



Community Values and Sustainability of Beach Management Units: Does Project Committee Composition Matter?

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Abstract: *The sustainability of Beach Management Units (BMUs) in Homabay County, Kenya, is often challenged by a misalignment between community values and governance structures. This study investigates the moderating effect of project committee composition on the relationship between community values and BMU sustainability. Utilizing a mixed-methods research design, the study sampled 647 respondents from a population of 7,151 individuals across 143 BMUs at active fishing sites. Respondents, including key informants and fishing participants from five sub-counties along Lake Victoria, were selected through stratified random, proportionate stratified, and purposive sampling techniques. Quantitative analysis revealed that community values ($\beta = 0.847, p < 0.05$) had a significant positive effect on BMU sustainability, while project committee composition moderated this relationship ($\beta = 0.002, p < 0.05$). The inclusion of project committees accounted for 75.7% of the variance in BMU sustainability, further supporting the critical role of governance structures. Qualitative findings highlighted that local ecological knowledge, such as understanding fish species behavior and seasonal shifts, is essential for sustainable fishing practices. The composition of BMU project committees particularly the inclusion of local fishermen, environmental advocates, and community elders contributed to more balanced decision-making, addressing both economic needs and ecological considerations. This study concludes that well-structured project committees aligned with community values act as a vital bridge between traditional knowledge and modern sustainability efforts. They ensure culturally sensitive and environmentally responsible decision-making, fostering long-term BMU sustainability. The findings underscore the need for inclusive, culturally aligned governance structures in BMUs, with policymakers encouraged to integrate community values into beach management strategies.*

Keywords: *Community Values, Culture, Sustainability, Beach management Units, Project Committee Composition*

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1. Introduction

In recent years, sustainability in the management of natural resources, particularly coastal and freshwater fisheries, has emerged as a significant global concern. The sustainability of these resources requires governance frameworks that integrate ecological, social, economic, and cultural factors. Despite ongoing efforts to promote sustainable fishing practices and conserve aquatic

ecosystems, challenges persist, with unsustainable practices continuing in many parts of the world. A significant reason for these challenges is the weak institutional structures, lack of community ownership, and ineffective governance mechanisms that fail to address the complexities of local ecosystems (Baulch, 2024). In response to these challenges, community-based management approaches such as Beach Management Units (BMUs) have been introduced in several regions to create decentralized governance systems. However, the

role that community values play in the effectiveness of these BMUs remains insufficiently explored, particularly concerning how the composition of project committees influence sustainability outcomes.

Community values refer to the shared beliefs, norms, traditions, and socio-cultural practices that guide behaviors and decision-making within society. In the context of fisheries management, these values may include respect for traditional ecological knowledge, responsible fishing practices, and communal ownership of resources (Mazzocchi, 2020). Studies indicate that when community values are incorporated into governance structures, they foster resource stewardship, improve compliance with fishing regulations, and promote collective action to protect the environment (Etiegni et al., 2019). Conversely, when these values are misaligned or ignored by institutional mechanisms, conflicts often arise, leading to poor compliance with regulations, overfishing, and environmental degradation (Njaya et al., 1999). This dynamic suggests that for BMUs to be successful, it is critical that they reflect the values of the communities they serve.

Across various global contexts, community values have played an essential role in the sustainability of fisheries management initiatives. For instance, in Latin America, community-driven fisheries governance models such as Reservas Extrativistas in Brazil have successfully integrated local values into conservation policies (Begossi et al., 2019). Similarly, co-managed fisheries in Colombia and Mexico that respect indigenous knowledge have experienced improved compliance and sustainability outcomes (Botero et al., 2014). In contrast, in some European countries like Italy and Portugal, weak community involvement has led to significant challenges in achieving sustainable fisheries (Mazzocchi, 2020). Likewise, in East Africa, BMUs have been introduced in countries like Tanzania, Uganda, and Kenya as a response to declining fish stocks in Lake Victoria. Although BMUs have shown potential for improving fisheries management through decentralization, issues such as weak enforcement, corruption, and the exclusion of key stakeholders continue to impede their success (Makwinja et al., 2021).

Within the Kenyan context, BMUs are legally mandated to involve local fishing communities in decision-making processes. However, the effectiveness of these units has varied significantly due to differences in the composition of project committees (Etiegni et al., 2019). Research suggests that when BMU committees are inclusive and reflect the diversity of community values by including fishermen, women, youth, and elders, the result is improved compliance with regulations and enhanced sustainability (Obiero et al., 2020). In contrast, when elite capture a situation where a small group monopolizes decision-making and political interference dominate, the governance structures of BMUs become weakened. This reduces the legitimacy of these units and undermines their ability to enforce regulations, leading to unsustainable fishing practices (Nunan et al., 2018).

The composition of project committees within BMUs plays a critical role in determining sustainability outcomes. A well-structured committee that includes diverse community representation can foster greater legitimacy, which is essential for securing compliance with fishing regulations (Berkes, 2008). In addition, inclusive committees are more effective at facilitating dialogue among stakeholders, resolving conflicts over resource use, and ensuring that benefits are distributed equitably. These committees also have the capacity to integrate traditional ecological knowledge, which enhances sustainable fishing practices by blending scientific and indigenous knowledge systems (Lucrezi et al., 2019). Moreover, when committees enjoy strong backing from the community, they are better positioned to enforce regulations and combat illegal fishing practices (Etiegni et al., 2019).

