

International Journal of Management and Leadership Studies
2025; 6(1): 583-601
ISSN 2311-7575

EFFECT OF STAKEHOLDER PARTICIPATION ON SUSTAINABILITY OF SOLID WASTE MANAGEMENT PROJECTS IN UASIN GISHU COUNTY, KENYA

¹Christine Jepkoech and ²Mr. Tom Kawino

¹MML Student, Management University of Africa

²Lecturer, Management University of Africa

*Corresponding Email: christinejepkoech6@gmail.com

ABSTRACT

The sustainability of solid waste management projects remains a major challenge in many developing countries despite substantial investments in infrastructure and technology. This study examined the effect of stakeholder participation on the sustainability of solid waste management projects in Uasin Gishu County, Kenya. The study was guided by Stakeholder Theory. The study adopted a descriptive research design. The target population consisted of 250 different individuals actively involved or affected by SWMPs in the county. A sample size of 152 respondents was achieved using the Yamane formula. Participants were sampled using stratified sampling. The information was collected using questionnaires, and a pilot study was carried out in Nakuru City to determine the validity and reliability of research instruments. The data was subsequently coded and placed into a computer where the Statistical Package for Social Sciences (SPSS Version 25) was used to analyze them. The data was analyzed using descriptive and inferential statistics. The descriptive statistics were based on frequencies, percentage, mean and standard deviation and inferential statistics were correlation and regression analysis. Analyzed data was presented in form of tables. The results revealed that stakeholder participation has a positive and significant effect on sustainability of Solid Waste Management Projects in Uasin Gishu County, Kenya ($\beta_1=0.207$, $p=0.004$). The study concluded that Stakeholder participation is crucial for sustainability of Solid Waste Management (SWM) projects in Uasin Gishu County. It recommends that county governments institutionalize stakeholder participation frameworks that promote regular consultation, transparency, and community engagement in waste management initiatives. The study contributes to policy and practice by providing empirical evidence that stakeholder participation is a critical determinant of sustainability in public environmental projects and underscores the importance of inclusive governance for effective solid waste management in Kenya.

Keywords: *Stakeholder participation, sustainability, solid waste management projects, Uasin Gishu County, Kenya*

INTRODUCTION

Globally, the management of solid waste has become one of the most pressing sustainability challenges confronting both developed and developing nations. Rapid urbanization, industrial expansion, population growth, and changing consumption patterns have led to an unprecedented increase in waste generation, placing immense pressure on cities and municipalities to develop sustainable waste management systems (Szpilko, et al,2023). The United Nations Environment Programme (UNEP) underscores that participatory waste governance anchored on stakeholder engagement and inclusive decision-making plays a crucial role in achieving environmental sustainability and enhancing policy legitimacy. Countries that have embraced inclusive waste governance models have demonstrated significant improvements in recycling rates, resource recovery, and waste minimization (Awino & Apitz,2024).

Japan's integrated waste management system relies heavily on public participation and community-based waste separation programs that have achieved over 80 percent recycling efficiency. Similarly, Germany's circular economy approach, which institutionalizes public consultation and producer responsibility, has established one of the most efficient recycling and recovery systems in the world (Steinhorst & Beyerl,2021). These international experiences highlight that sustainable waste management cannot be achieved through technology and regulation alone it must also involve citizens, private actors, and local institutions in a coordinated and stakeholder participation framework. Regionally, countries in Sub-Saharan Africa have increasingly recognized the pivotal role of stakeholder participation in addressing waste management crises (Debrah, et al,2022).

The region faces growing urban populations, weak institutional frameworks, and inadequate waste collection infrastructure. Despite these constraints, several nations, including Nigeria, South Africa, and Kenya, have adopted participatory strategies that emphasize community engagement, public-private partnerships, and decentralized waste management approaches (Alabi, et al,2020). For example, in South Africa, community-based waste collection initiatives in informal settlements have improved service delivery and created local employment opportunities. In Nigeria, the inclusion of informal waste pickers in city-level recycling programs has enhanced both efficiency and social equity. Nevertheless, the implementation of participatory frameworks in most African countries remains inconsistent due to limited institutional capacity, poor policy enforcement, and minimal community empowerment (Hart,2024). These challenges have often resulted in project failures, financial inefficiencies, and limited long-term sustainability of waste management programs.

In Kenya, solid waste management continues to pose a serious environmental, social, and administrative challenge (Amugsi et al,2022). Rapid urbanization, industrial development, and population growth have resulted in high waste generation rates that far exceed the capacity of most counties to manage effectively. Major urban centers such

as Nairobi, Mombasa, and Kisumu face problems of low waste collection coverage, poor waste segregation, and rampant illegal dumping. While the Kenyan government has developed a national solid waste management policy and various county-level initiatives, their effectiveness has been undermined by weak institutional coordination, limited financial resources, and insufficient community involvement (Kituku,2020). The situation in Uasin Gishu County mirrors these national trends. Despite the county's efforts to introduce waste collection programs, promote recycling, and engage private partners, many projects have faced sustainability challenges linked to inadequate stakeholder participation. Local communities often remain passive beneficiaries rather than active participants, and limited consultation during planning and implementation has reduced ownership and accountability. Consequently, the lack of stakeholder participation mechanisms has undermined the long-term viability of waste management projects in the county.

The persistent failure of solid waste management projects in Uasin Gishu County, despite continuous investments in infrastructure, technology, and policy frameworks, constitutes a pressing development concern. The county, like many rapidly urbanizing regions in Kenya, faces escalating waste volumes driven by population growth, increased urbanization, and industrial expansion (Otundo Richard,2024). Although several initiatives have been launched to enhance waste collection, recycling, and disposal systems, many projects remain unsustainable beyond their initial implementation phases. One major underlying factor identified is the limited and inconsistent involvement of key stakeholders including local communities, private waste collectors, county authorities, and environmental agencies in project planning, decision-making, and monitoring processes. This lack of stakeholder participation often leads to inadequate community ownership, weak accountability, and minimal adaptation of projects to local realities (Awoonor,2025). Furthermore, existing studies on solid waste management in Kenya have predominantly focused on infrastructural and technical dimensions such as waste segregation, transportation efficiency, and financing mechanisms, while overlooking the critical role of stakeholder participation as a determinant of sustainability. Therefore, this study seeks to fill this empirical and contextual gap by assessing how stakeholder participation influences the sustainability of solid waste management projects in Uasin Gishu County, Kenya.

