data: schedule adherence (M = 4.25), cost control (M = 4.21), stakeholder involvement (M = 3.90), resource management (M = 3.94), and sustainability impacts (M = 4.15). The convergence of these findings underscores that holistic project execution encompassing timely delivery, effective budgeting, stakeholder integration, resource optimization, and structured financing—drives superior performance in renewable energy initiatives globally.

Table 2: Performance of Renewable Energy Projects

Statements	N	Mean	Std. Deviation
The project meets its completion targets within the planned schedule	165	4.2545	.67764
Cost variance is effectively managed to prevent budget overruns	165	4.2121	.68777
The project maintains high schedule adherence, ensuring timely delivery	165	4.0606	.74651
The project meets quality compliance standards set by regulators	165	3.9273	.83785
Financial structuring positively influences the overall project performance	165	3.8788	.84671
Strong stakeholder engagement contributes to smooth project implementation	165	3.8970	.83829
Effective resource management has improved energy production efficiency	165	3.9394	.67803
The project has had a positive impact on renewable energy access and sustainability	165	4.1515	.70370
Valid N (listwise)	165		

Correlation Analysis

The correlation analysis presented in Table 3 examined the relationships between Stakeholder Management, Resource Management and Performance of Renewable Energy Projects.

Stakeholder Management exhibited a strong correlation ($r = 0.618$, $p < 0.001$), suggesting that effective engagement with stakeholders is highly associated with improved project outcomes.

Table 3: Correlation Analysis

		Stakeholder Management	Performance of Renewable Energy Projects
Stakeholder Management	Pearson Correlation	1	
	Sig. (2-tailed)		
Performance of Renewable Energy Projects	N	165	
	Pearson Correlation	.618**	1
	Sig. (2-tailed)	<.001	
	N	165	165

Regression Coefficients

Stakeholder Management exhibited a stronger influence, with a coefficient of 0.284 and a

standardized beta of 0.331, which implies that it is a relatively powerful predictor of project performance.

Table 4: Multiple Regression (Coefficients)

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	1.558	.202			7.713	<.001
	Stakeholder Management	.284	.074	.331		3.821	<.001

a. Dependent Variable: Performance of Renewable Energy Projects

Hypotheses Testing

H_0 : Stakeholder management has no significant influence on performance of renewable energy projects in Kenya. This hypothesis was rejected as well. Stakeholder management shows a strong and statistically significant influence with a p-value of <.001. The standardized beta coefficient ($\beta = 0.331$) is the highest among all predictors, suggesting that stakeholder management is the most influential variable in the model.

CONCLUSIONS AND RECOMMENDATIONS

Stakeholder management was found to have a strong and statistically significant influence on project performance. Projects that prioritized stakeholder mapping, engagement, communication, and benefit-sharing mechanisms experienced fewer implementation delays, enhanced regulatory compliance, and higher social

acceptance. The study noted that community involvement and transparent grievance redress mechanisms were especially critical in minimizing project opposition. These findings support the Stakeholder Theory, underscoring the importance of addressing the interests and expectations of all parties involved to ensure project success.

Effective stakeholder management is indispensable in ensuring the performance and acceptability of renewable energy projects. The research concludes that inclusive engagement, participatory planning, and responsive communication foster trust and collaboration, reducing conflicts and legal disputes. Ignoring stakeholder interests often results in project delays and reputational damage.

The study recommended the adoption of a holistic financial structuring framework that integrates

concessional loans, public subsidies, equity participation, and innovative financing instruments such as green bonds and blended finance. Project developers should prioritize conducting comprehensive financial feasibility assessments prior to implementation to enhance bankability and investor confidence. Moreover, managers should institutionalize structured stakeholder engagement processes, including the use of stakeholder mapping tools, engagement matrices, and feedback loops to promote inclusivity, mitigate resistance, and foster shared ownership of renewable energy initiatives.

Additionally, the study recommended the deployment of integrated resource planning models to guide the optimal allocation of physical, financial, and human resources throughout the project life cycle. Project managers should invest in capacity building and adopt performance-based management practices to strengthen operational efficiency. Risk management, as a core project governance function, should be elevated through the establishment of formal risk registers, scenario-based risk simulations, and real-time monitoring dashboards to enhance adaptive project responses to emergent uncertainties.

At the policy level, there is a need for the government and regulatory institutions to strengthen the enabling environment renewable energy projects through targeted legal and institutional reforms. This includes the revision of the Public-Private Partnership Act to incorporate standardized financial structuring templates,

enforceable risk-sharing frameworks, and performance-linked incentives for private investors. Policymakers should also enhance the regulatory certainty surrounding tariffs, licensing, and environmental approvals to reduce the perceived investment risks that deter private sector participation.

While this study has significantly contributed to understanding the influence of stakeholder management on the performance of renewable energy projects in Kenya, several areas warrant further scholarly inquiry. Future research could explore the mediating role of regulatory governance in the relationship between stakeholder management and project performance, particularly within complex and politically dynamic jurisdictions. There is also scope to investigate the influence of technological innovation and digital infrastructure—such as smart grids and AI-enabled monitoring—on the efficiency and adaptability of renewable energy projects.

Moreover, a comparative analysis of renewable energy project outcomes across East African countries could yield insights into best practices and region-specific constraints. Longitudinal studies tracking project lifecycle performance metrics over extended durations would further illuminate the sustainability of stakeholder alignment. Finally, qualitative investigations involving case study methodologies could enrich understanding of context-specific socio-political dynamics and institutional behavior influencing project success or failure in Kenya's renewable energy landscape.

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