1.2 Statement of the Problem

Despite the importance of BMUs in fisheries management, there are significant research gaps that need to be addressed. Firstly, there has been limited research on the moderating role of project committee composition in the relationship between community values and the sustainability of BMUs (Etiegni et al., 2019). Secondly, the impact of diverse community representation within BMUs on decision-making and the enforcement of sustainable fishing regulations remains underexplored (Obiero et al., 2020). Additionally, there is a lack of empirical evidence on how community values shape the effectiveness of governance structures in BMUs across different cultural and ecological contexts. Finally, few studies have examined how BMUs balance the economic, environmental, and social dimensions of sustainability through inclusive governance mechanisms (Lucrezi et al., 2019). This study aims to fill these research gaps by examining how community values and project committee composition interact to influence the sustainability of BMUs in Homabay County, Kenya.

1.3 Objective of the study

To examine how community values, interact with committee composition to shape governance outcomes and ecological sustainability in Beach Management Units in Kenya.

2. Literature Review

Beach Management Units (BMUs) are community-based institutions aimed at fostering participatory fisheries management and sustainable marine ecosystems (Nunan et al., 2021; FAO, 2022). Particularly across East African riparian zones such as Lake Victoria and coastal Kenya—BMUs have become central to fisheries policy. Their performance, however, is influenced by the composition of the committees that run them, which in turn impacts legitimacy, enforcement of rules, and

sustainability (Mbaru et al., 2022; Kamau & Chepkemboi, 2023).

Community values such as trust, reciprocity, transparency, and embedded knowledge—are foundational to the success of BMUs. Studies by Nunan et al. (2021) and Abunge, Coulthard, and Daw (2022) emphasize that trust and cultural legitimacy enhance rule compliance and ecological stewardship. These values strengthen social capital, which is vital for collective action.

Moreover, Mbaru et al. (2022) argue that where community values are embedded within BMU operations, there is a higher tendency for stakeholders to engage in conservation behaviors. However, they caution that these same values can sometimes sustain power asymmetries, particularly where traditional hierarchies exclude women, youth, and minority groups.

Relational values, such as spiritual attachment to the lake or ocean, are also emerging as critical components of marine governance (Coulthard et al., 2023). These deepen the moral and emotional commitment of communities to conservation but are rarely considered in project designs or leadership selection processes.

Recent research points to the central role of project committee composition in determining the sustainability of BMUs. Ochiemo et al. (2020) and Kamau and Chepkemboi (2023) emphasize that committees with diverse representation—age, gender, economic status, and leadership training—tend to be more accountable and responsive. BMUs with more women and youth involved in leadership reported improved communication, trust, and transparency.

However, tokenism remains a critical concern. Studies by Ochiemo and Orina (2023) show that while women may occupy positions in BMUs, their voices are often marginalized in decision-making. Similarly, Onyango et al. (2022) found that youth involvement was often limited to logistical roles rather than leadership and policy formulation.

Bennett et al. (2020) assert that inclusive leadership contributes to “procedural justice,” where all community members feel heard and respected. Yet, structural barriers—such as education gaps and gender norms—continue to inhibit genuine inclusion, indicating that composition reforms must be coupled with capacity building and attitudinal change.

Critical governance scholars challenge the assumption that co-management structures like BMUs are inherently democratic. Jentoft and Chuenpagdee (2020) argue that BMUs often reproduce community power dynamics and may serve elite interests unless deliberate efforts are made to ensure equity and representation. Similarly,

Musavengane and Leonard (2021) note that without attention to internal governance dynamics, participatory structures risk being superficial.

In the Kenyan context, Owino and Amutabi (2021) observe that political interference in BMU elections often undermines local accountability. Elites tend to hijack BMUs as economic platforms, sidelining genuine fisher representation and threatening long-term sustainability.

Leadership diversity enhances resilience in BMUs by enabling broader perspectives and problem-solving strategies (Kittinger et al., 2021). Committees composed of members with varied experiences and backgrounds are better equipped to adapt to environmental, social, and economic shocks.

Yet, resilience also depends on external enablers. Orina et al. (2022) found that even well-composed BMUs faced difficulties when lacking training, resources, or institutional support from county governments and NGOs. This suggests that internal composition must be supported by strong linkages with external networks to promote adaptive governance.

The literature affirms the importance of community values and project committee composition in promoting BMU sustainability. However, several gaps remain. First, few studies explore how specific traits of committee members (e.g., level of education, leadership background, or ethnic affiliation) influence decision-making processes. Second, while gender and youth inclusion are widely advocated, their actual impact on BMU performance remains under-researched.

This study aims to bridge these gaps by critically examining how community values interact with committee composition to shape governance outcomes and ecological sustainability in BMUs, especially within the Kenyan and East African context.