Effective waste management is not only a technical or administrative issue but also a social and participatory one, where the success of interventions depends heavily on the engagement and commitment of all relevant stakeholders. By focusing on stakeholder participation, the study provides empirical evidence that can inform policymakers, planners, and practitioners on how participatory structures can improve project outcomes and long-term viability. The results are expected to contribute to the development of inclusive waste management policies that promote accountability, transparency, and community-driven solutions. Additionally, the study offers valuable

insights for county governments seeking to strengthen collaborative partnerships and institutionalize public involvement in environmental management. Ultimately, the findings will help bridge the gap between policy formulation and implementation, ensuring that solid waste management projects in Uasin Gishu County and similar contexts are not only operationally effective but also socially sustainable and environmentally resilient.

LITERATURE REVIEW

Theoretical Literature Review

This study was guided by the Stakeholder Theory developed by Freeman (1984). The theory holds that the success of an organization is not only to maximize shareholder value but also depends on how well it manages relationships with everyone affected by its operations. Stakeholders may include employees, managers, customers, suppliers, community members, environmental organizations, and regulatory authorities. Valentinov and Hajdu, (2021) identified the theory's descriptive, instrumental, and normative components: a descriptive explanation of how stakeholder management affects organizational performance, an instrumental argument on how managing stakeholders relates to trade-offs, and a normative justification for why stakeholders matter intrinsically regardless of their usefulness to shareholders.

In the context of Solid Waste Management Projects (SWMPs), the stakeholder theory emphasizes the inclusion of multiple actors such as county governments, waste management firms, community members, informal waste pickers, and environmental regulators. This theory offers a platform for analyzing how stakeholder participation, empowerment, communication, and collaboration among stakeholders contribute to sustainability outcomes. The theory assumes that each stakeholder's interests are valid and must be considered, that identifying stakeholder needs leads to better decisions and legitimacy, that stakeholders are interdependent, and that transparent relationships foster long-term survival (Freeman, 1984; Valentinov and Hajdu, 2021; Freeman, Dmytriiev & Phillips, 2021). Critics argue that the theory lacks clarity on prioritizing conflicting interests and may create inefficiency in resource-constrained projects like SWMPs. Nevertheless, it remains valuable for examining inclusive governance in solid waste management.

Empirical Literature Review

In Nairobi, Ogutu et al. (2021) conducted a comprehensive study to examine how stakeholder participation influences compliance in solid waste segregation and the mitigation of project-related conflicts. Employing a descriptive research design that incorporated 385 respondents and 10 key informants drawn from local government officials, waste contractors, and community leaders, the study revealed that stakeholder inclusion in planning and decision-making processes significantly improved compliance with waste separation initiatives at the household level. The researchers emphasized that participatory policy frameworks foster greater transparency, accountability, and

inclusivity core elements for the success and sustainability of waste management projects. Their findings further indicated that involving stakeholders from the initial stages of project design to execution nurtures a sense of collective ownership, reduces community resistance, and enhances operational efficiency. Consequently, Ogutu et al. concluded that integrating participatory approaches within policy formulation enhances project feasibility, minimizes institutional conflicts, and aligns local environmental priorities with national sustainability goals.

In Japan, Nakamura et al. (2021) investigated the influence of structured community engagement on compliance with waste sorting and recycling regulations. Their study centered on local municipalities that had institutionalized participatory waste governance through citizen committees and neighborhood workshops. The results indicated that communities with active citizen participation recorded over 60 percent compliance with waste sorting policies, a figure substantially higher than the national average. The study highlighted that organized citizen participation promotes behavioral transformation, strengthens public confidence in environmental institutions, and enhances long-term project sustainability. However, although the Japanese participatory model is exemplary, the study did not explore its applicability within the socio-economic and institutional realities of Sub-Saharan Africa, where infrastructural and policy frameworks are less developed. This study seeks to fill that gap by contextualizing similar participatory mechanisms within Uasin Gishu County, Kenya, to assess their influence on project sustainability.

In Kenya, Kipkoech and Thuo (2025) examined municipal solid waste management practices and observed that inadequate community consultation and limited participation significantly undermined project ownership and facility maintenance. Their findings suggested that many county governments continue to employ hierarchical, top-down governance structures that marginalize community voices and exclude informal waste handlers from decision-making. This approach has led to low public cooperation, operational inefficiencies, and the premature collapse of several waste management initiatives. To counter these shortcomings, the authors proposed establishing continuous feedback mechanisms that facilitate stakeholder engagement throughout the project cycle. However, their research did not evaluate the financial sustainability and institutional resilience of participatory models within Uasin Gishu County, creating a research gap that this study aims to address by examining stakeholder participation as a determinant of long-term project success.

In India, Jayakumar Menon and Palackal (2022) analyzed participatory waste management systems in Kerala, where decentralized neighborhood committees were introduced as a governance strategy. The study found that waste separation at the household level increased by 45 percent in areas operating under these committees compared to non-participatory zones. The researchers attributed this improvement to

localized decision-making, enhanced accountability, and the empowerment of community actors. They advocated for the replication of decentralized waste management frameworks to enhance efficiency and strengthen community-driven sustainability. Nevertheless, their study did not assess how such frameworks might adapt to the demographic complexity and rapid urbanization of Kenyan counties such as Uasin Gishu, which face unique governance and infrastructural constraints.