2.1 Theoretical Framework

2.1.1 Hardin’s Theory of the Tragedy of the Commons (1968)

Hardin’s theory highlights the challenges of managing shared resources, such as fisheries, where individuals acting in their self-interest can overexploit the resource, leading to depletion and unsustainability. This theory is particularly relevant to BMUs in the context of lakefront management. In shared fishing grounds, without proper regulatory structures or community-based oversight, fishermen may engage in unsustainable practices such as overfishing or using illegal fishing methods. The theory suggests that for long-term sustainability, the management of such resources must include regulatory

frameworks or collaborative governance models that can ensure equitable and sustainable resource use.

This study applies Hardin's theory to explain the role of BMUs in mitigating the tragedy of the commons by implementing rules and engaging communities in co-management. The involvement of local communities, especially through committee representation, helps to moderate overuse and foster sustainable practices. However, the effectiveness of these committees, and their ability to uphold community values, depends on their composition and how well they reflect the community's diverse interests. The theory addresses the issues related to unsustainable fishing practices and overexploitation of lake resources, which is one of the core problems affecting BMUs. This theory provides a framework for understanding why community values and collective action are necessary to avoid resource depletion.

2.1.2 Network Analysis Theory (Bodin & Crona, 2009)

Network Analysis Theory focuses on the structure of relationships within a community or organization and how these relationships influence resource governance and management outcomes. This theory is essential in understanding how the composition of project committees within BMUs can influence decision-making processes, information sharing, and the effectiveness of governance. The theory posits that committees with strong, diverse networks can foster greater collaboration, trust, and knowledge exchange, all of which are critical for the sustainability of BMUs. When committee members represent various segments of the community, including fishermen, environmental advocates, and policymakers, they bring in diverse perspectives and knowledge, contributing to better governance. Strong social ties and networks also help integrate community values into the decision-making process, thereby promoting sustainable practices that align with both ecological and cultural needs. The theory explains how the structure and composition of BMU project committees can influence sustainability. This framework is applied to examine how community values are integrated into the committees' decision-making processes and how the committees' composition affects the sustainability of beach management efforts.

2.2 Empirical Literature?

3. Methodology

The study adopted a mixed-method research design, which integrates both quantitative and qualitative approaches, to investigate the influence of culture on the sustainability of Beach Management Units (BMUs) in Homabay County, Kenya. This approach combines the philosophical frameworks of post-positivism and interpretivism, providing flexibility and depth to explore complex research questions. Through a combination of open-ended and closed-ended questionnaires, as well as focus group discussions, the study seeks to answer both confirmatory and exploratory questions about BMUs' cultural influence and sustainability. A sample of 647 respondents was selected from an estimated population of 7,151 individuals involved in fishing activities across five sub-counties in Homabay. The sampling process used stratified random, proportionate stratified, and purposive sampling methods.

To ensure the reliability and validity of the research instruments, Cronbach's Alpha and factor analysis were employed. The results showed that all study variables exceeded the reliability threshold of 0.70, while the Kaiser-Meyer-Olkin (KMO) and Bartlett's tests confirmed the adequacy and significance of the sample, justifying further statistical analysis. For data analysis, the study used a hierarchical regression model to test the research hypotheses, examining the relationship between community values and the sustainability of BMUs. The model also explored the moderating role of Project Committee Composition (PCC) in this relationship. The Likert scale was used to measure respondents' perceptions, with sustainability being the dependent variable. The equations established were used to evaluate the combined effect of community values, PCC, and their interaction on the sustainability of BMU projects.

4. Results and Discussion

4.1. Demographic Characteristics

The demographic composition of the respondents in this study is essential in understanding the moderating effect of project committee composition on the relationship between community values and the sustainability of Beach Management Units (BMUs) in Homa Bay County, Kenya. The distribution of the respondents' gender, education level, age, and occupation provide a foundation for analyzing how committee composition influences sustainable outcomes.

Table 1: Demographic Characteristics

Demographic Variables		Frequency	Percent
Gender	Male	176	56.6
	Female	135	43.4
	Total	311	100.0
Education Level	Primary Level	130	41.8
	Secondary Level	122	39.2
	Diploma Level	39	12.5
	Degree	13	4.2
	Postgraduate	7	2.3
	Total	311	100.0
Age of Respondents	18-22 Years	24	7.7
	23-27 Years	36	11.6
	28-32 Years	50	16.1
	32-36 Years	58	18.6
	37-41 Years	58	18.6
	42 and above Years	85	27.3
	Total	311	100.0
Occupational Activity	Fisherman	79	25.4
	Boat owners	36	11.6
	Committee member	36	11.6
	fisheries official	38	12.2
	Fishmonger	33	10.6
	Business person	89	28.6
	Total	311	100.0

Results in table 1 above indicate that the majority of respondents were male (n=176, representing 56.6%), while females accounted for 43.4% (n=135). This finding reflects an ongoing effort to address gender disparity in the fisheries sector, particularly with the implementation of Kenya's constitutional two-thirds gender rule. The growing participation of women in BMUs enhances inclusivity in decision-making processes, which has been corroborated by previous studies, such as Agarwal (2009), who highlighted that gender-balanced committees in resource management projects tend to achieve better conservation outcomes. Similarly, Leisher et al. (2016) found that women's participation in marine protected areas in developing countries contributed to more equitable and sustainable governance practices. In BMUs, this gender inclusion could strengthen community values by ensuring that both male and female perspectives are integrated into the sustainability strategies, leading to more balanced and resilient outcomes.

The results reveal that a substantial portion of respondents had primary-level education (n=130,

representing 41.8%), followed by secondary-level (n=122, 39.2%), diploma holders (n = 39, 12.5%), and a small percentage with degree-level qualifications (n= 13, 4.2%). Only 2.3% (n=7) had postgraduate education. This diversity in educational backgrounds reflects the multifaceted composition of the BMUs. Pretty and Ward (2001) noted that individuals with diverse educational levels bring varied perspectives to decision-making, integrating both technical expertise and local knowledge. The balance between formal education and community-based knowledge in BMUs supports sustainable resource management by ensuring that decision-making incorporates practical experience and scientific insights. The fact that most respondents had at least a secondary education indicates that they are likely capable of comprehending and engaging with sustainability issues, enhancing the BMU's capacity for effective governance.

The distribution of respondents by age indicates that the majority were aged 42 years and above (n = 85, 27.3%), followed by those between 32–36 years (18.6%) and 37–41 years (18.6%). This age diversity plays a significant role in decision-making processes within the BMUs.

Studies, such as McDermott et al. (2013) and Berkes et al. (2000), have shown that age diversity fosters intergenerational knowledge transfer, combining the wisdom of older members with the innovative approaches of younger individuals. In this context, the age structure of the BMUs in Homa Bay County suggests that these committees benefit from both traditional ecological knowledge and contemporary sustainability practices. By leveraging the perspectives of different age groups, BMUs can craft strategies that resonate with community values while addressing modern sustainability challenges.

Respondents engaged in various occupations, with the largest group being businesspeople ($n = 89$, 28.6%), followed by fishermen ($n = 79$, 25.4%). Fisheries officials (12.2%), boat owners (11.6%), committee members (11.6%), and fishmongers (10.6%) were also represented. The variety of occupational roles within the BMUs ensures that decision-making is inclusive of all stakeholders involved in the fisheries value chain. Ostrom (1990) emphasized the importance of stakeholder diversity in common-pool resource governance, noting that diverse occupational backgrounds enrich decision-making by bringing different priorities and expertise to the table. Similarly, Jentoft and Chuenpagdee (2009) found that occupational diversity in fisheries co-management fosters a holistic approach to resource management, considering both economic viability and ecological sustainability. In the case of BMUs, this occupational diversity strengthens the alignment between community values and sustainability goals by ensuring that the interests of all key stakeholders are reflected in management practices.

The findings of this study align with broader research on the role of committee composition in community-based natural resource management (CBNRM) and fisheries governance. Fabricius et al. (2007) in their studies on CBNRM and BMUs in Kenya, respectively, emphasized that the composition of management committees is critical to achieving sustainable outcomes. Both studies

highlighted that diverse committees incorporating a balance of gender, age, education, and occupational roles are better equipped to handle the complex challenges associated with resource management. This diversity allows committees to address varying community values, mediate conflicts, and implement inclusive governance practices. Furthermore, contemporary studies, such as Njaya et al. (2012), found that BMUs with representative and diverse committees were more successful in promoting sustainable fishing practices and ensuring community compliance with regulations. These findings are consistent with the current study, which demonstrates that BMUs in Homa Bay County, by incorporating a wide range of demographic characteristics, are well-positioned to foster sustainability through inclusive governance.

4.2 Community Values and Sustainability of Beach Management Units

The role of community values in shaping the sustainability of Beach Management Units (BMUs) is a critical aspect of coastal resource governance. Community values encompass a shared set of beliefs, norms, and cultural practices that influence collective behavior and decision-making processes. These values are deeply ingrained in traditional knowledge systems and often emphasize harmonious coexistence with nature, respect for local ecosystems, and collective responsibility for resource management. In the context of BMUs, community values play a pivotal role in fostering local compliance with resource management practices, enhancing cooperation among stakeholders, and ensuring the long-term sustainability of fishing activities. This section explores how community values impact the sustainability of BMUs, highlighting the relationship between these values and the success of resource management strategies within coastal communities in Homabay County, Kenya as shown below.

Table 2. Descriptive Statistics for Community Values and Beach Management

	1	2	3	4	5	M	SD
	F (%)	F (%)	F (%)	F (%)	F (%)		
Elders were respected as a repository of traditional knowledge on fishing practices and fisheries management	5(1.60)	17(5.50)	22(7.10)	134(43.10)	133(42.80)	4.20	.908
Traditional knowledge has been incorporated in the management of current BMUs	13(4.20)	29(9.30)	42(13.50)	143(46.00)	84(27.00)	3.82	1.061
People are responsible in execution of fishing policies and regulation	9(2.90)	44(14.10)	36(11.60)	128(41.20)	94(30.20)	3.82	1.102
There is non-compliance of community values on fishing practices and management of BMUs	19(6.10)	91(29.30)	37(11.90)	89(28.60)	75(24.10)	3.35	1.292
Existing community values helps team members to live and work with people of different backgrounds	7(2.30)	18(5.80)	17(5.50)	150(48.20)	119(38.30)	4.14	.924
BMUs leaders are honest in their dealings	28(9.00)	41(13.20)	36(11.60)	109(35.00)	97(31.20)	3.66	1.287
Overall Mean and Standard Deviation						3.83	1.10