Rachman, Komalasari and Hutagalung, (2021) evaluated the impact of neighborhood-level participation on solid waste management outcomes. Their findings demonstrated that community-organized waste collection programs reduced illegal dumping by nearly 50 percent. The researchers concluded that stakeholder participation particularly the integration of informal waste pickers into formal waste management systems enhances social inclusion, improves efficiency, and strengthens environmental performance. However, while their comparative analysis revealed important trends, it lacked localized insights specific to Kenya's devolved system of governance. This gap highlights the need for context-specific assessments, such as the one undertaken in Uasin Gishu County, to understand how participatory mechanisms can be operationalized within local frameworks.

In Nigeria, Abdulfatah (2023) examined how formalizing informal recyclers influences waste management efficiency and stakeholder livelihoods. The study showed that integrating informal recyclers into formal systems led to a 38 percent increase in their income and a notable reduction in waste mismanagement. Through ethnographic case studies in Enugu, the research illustrated how collaborative partnerships between municipal governments, private enterprises, and community actors can promote inclusivity and efficiency. Nonetheless, the study did not analyze the institutional governance mechanisms needed to sustain such collaborations at subnational levels a dimension this research seeks to explore by focusing on the governance structure of Uasin Gishu County.

In Pakistan, Dirks (2021) explored community-based composting programs and discovered that participatory arrangements involving local councils and farmer groups enhanced project viability and increased market uptake of compost products. Their longitudinal findings demonstrated that participatory planning promotes transparency, trust, and innovation while improving economic outcomes for community-managed waste initiatives. They concluded that sustainable waste management depends on meaningful stakeholder engagement. However, the study did not examine how such participatory approaches could be harmonized with Kenya's devolved governance systems. The current study bridges this gap by examining the role of inclusive participation in county-level waste management governance in Uasin Gishu County.

In Nepal, Ghimire et al. (2024) investigated the connection between stakeholder involvement and compliance with waste disposal regulations. Their study found that stakeholder participation in decision-making improved adherence to waste management guidelines by 55 percent and reduced project discontinuity. They recommended institutionalizing stakeholder participation mechanisms at both national and municipal levels to ensure long-term accountability and efficiency. Despite offering significant insights, their study did not address implementation challenges within decentralized governance systems such as those in Kenya, which this research aims to explore through an in-depth county-level analysis.

Finally, in Nairobi County, Kariuki (2025) examined the influence of community engagement in public-private partnership (PPP) projects related to solid waste management. The findings showed that involving community representatives in project design and implementation enhanced public acceptance, minimized resistance to the siting of waste facilities, and strengthened stakeholder trust. Kariuki advocated for the formalization of stakeholder committees within PPP frameworks to institutionalize transparency and participatory decision-making. However, the study did not evaluate how different participatory models ranging from community consultations to multi-stakeholder partnerships can be integrated into a unified stakeholder participation framework. The present study extends this discussion by examining effects of stakeholder participation on the sustainability of solid waste management projects in Uasin Gishu County, Kenya.

CONCEPTUAL FRAMEWORK

The study’s conceptual framework illustrates the relationship between stakeholder participation (independent variable) and sustainability of solid waste management projects (dependent variable).

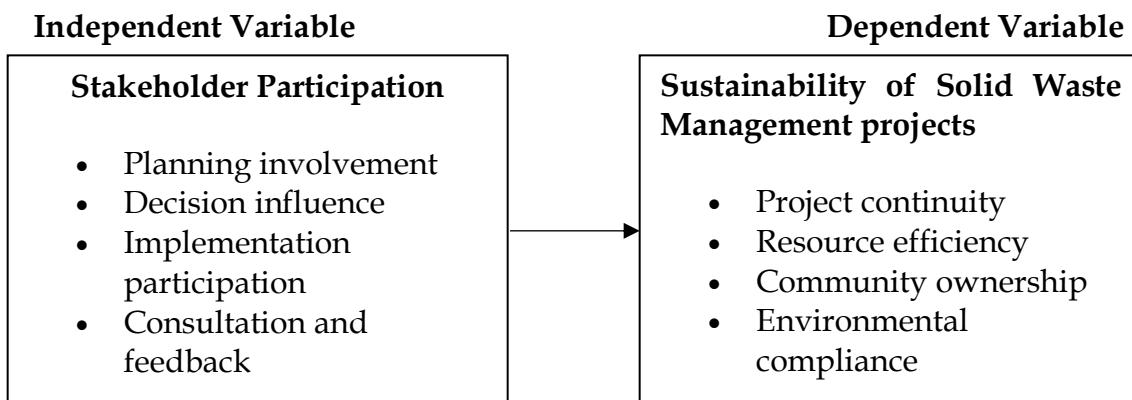


Figure 1: Conceptual Framework

METHODOLOGY

This study aimed to examine how stakeholder participation influences the sustainability of solid waste management projects in Uasin Gishu County, Kenya. The research adopted a descriptive survey design, which is suitable for studies seeking to describe the characteristics, perceptions, and interactions among diverse stakeholder groups. It was appropriate for establishing associations between variables and for testing hypothesized relationships within real-world settings. The target population comprised 250 individuals representing key stakeholder categories, including county environmental officers, officials from the National Environment Management Authority (NEMA), solid waste project managers, community-based organization (CBO) representatives, private waste collectors, and household representatives. Using Yamane's (1967) formula at a 95% confidence level and a 5% margin of error, a sample size of 152 respondents was obtained from the total population of 250.

Sampling was carried out using stratified random sampling to ensure proportional representation of all stakeholder categories. Each stratum represented a stakeholder group, and respondents were randomly selected within each category to minimize bias. Primary data were collected using a structured questionnaire designed to capture quantitative information on stakeholder participation and project sustainability. To ensure clarity, relevance, and validity, the instrument was reviewed by environmental management experts and pre-tested through a pilot study in Nakuru County selected for its comparable demographic, economic, and waste management characteristics to Uasin Gishu.