The results presented in Table 2 above provide key insights into the respondents' perspectives on community values and their role in the sustainability of Beach Management Units (BMUs) in Homa Bay County, Kenya. The overall mean response across all items ($M = 3.83$) on the 5-point Likert scale indicates that the respondents generally held a neutral stance on items related to community values. This neutral position suggests that while community values are acknowledged, there may be a lack of strong consensus or commitment regarding their integration and influence on BMU sustainability. This finding aligns with Kanyinga and Long's (2012) study on community participation and governance in Kenya, which found that although local values and traditions are often recognized in resource management discourse, they are inconsistently applied in practice due to divergent stakeholder interests and weak institutional anchorage. Their research highlights how the symbolic recognition of community values does not always translate into sustained collective action, particularly in contexts with minimal facilitative governance structures. The relatively low standard deviation ($SD = 1.10$) indicates that the responses were consistent, with only minor deviations from the mean, reflecting a homogeneity in opinion among the respondents.

4.2.1 Respect for Elders as a Repository of Traditional Knowledge

The highest agreement was observed regarding the statement that elders were respected as a repository of traditional knowledge on fishing practices and fisheries management ($M = 4.20$, $SD = 0.908$). This high mean score reflects a strong cultural norm within the

community, where elders are recognized as custodians of valuable indigenous knowledge critical for sustainable fisheries management. The low standard deviation ($SD = 0.908$) indicates that most respondents were in agreement on this issue, suggesting that traditional knowledge is still valued within the community, even though its application may be underutilized in contemporary management. This finding aligns with studies such as Berkes et al. (2000) and Mogaka et al. (2021), which emphasize the significance of traditional ecological knowledge in sustainable resource management. These studies argue that communities that respect and incorporate traditional knowledge tend to have more effective and resilient management systems for natural resources, such as fisheries.

4.2.2 Traditional Knowledge in BMUs and Policy Compliance

Respondents were neutral regarding the incorporation of traditional knowledge into the management of current BMUs ($M = 3.82$, $SD = 1.061$) and the responsibility in the execution of fishing policies and regulations ($M = 3.82$, $SD = 1.102$). This neutral stance could suggest that, while traditional knowledge is respected, its actual integration into the formal management processes of BMUs is limited. Moreover, the lack of strong agreement on policy compliance may indicate challenges in effectively enforcing fishing regulations within the community. The standard deviations here suggest a wider range of opinions compared to the respect for elders, indicating that respondents' views on the effectiveness of current BMU governance and the role of traditional knowledge are more varied. Previous studies, such as Obiero et al. (2015), have found similar issues in Kenyan BMUs, where formal governance structures often fail to fully integrate traditional practices, leading

to gaps in compliance and enforcement. This can create a disconnect between community values and the formal management of fisheries, undermining sustainability efforts.

4.2.3 Non-Compliance with Community Values and Beach Management Units Leadership

The study further found that respondents were neutral regarding the non-compliance of community values on fishing practices and BMU management ($M = 3.35$, $SD = 1.292$) and the honesty of BMU leaders ($M = 3.66$, $SD = 1.287$). These lower mean scores and higher standard deviations suggest more uncertainty or dissatisfaction with the current state of adherence to community values and leadership integrity within BMUs. The wide range of opinions on non-compliance ($SD = 1.292$) highlights potential challenges in maintaining strong community-based governance structures, where deviations from traditional norms and values may be affecting BMU sustainability. This finding concurs with studies such as Jentoft and Chuenpagdee (2009), which highlight the critical role of leadership integrity in co-management arrangements. Poor leadership and non-compliance with community values can significantly hinder the effectiveness of BMUs, leading to unsustainable fishing practices and resource depletion.

4.2.4 The Role of Community Values in Teamwork and Inclusivity

Interestingly, respondents agreed that existing community values helped team members to live and

work with people of different backgrounds ($M = 4.14$, $SD = 0.924$). This finding indicates that while there may be challenges in integrating traditional knowledge and ensuring compliance, community values still play a significant role in promoting inclusivity and collaboration within BMUs. The relatively low standard deviation ($SD = 0.924$) suggests that respondents generally agreed on the importance of these values in fostering social cohesion and teamwork, which are essential for sustainable management. This aligns with the work of Pretty and Ward (2001), who emphasize the role of strong social values in facilitating cooperation and collective action in community-based resource management. When communities share common values, they are more likely to work together toward common goals, such as the sustainability of BMUs.

4.3 Project Committee Composition on Community Values and BMU Sustainability

The study sought to explore the moderating effect of project committee composition on the relationship between community values and the sustainability of BMUs. As previously discussed, the demographic diversity of committee members across gender, education, age, and occupation plays a significant role in shaping how community values are integrated into decision-making processes. The presence of individuals from diverse backgrounds in BMU committees can enhance the application of community values in governance by ensuring that different perspectives are considered. Respondents were asked to indicate their agreement on seven items related to the composition of project committees as shown in Table 3.

Table 3: Descriptive Statistics for Project Committee Composition

	1 F (%)	2 F (%)	3 F (%)	4 F (%)	5 F (%)	M	SD
Project committee size determines the sustainability of the BMU	8(2.60)	22(7.10)	28(9.00)	157(50.50)	96(30.90)	4.00	.957
Project committee membership diversity has an effect on the management and sustainability of the BMUs	2(0.60)	34(10.90)	39(12.50)	156(50.20)	80(25.70)	3.89	.932
There is project committee independence in the management and sustainability of BMUs	4(1.30)	42(13.50)	51(16.40)	135(43.40)	79(25.40)	3.78	1.015
Project committee expertise influences the management and sustainability of the BMUs	4(1.30)	23(7.40)	35(11.30)	172(55.30)	77(24.8)	3.95	.878
Project committee experience influences the management and sustainability of the BMUs	5(1.60)	24(7.70)	39(12.50)	155(49.80)	88(28.30)	3.95	.929
Project committee gender diversity influences the management and sustainability of the BMUs	13(4.20)	57(18.30)	57(18.30)	114(36.70)	70(22.50)	3.55	1.149
Project committee ethnic diversity influences the management and sustainability of the BMUs	18(5.80)	40(12.90)	40(12.90)	130(41.80)	83(26.70)	3.71	1.162
Overall Mean and Standard Deviation						3.83	1.00

Source: Field Data, 2024

Analysis in Table 3 presents the respondents' perceptions on the role of project committee composition in

influencing the sustainability of Beach Management Units (BMUs) in Homa Bay County, Kenya. The overall

mean response ($M = 3.83$) suggests a neutral stance, implying that respondents neither strongly agreed nor disagreed with the influence of project committee composition on BMU sustainability. The low standard deviation ($SD = 1.00$) indicates that there was minimal variation in

responses, suggesting consistency among respondents' views on this variable. The highest level of agreement was found regarding the statement that project committee size determined the sustainability of the BMUs ($M = 4.00$, $SD = 0.957$). This reflects a consensus that larger or appropriately sized committees play a crucial role in fostering BMU sustainability.

The relatively low standard deviation suggests that most respondents agreed with this perspective. Committee size likely impacts decision-making efficiency, resource allocation, and the ability to manage BMU activities effectively, a finding supported by previous research on the importance of committee size in governance structures. Studies such as Baland and Platteau (1996) and Ostrom (1990) corroborate this finding, indicating that larger committees often have a broader skill set and are more representative, which enhances the governance of community-based natural resource management systems like BMUs. They suggest that a larger committee allows for better representation of stakeholders and enables more comprehensive oversight, thereby improving sustainability outcomes.

5.24.3.1 Membership Diversity, Expertise, and Independence

Respondents held a neutral position on several key aspects of project committee composition, including: Project committee membership diversity's effect on BMU sustainability ($M = 3.89$, $SD = 0.932$); Project committee independence in the management of BMUs ($M = 3.78$, $SD = 1.015$); Project committee expertise ($M = 3.95$, $SD = 0.878$); and Project committee experience ($M = 3.95$, $SD = 0.929$). These neutral positions suggest that while respondents recognize the potential importance of diversity, independence, expertise, and experience in committee composition, they are not strongly convinced that these factors are currently being effectively applied or having a tangible impact on BMU sustainability.

The neutral position on membership diversity contrasts with studies like Njaya et al. (2012), which emphasize the importance of diverse committee composition in ensuring more inclusive and representative decision-making in BMUs. In contrast, some studies such as Fabricius et al. (2007) suggest that while diversity is essential, without adequate expertise and experience, diversity alone may not lead to effective governance. Therefore, the findings in this study reflect a nuanced view where diversity is acknowledged but perhaps not perceived as adequately influential under current conditions. Similarly, the neutral stance on expertise and experience contrasts with research by Armitage et al.

(2009), which argues that expertise and experience in resource management are critical in ensuring that decision-making processes are informed and adaptive to changing conditions. The neutral position could indicate that respondents feel the existing committee structures lack the necessary expertise or that this expertise is not being utilized to its full potential in managing BMU activities.

5.34.3.2 Gender and Ethnic Diversity in BMU Management

Respondents were also neutral on the influence of project committee gender diversity ($M = 3.55$, $SD = 1.149$) and ethnic diversity ($M = 3.71$, $SD = 1.162$) on the management and sustainability of BMUs. These findings suggest that respondents do not see gender or ethnic diversity as having a strong positive or negative effect on BMU governance and sustainability. The higher standard deviations in these cases imply that there was more variation in responses, suggesting that some respondents may see these factors as more influential than others do. Gender diversity in leadership has been shown in studies such as Hendriks (2015) to enhance decision-making processes by incorporating different perspectives, especially in resource management sectors traditionally dominated by men. However, the neutral position in this study suggests that gender diversity may not yet be fully integrated into the governance structures of BMUs in Homa Bay County, or its importance may not be universally recognized. The neutral view on ethnic diversity contrasts with studies that highlight the importance of ethnic representation in community-based management, particularly in multi-ethnic regions where cultural norms and resource-use practices can vary significantly. Agrawal and Gibson (1999) argue that ethnic diversity, when well-managed, can lead to more equitable resource governance. The neutral stance in this study might suggest that ethnic diversity is present but not sufficiently leveraged to enhance sustainability.