Quantitative data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS Version 25). Descriptive statistics such as frequencies, percentages, means, and standard deviations were computed to summarize stakeholder characteristics and response patterns. Correlation analysis established associations among stakeholder participation components, while linear regression analysis was employed to test the overall model. The regression equation applied was:

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

Where:

Y = Sustainability of SWMPs

X_1 = Stakeholder participation

β_0 = Constant

β_1 = Coefficient of stakeholder participation

ε = Error term

FINDINGS

Response Rate

The response rate was examined, and the results are presented in Table 1.

Table 1: Response Rate

| Responses | Frequency | Percentages |
|---------------|------------|---------------|
| Responded | 129 | 84.9 |
| Not responded | 23 | 15.1 |
| Total | 152 | 100.00 |

According to the findings in Table 1, out of the 152 major stakeholders in the Solid Waste Management Project (SWMP) in Uasin Gishu County, 129(84.9%) responded to the study, while 23(15.1%) did not respond. This high response rate indicates a strong level of stakeholder engagement and provides a reliable representation of the views and experiences of the stakeholders involved in the SWMP.

Demographic Information of the Respondents

This section entails a systematic study aimed at analyzing the demographics of the people involved in the study. This comparison provides substantive results regarding the heterogeneous qualities of the participants, which include variables in terms of gender, age, educational level, and years of organizational experience.

Gender of Respondents

In this section, the gender aspect of the respondents who took part in the study is discussed. The knowledge of the gender composition is significant because it can reveal how representative and balanced the views in the research are. Figure 2 summarizes the results.

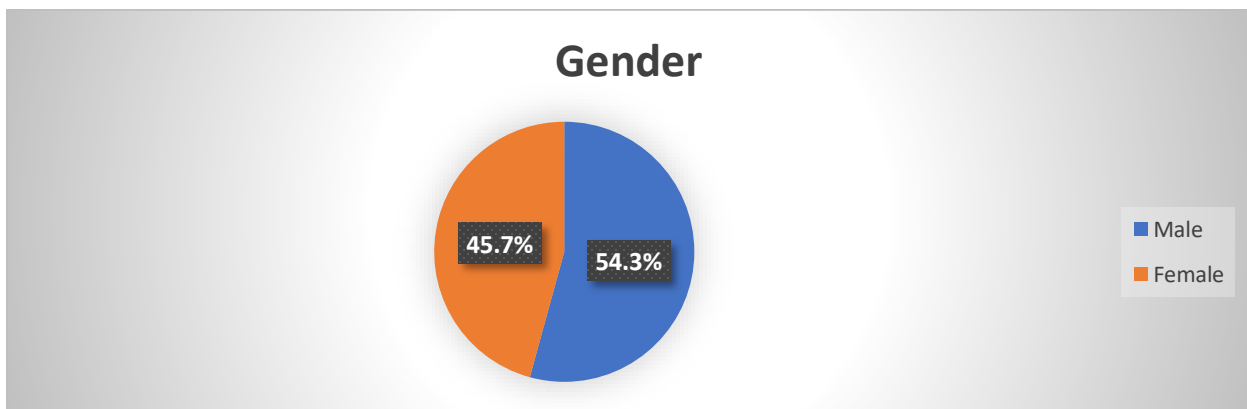


Figure 2: Gender of the Respondents

The study findings of the data presented in Figure 2 demonstrates that the male respondents 70(54.3%), were slightly more in contrast to female respondents 59(45.7%). This showed a relatively equal gender representation implying that both the views of the male gender and the female gender were sufficiently represented in the study. The minor

majority of males also indicates the overall tendency in the demographics of stakeholder involvement in the community projects in the county.

Age Bracket of the Respondents

The research also studied the age categories of the respondents. The importance of learning about the age categories is that it gives an insight into the maturity, experience and views on the stakeholders, which would form their interest and contribution in sustainability of Solid Waste Management Projects in Uasin Gishu County. Figure 3 presents the results.