Qualitative interviews conducted with BMU leaders and members revealed additional insights that help to contextualize the quantitative findings. Many interviewees emphasized the importance of having committees that reflect the demographic diversity of the fishing communities, particularly in terms of age and experience. Several participants mentioned that younger committee members often brought new ideas, but there was sometimes resistance from older members who preferred traditional approaches. This qualitative insight aligns with the neutral stance on the effect of committee expertise ($M = 3.95$) and experience ($M = 3.95$). While experience is valuable, there may be challenges in reconciling traditional knowledge with new, more innovative approaches to BMU management. This may explain the lack of strong agreement on the influence of expertise and experience on BMU sustainability, as these qualities are not always effectively harmonized within committees.

Additionally, respondents in the qualitative interviews frequently discussed the importance of trust and accountability in committee leadership. Some BMU members expressed concerns over the honesty and independence of committee leaders, with several noting instances where decisions appeared to benefit a few individuals rather than the entire community. This echoes the neutral stance observed in the quantitative data on committee independence ($M = 3.78$), suggesting that concerns about governance and transparency are influencing perceptions of committee effectiveness.

4.3.4 Effect of Project Committee Composition on BMU Sustainability

The study aimed to assess the moderating effect of project committee composition on the relationship between community values and the sustainability of BMUs. The neutral overall mean response on committee composition ($M = 3.83$) suggests that respondents do not view committee composition as a particularly strong moderating factor in this relationship. However, the specific items related to committee size and expertise ($M = 4.00$ and $M = 3.95$, respectively) show that certain aspects of composition may still play a role in shaping how effectively BMUs can align with community values

to promote sustainability. Research by Pretty et al. (2003) indicates that diverse and well-composed committees are better equipped to bridge the gap between traditional community values and modern management practices, thereby enhancing the sustainability of community-based management systems like BMUs. However, the neutral responses in this study suggest that the composition of BMU committees in Homa Bay County may not yet be optimized to fully capitalize on this potential. Overall, while project committee composition has some influence on BMU sustainability, particularly in terms of size and experience, other factors such as diversity and independence may need further strengthening to have a more pronounced positive impact.

4.4 Correlation Analysis

Correlation analysis allows for the determination of the strength and direction of the relationship between variables, as well as the identification of whether a linear relationship exists. A correlation coefficient of $+1.00$ signifies a strong positive correlation, a correlation coefficient of -1.00 signifies a complete negative correlation and a correlation coefficient of 0.00 shows no linear association between variables.

Table 4: Correlations

Variable	PS	CV	PCC
Project Sustainability	1		
Community Values	.847**	1	
Project Committee Composition	.785**	.718**	1

**. Correlation is significant at the 0.01 level (2-tailed).

The findings presented in Table 4 demonstrate that all the independent variables; community values; and project committee composition exhibited a positive and statistically significant correlation with project sustainability. Specifically, the correlation between community values and project sustainability was strong and significant ($r = 0.847$, $p = 0.01$). This high positive correlation implies that there is an 84.7% probability that project sustainability would increase as community values improve. In other words, when projects are aligned with the shared norms, beliefs, and priorities of the community, they are more likely to achieve sustainable outcomes. This finding underscores the importance of community engagement and trust in the success of projects, particularly in community-based resource management contexts such as Beach Management Units (BMUs).

This positive relationship between community values and sustainability is supported by past research. For instance, studies by Pretty et al. (2003) highlight that

projects embedded in local cultural values tend to garner greater community support, leading to more sustainable outcomes. Community values act as a social glue, fostering collective action and commitment, which are critical for the long-term success of such initiatives. In contrast, projects that do not resonate with the community's values may struggle to gain the necessary local support for sustainability.

In addition to community values, project committee composition also exhibited a positive and statistically significant correlation with project sustainability ($r = 0.785$, $p = 0.01$). This indicates that there is a 78.5% probability that improved project committee composition will enhance project sustainability. Well-structured committees with appropriate representation, expertise, and diversity are essential for effective resource management and decision-making, which in turn supports the long-term viability of projects. However, the slightly lower correlation for committee composition compared to community values suggests that while having the right committee structure is

important, it may not be as critical as aligning the project with local community values. This finding aligns with research by Armitage et al. (2009), which emphasizes the importance of strong leadership and skilled committee members in resource governance. However, the contrast between the correlations ($r = 0.847$ for community values vs. $r = 0.785$ for committee composition) suggests that even a well-composed committee may face challenges in sustaining a project if it does not have the trust and alignment of the community.

Overall, both community values and project committee composition are vital factors influencing project sustainability, with community values playing a slightly stronger role. This highlights the need for project managers to not only focus on forming effective governance structures but also to ensure that projects are deeply rooted in local values and culture. Strong community engagement, trust-building, and alignment with community priorities are essential for achieving

long-term sustainability in community-based projects like BMUs.

4.5 Regression Analysis

purpose of this study was to establish the effect of community values on project sustainability. To achieve this, inferential analysis was undertaken. Specifically, the study used linear regression analysis to test for the effect of the independent variable on the dependent variable.