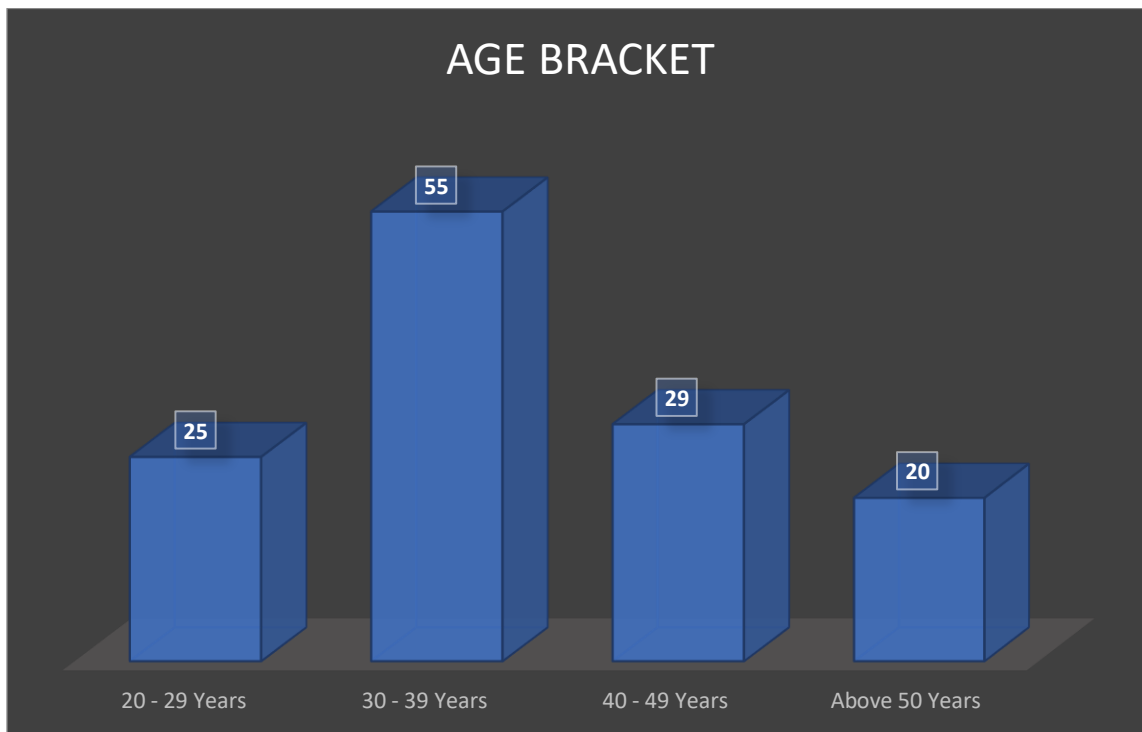


Figure 3: Age Bracket of the Respondents

According to the findings in Figure 3, the majority of the respondents 55(42.6%) were aged between 30 and 39 years, indicating that a significant portion of stakeholders involved in Solid Waste Management Projects in Uasin Gishu County are in their early to mid-career stage. This age group is likely to have considerable professional experience and a strong understanding of community and project needs, which could positively influence their participation and contribution to project sustainability. Respondents aged 40–49 years accounted for 29(22.5%), while those aged 20–29 years and above 50 years represented 25(19.4%) and 20(15.5%) respectively.

Education Level of the Respondents

Similarly, the researcher aimed to ascertain the education level categories of the respondents. The outcomes of this investigation are presented in Figure 4.

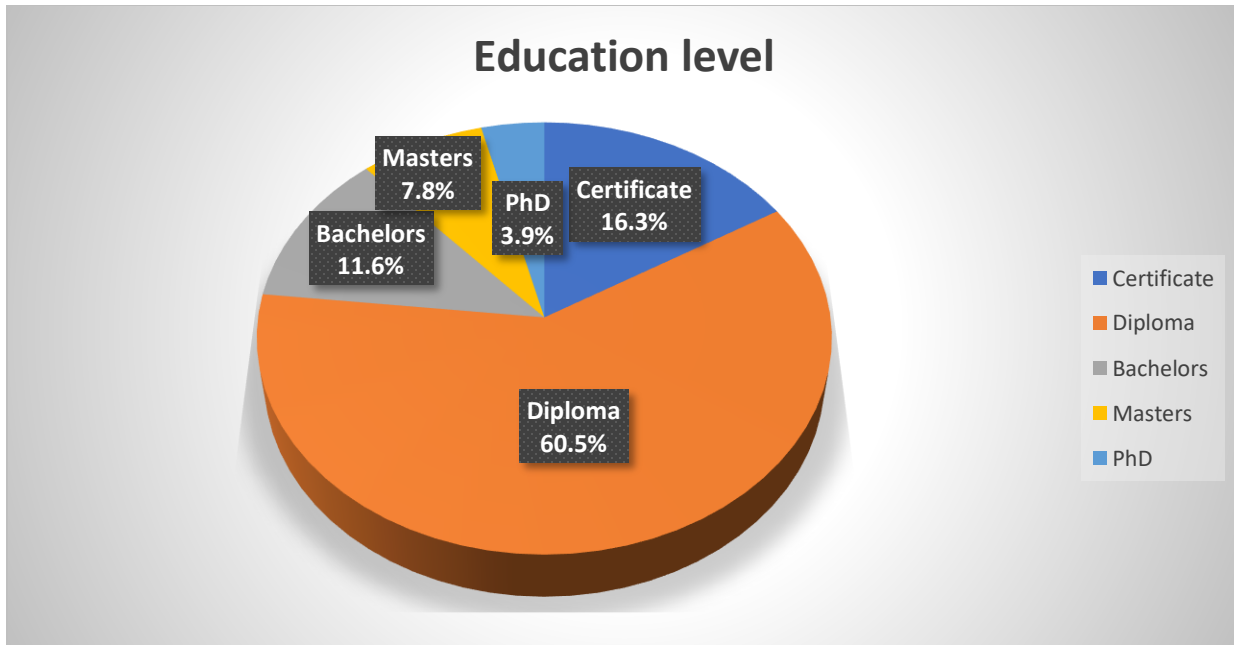


Figure 4: Education Level of the Respondents

According to the findings in Figure 4, the majority of the respondents 78(60.5%) held a diploma, indicating that most stakeholders possess practical knowledge and skills relevant to Solid Waste Management Projects in Uasin Gishu County. Respondents with a certificate accounted for 21(16.3%), while those with a bachelor's degree, master's degree, and PhD represented 15(11.6%), 10(7.8%) and 5(3.9%) respectively. This distribution implies that, although a significant percentage of the stakeholders possess technical and vocational education, there are a few individuals with higher academic levels who can play a role in making the strategic decisions, innovative methods to make the projects more sustainable.

Years of working in the organization

The study also sought to establish the length of time respondents had worked in their respective organizations. Determining the years of service is important because it reflects the respondents' level of experience and familiarity with organizational practices, which may influence their perspectives on stakeholder engagement and sustainability of Solid Waste Management Projects. The findings are presented in Figure 5.

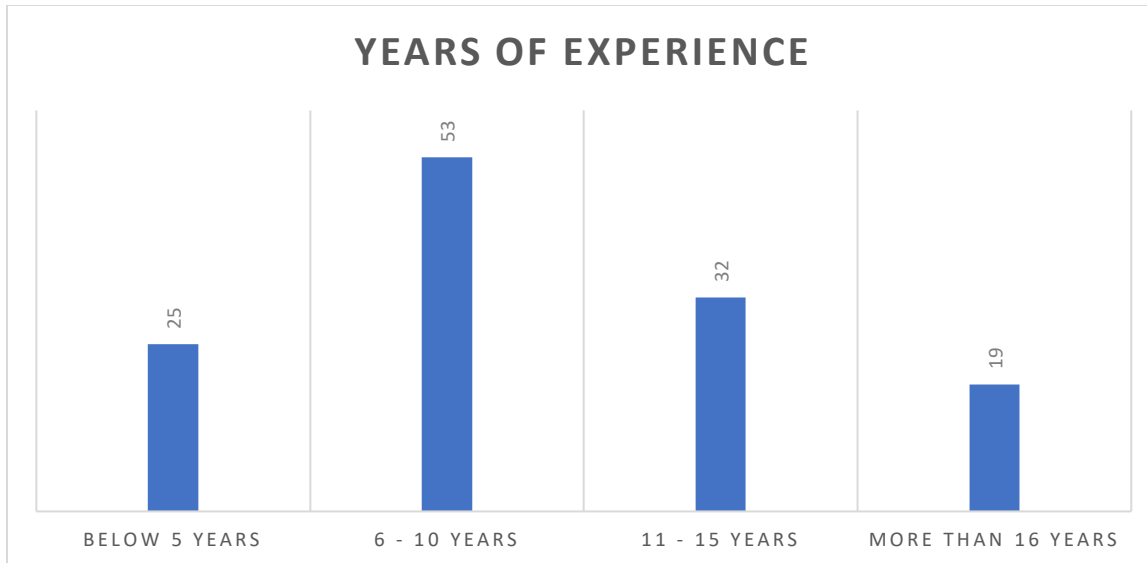


Figure 5: Years of Working in the Organization

According to the findings in Figure 5, the majority of the respondents 53(41.1%) had worked in their respective organizations for 6–10 years, indicating that a significant portion of stakeholders possess substantial experience and familiarity with organizational practices, which could positively influence their participation in and contribution to sustainability of Solid Waste Management Projects in Uasin Gishu County. Respondents with 11–15 years of experience accounted for 32(24.8%), while those with less than 5 years and more than 16 years of experience represented 25(19.4%) and 19(14.7%) respectively. This distribution indicates a proportional ratio of comparatively new workforce, middle-aged employees and long-time staff members, which offered a wide range of information that can increase stakeholder involvement and project sustainability.

Descriptive Statistics for Stakeholder participation

The objective of the study was to determine how stakeholder participation can contribute to sustainability of the solid waste management projects in the Uasin Gishu County in Kenya. In Table 2, the results are provided.

Table 2 : Descriptive Statistics for Stakeholder Participation

| Statements | | SD | D | N | A | SA | Mean | Stdv |
|--|---|-----|-----|-----|------|------|------|------|
| Stakeholders actively participate in planning solid waste management projects. | F | 10 | 11 | 8 | 51 | 49 | 3.91 | 1.22 |
| | % | 7.8 | 8.5 | 6.2 | 39.5 | 38.0 | | |
| Stakeholders influence key decisions in the management of waste projects. | F | 11 | 11 | 8 | 58 | 41 | 3.83 | 1.21 |
| | % | 8.5 | 8.5 | 6.2 | 45.0 | 31.8 | | |

| Statements | | SD | D | N | A | SA | Mean | Stdv |
|---|---|-----|------|-----|------|------|------|------|
| Stakeholders are involved in the implementation of waste management projects. | F | 11 | 14 | 7 | 49 | 48 | 3.84 | 1.27 |
| | % | 8.5 | 10.9 | 5.4 | 38.0 | 37.2 | | |
| Stakeholder involvement in planning leads to better waste management strategies. | F | 9 | 11 | 6 | 54 | 49 | 3.95 | 1.18 |
| | % | 7.0 | 8.5 | 4.7 | 41.9 | 38.0 | | |
| Stakeholders are consulted at all stages of the waste management project. | F | 7 | 14 | 8 | 55 | 45 | 3.91 | 1.16 |
| | % | 5.4 | 10.9 | 6.2 | 42.6 | 34.9 | | |
| The influence of stakeholders is considered when making major decisions. | F | 10 | 15 | 5 | 53 | 46 | 3.85 | 1.24 |
| | % | 7.8 | 11.6 | 3.9 | 41.1 | 35.7 | | |
| Active stakeholder participation improves the effectiveness of waste management projects. | F | 9 | 10 | 4 | 54 | 52 | 4.01 | 1.18 |
| | % | 7.0 | 7.8 | 3.1 | 41.9 | 40.3 | | |

The analysis in Table 2 showed that 100(77.5%) of the respondents agreed that stakeholders actively participate in planning solid waste management projects while 21(16.3%) disagreed that stakeholders actively participate in planning solid waste management projects. The mean rating was 3.91 which indicates that the respondents agreed that stakeholders actively participate in planning solid waste management projects and the standard deviation of 1.22 showed that most responses were close to the mean of 3.91. The results of the research by López-Toro et al., (2016) are similar to current findings that recycling solid urban waste, minimizing pollution, and enhancing corporate social responsibility were the most valued effects by the participants in the survey.

Further, 99(76.8%) of the respondents agreed that stakeholders influence key decisions in the management of waste projects. In addition, 22(17.0%) disagreed that stakeholders influence key decisions in the management of waste projects. The mean of 3.83 showed that the respondents agreed that stakeholders influence key decisions in the management of waste projects and the standard deviation of 1.21 which is below 2 showed that a few of the respondents deviated from the mean of 3.86. The study results are consistent with the study done by Frempong-Jnr, Ametepey and Cobbina, (2023) established that SKM is a unidimensional construct since all the variables extracted unto one underlying component with Total Variance Explained (TVE).

In addition, 97(75.2%) of the respondents agreed that stakeholders are involved in the implementation of waste management projects while 25(19.4%) disagreed that stakeholders are involved in the implementation of waste management projects. The

mean of 3.84 indicates that the respondents agreed that stakeholders are involved in the implementation of waste management projects and the standard deviation of 1.27 which is below 2 showed that a few of the respondents deviated from the mean of 3.84. Findings are consistent with the study done by Yukalang, Clarke and Ross, (2018) found that waste management in rural and urban areas needs to be approached differently. Formulating relevant policies and action plans; minimizing landfill waste through the introduction of a waste segregation system; launching a collection service that encourages source separation; educating both the community and local government personnel; and encouraging the local government to sought external assistance from nearby temples and expertise from the local university.

The results also revealed that 103(79.9%) of the respondents agreed that stakeholder involvement in planning leads to better waste management strategies while 20(15.5%) disagreed that stakeholder involvement in planning leads to better waste management strategies. The mean of 3.95 showed that the respondents agreed that stakeholder involvement in planning leads to better waste management strategies and the standard deviation of 1.18 showed that a few of the respondents deviated from the mean of 3.95. The study findings agreed with Ragossnig and Tunesi, (2018) highlight how the level of internal and external stakeholder involvement is conditional on (changes in) the broader governance context, and the associated power constellations in which stakeholders act (for example, standing of departments, proximity to the decision-making body, changes in political parties, contractual arrangements for staff, individual champions, progress in mainstreaming).

Moreover, 100(77.5%) of the respondents agreed that stakeholders are consulted at all stages of the waste management project while 21(16.3%) disagreed that stakeholders are consulted at all stages of the waste management project. The respondents also agreed that stakeholders are consulted at all stages of the waste management project with a mean of 3.91 and the standard deviation of 1.16 showed that responses were closely clustered around the mean of 3.91. Study results agreed with Kim, Nguyen and Luu, (2020) revealed that the conceptual performance evaluation framework of Construction and Demolition Waste Management (CDWM) consists of six factors; and the attitude toward CDWM emerged as the foremost critical factor.

Similarly, 99(76.8%) of the respondents agreed that the influence of stakeholders is considered when making major decisions. Additionally, 25(19.4%) disagreed that that the influence of stakeholders is considered when making major decisions. The mean of 3.85 indicates that respondents agreed that the influence of stakeholders is considered when making major decisions and the standard deviation of 1.24 showed that variation among responses was small. The findings align with those of Serrano-Cinca, Fuertes-Callén, and Cuellar-Fernandez (2021), who identified a positive correlation between the efficiency of

generating value for shareholders and the efficiency of generating value for certain non-shareholders, although the outcomes are dependent on the selected outputs.

Finally, 106(82.2%) of the respondents agreed that active stakeholder participation improves the effectiveness of waste management projects while 19(14.8%) disagreed that active stakeholder participation improves the effectiveness of waste management projects. The mean of 4.01 indicates that the respondents agreed that active stakeholder participation improves the effectiveness of waste management projects and the standard deviation of 1.18 showed that a few of the respondents deviated from the mean of 4.01. The study findings are consistent with Woldesenbet, (2021) revealed that the top-down and provincial nature of waste governance in Wolkite town is fragile and collapses with limited outcomes, for stakeholders do not take responsibility and accountability that governs and encourages their engagement.

Correlation Analysis Results

The study employed correlation analysis to examine the direction and strength of the relationship between the independent and dependent variables. The results are presented in Table 3.

Table 3 : Correlation Analysis Results

| | | Sustainability of Solid Waste Management Projects | Stakeholder participation |
|--|---------------------|--|----------------------------------|
| Sustainability of Solid Waste Management Projects | Pearson Correlation | 1 | |
| Stakeholder participation | Pearson Correlation | .676** | 1 |
| | Sig. (2-tailed) | .000 | |

The findings presented in Table 3 revealed there is a strong positive significant correlation between stakeholder participation and sustainability of Solid Waste Management Projects in Uasin Gishu County, Kenya ($r=0.676$; $p<0.01$).

Regression Analysis

The researcher employed regression analysis to examine the relationship between the dependent and independent variables.

Table 4: Regression Model Summary

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------------------|----------|-------------------|----------------------------|
| .676 ^a | .457 | .453 | .71915 |

The model summary results in Table 4 showed that $R = 0.676$ and $R^2 = 0.457$. The R^2 value indicates that the independent variable (stakeholder participation) explain 45.7% of the variance in the dependent variable (sustainability of Solid Waste Management Projects).

Table 5 : Model Goodness of Fit Test Results

| | Sum of Squares | df | Mean Square | F | Sig. |
|-------------------|----------------|-----|-------------|---------|-------------------|
| Regression | 55.230 | 1 | 55.230 | 106.791 | .000 ^b |
| Residual | 65.682 | 127 | .517 | | |
| Total | 120.912 | 128 | | | |

The results in Table 5 showed that the findings from the regression model was statistically significant, indicating that the model was appropriately computed and not due to chance, as evidenced by a p-value of 0.000, which is lower than the critical p-value of 0.05. This is further supported by an F-statistic of 106.791.

Table 6: Multiple Regression Coefficients

| | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|----------------------------------|-----------------------------|------------|---------------------------|--------|------|
| | B | Std. Error | Beta | | |
| (Constant) | 1.129 | .141 | | 7.985 | .000 |
| stakeholder participation | .605 | .059 | .676 | 10.334 | .000 |

The regression coefficient results in Table 6 revealed that stakeholder participation has a positive and significant effect on sustainability of solid waste management projects in Uasin Gishu County, Kenya ($\beta_1 = 0.605$, $p = 0.000$).

The optimal model was.

$$Y = 1.129 + 0.605X_1$$

CONCLUSION

This study concluded that stakeholder participation plays a significant role in promoting the sustainability of Solid Waste Management (SWM) projects in Uasin Gishu County. The results showed that the projects are more effective and successful in the long run in situations when the stakeholders are engaged in the process of planning, decision-making, and implementation. It was found that consultation at every stage of the project enhanced the strategies, inclusivity, and accountability, and the key aspect of accounting stakeholder influence on important decisions facilitated trust and ownership. Hence, stakeholder participation was identified as very important in enhancing the waste management performance and ensuring the sustainability of SWM programs.

RECOMMENDATIONS

The findings reinforce Stakeholder Theory, validating that inclusive governance enhances organizational legitimacy and sustainability in public projects. The study recommends that County governments should institutionalize stakeholder engagement committees in all waste management initiatives to ensure continuous participation and feedback. Practitioners should design participatory frameworks that integrate local communities, waste collectors, and private companies for effective implementation and accountability.

REFERENCE

- Abdulfatah, L. A., Yahaya, O. A., Agbi, S. E., & Tauhid, S. (2023). Influence of ownership concentration on integrated reporting of non-financial services firms in Nigeria: Moderating influence of firm value. *African Banking and Finance Review Journal*, 3(3), 35–47. <https://doi.org/10.58764/abfrj.v3i3.207>
- Alabi, M. A., Kasim, O. F., & Lasisi, M. O. (2020). Public-private partnership (PPP) in residential solid waste management in Ibadan: Challenges and opportunities. *Journal of Geography and Regional Planning*, 13(1), 30–40. <https://doi.org/10.5897/JGRP2019.0787>
- Amugsi, D. A., Muindi, K., & Mberu, B. U. (2022). Implementation of solid waste management policies in Kenya: Challenges and opportunities. *Cities & Health*, 6(3), 528–535. <https://doi.org/10.1080/23748834.2020.1796288>
- Awino, F. B., & Apitz, S. E. (2024). Solid waste management in the context of the waste hierarchy and circular economy frameworks: An international critical review. *Integrated Environmental Assessment and Management*, 20(1), 9–35. <https://doi.org/10.1002/ieam.4783>
- Awoonor, M. D. A. M. D. (2025). Enhancing local governance through community participation in rural development projects in Nigeria: Literature review. *African Journal on Impact Economic and Social Studies (AJIESS)*, 3(2). <https://doi.org/10.59337/ajieess.v3i2.178>
- Debrah, J. K., Teye, G. K., & Dinis, M. A. P. (2022). Barriers and challenges to waste management hindering the circular economy in Sub-Saharan Africa. *Urban Science*, 6(3), 57. <https://doi.org/10.3390/urbansci6030057>

- Dirks, A. (2021). *A community compost exchange manual: Reconnecting municipal organic waste and soil management*. <https://doi.org/10.13140/RG.2.2.22225.20322>
- Freeman, R. E., & Phillips, R. A. (1984). Stakeholder theory: A libertarian defense. *Business Ethics Quarterly*, 12(3), 331–349. <https://doi.org/10.2307/3858020>
- Freeman, R. E., Dmytriiev, S. D., & Phillips, R. A. (2021). Stakeholder theory and the resource-based view of the firm. *Journal of Management*, 47(7), 1757–1770. <https://doi.org/10.1177/0149206321993576>
- Ghimire, M., Khanal, A., Bhatt, D., Dahal, D., & Giri, S. (2024). Agroforestry systems in Nepal: Enhancing food security and rural livelihoods – A comprehensive review. *Food and Energy Security*, 13(1), e524. <https://doi.org/10.1002/fes3.524>
- Hart, A. O. (2024). Institutional framework for sustainable community engagement for development in Nigeria. *Journal of Humanities and Social Policy*, 10(2), 14–37. <https://doi.org/10.31014/aior.1991.10.2.456>
- Jayakumar Menon, V., & Palackal, A. (2022). Centralized and decentralized approaches to solid waste management – A case study. *The Holistic Approach to Environment*, 12(4), 155–164. <https://doi.org/10.33765/thate.12.4.155>
- Kariuki, D. K. (2025). *Factors affecting service delivery by solid waste collecting firms under a public-private partnership arrangement in Nairobi City County* (Doctoral dissertation, COHRED-JKUAT). <https://doi.org/10.17605/OSF.IO/7N9ZQ>
- Kipkoech, R., & Thuo, A. (2025). Assessment of solid waste management in Nairobi City County, Kenya. *Environmental Technology and Science Journal*, 16(1), 183–193. <https://doi.org/10.37284/etjs.16.1.627>
- Kituku, E. (2020). *Quest for environmental integration in Kenya's municipal solid waste management regulatory framework* (Doctoral dissertation, University of Nairobi). <http://erepository.uonbi.ac.ke/handle/11295/153504>
- Nakamura, Y., Okamoto, W., Kato, T., Esaki, T., Kato, K., Komatsu, Y., ... & Yoshino, T. (2021). Circulating tumor DNA-guided treatment with pertuzumab plus trastuzumab for HER2-amplified metastatic colorectal cancer: A phase 2 trial. *Nature Medicine*, 27(11), 1899–1903. <https://doi.org/10.1038/s41591-021-01524-9>
- Ogutu, B. O., D'Adamo, F., & Dash, J. (2021). Impact of vegetation greening on carbon and water cycle in the African Sahel-Sudano-Guinean region. *Global and Planetary Change*, 202, 103524. <https://doi.org/10.1016/j.gloplacha.2021.103524>
- Otundo, R. M. (2024). *Innovative approaches to solid waste management in Kenya's urban areas: A case study of Mombasa County in advancing sustainable development goals*. <https://doi.org/10.2139/ssrn.4579438>
- Rachman, I., Komalasari, N., & Hutagalung, I. R. (2021). Community participation on waste bank to facilitate sustainable solid waste management in a village. *Journal of Environmental Science and Sustainable Development*, 4(2), 327–345. <https://doi.org/10.7454/jessd.v4i2.1124>
- Steinhorst, J., & Beyerl, K. (2021). First reduce and reuse, then recycle! Enabling consumers to tackle the plastic crisis—Qualitative expert interviews in Germany.

- Journal of Cleaner Production*, 313, 127782.
<https://doi.org/10.1016/j.jclepro.2021.127782>
- Szpilko, D., de la Torre Gallegos, A., Jimenez Naharro, F., Rzepka, A., & Remiszewska, A. (2023). Waste management in the smart city: Current practices and future directions. *Resources*, 12(10), 115. <https://doi.org/10.3390/resources12100115>
- Valentinov, V., & Hajdu, A. (2021). Integrating instrumental and normative stakeholder theories: A systems theory approach. *Journal of Organizational Change Management*, 34(4), 699–712. <https://doi.org/10.1108/JOCM-10-2020-0337>
- Vázquez-Rowe, I., Mogrovejo, P., Muñoz-Sovero, E., Socorro, P. G., Murga, J., Madhanaroopan, S., ... & Quispe, I. (2025). Life cycle assessment of organic chocolate production in Peru. *Cleaner Environmental Systems*, 100322. <https://doi.org/10.1016/j.cesys.2025.100322>