4.5.1 Test for Direct Effect

The study aimed to examine the direct effect of community values on the sustainability of Beach Management Units (BMUs) in Homabay County, Kenya. To achieve this, a regression analysis was conducted, with community values as the independent variable and project sustainability as the dependent variable as shown below.

Table 5: Coefficient Results for Direct Effect

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1					
	(Constant)	5.035	.051	99.261	.000
	Community Values	.249	.009	.847	.000
Model Summary					
R		.847			
R ² Change		.717			
Std. Error of the Estimate		.43526			
Model Fit					
F change		782.947			
Sig.		.000			

Source: Field Data, 2024

The findings of this study demonstrate a significant and positive relationship between community values and the sustainability of Beach Management Units (BMUs) in Homabay County, Kenya. Specifically, the analysis revealed that community values account for 71.7% of the variance in project sustainability, as indicated by the coefficient of determination ($R^2 = 0.717$). This relationship was found to be statistically significant, with an F-value of 782.947 and a p-value of 0.000, confirming the robustness of the model. Furthermore, the regression coefficient ($\beta = 0.847$, $p = 0.000$) suggests that for every unit increase in community values, there is an 84.7% corresponding increase in project sustainability. These results underscore the importance of embedding community values in project design, highlighting that when community values are integrated, there is a greater likelihood of long-term project success and sustainability.

The significance of these findings can be further understood through the application of Hardin's Theory of the Tragedy of the Commons (1968). Hardin argues that when individuals act in their own self-interest in managing shared resources, overexploitation often

occurs, leading to resource depletion. However, this study suggests that embedding community values in resource management, such as the BMUs, mitigates this "tragedy." Traditional African values that emphasize communal responsibility and respect for natural cycles prevent the overexploitation of resources. In essence, community values act as a counterbalance to Hardin's tragedy by promoting collective stewardship over individual gain, thus ensuring the sustainability of shared beach resources.

From an anthropological standpoint, the relationship between community values and BMU sustainability aligns with the concept of cultural ecology, which emphasizes the interplay between culture and environmental management. Communities in Homabay County, like many African societies, possess deeply rooted values that guide their interactions with natural resources. As respondents in the study noted, traditional values such as harmony with nature, respect for ancestral wisdom, and collective responsibility play an integral role in resource management. These values foster a sense of environmental stewardship, encouraging sustainable practices that are essential for the longevity of BMUs.

The community members' observations, including the belief that "community values instill a sense of stewardship among members," echo broader anthropological insights about the role of traditional ecological knowledge (TEK) in effective environmental management. TEK, comprising generational knowledge about ecosystems, seasons, and species behavior, has been shown to enhance project sustainability when integrated into modern resource management frameworks.

In addition, Network Analysis Theory (Bodin & Crona, 2009) offers another lens through which the findings can be understood. This theory posits that the structure and quality of relationships within networks such as those within a community significantly impact the outcomes of collective management of resources. The integration of community values into the BMU management structure creates strong, cooperative networks where information, responsibilities, and resources are shared efficiently. These networks, founded on mutual trust and shared goals, contribute to better communication and decision-making processes, which are critical for the sustainability of BMUs. The findings of this study highlight how embedded social networks within the community, driven by shared values, enhance cooperation and accountability, thereby improving project outcomes. Network Analysis Theory corroborates this by suggesting that tightly knit, value-driven networks foster collective action that ensures long-term sustainability, particularly in managing common resources like fisheries.

Sociologically, the findings reflect theories of social capital and collective efficacy. Projects that successfully leverage social capital built upon trust, shared values, and cooperative networks are more likely to foster community participation and project ownership. The work of Oino et al. (2015) on the dilemma of project sustainability further supports this view, indicating that projects which fail to engage with the social fabric of the community often struggle to achieve long-term viability. In this study, the strong alignment between community values and BMU sustainability suggests that the projects benefiting from such alignment are more cohesive and exhibit greater collective responsibility, which are essential elements of social capital. This is consistent with the theoretical framework of collective efficacy, wherein communities that share a sense of responsibility and purpose are more likely to work together effectively toward common goals, such as the sustainable management of beach resources.

The study's findings also align with existing literature that emphasizes the importance of integrating community values into resource management projects. Scholars such as Pretty et al. (2003) and Ostrom (2009) have long argued that projects grounded in local cultural practices enjoy higher levels of community buy-in, leading to increased compliance with regulations and greater collective responsibility. This study corroborates those conclusions, showing that when BMUs incorporate

local cultural values and community expectations, they are more likely to achieve sustainability. Community engagement, as shown through the adherence to values such as seasonal fishing and rituals that honor marine life, further reinforces the importance of conservation and sustainable resource use. These practices align closely with social norms that prioritize communal welfare and environmental stewardship, ensuring the long-term viability of the projects.

However, contrasting views in the literature, particularly from scholars like Agrawal and Gibson (1999), caution that traditional values may, in some cases, conflict with contemporary conservation goals. Economic pressures and the demand for immediate returns can push communities toward unsustainable exploitation of natural resources, challenging the assumption that traditional values always align with sustainability. While this cautionary note is important, the current study provides strong evidence that, in the context of Homabay County, community values are largely consistent with sustainable practices.

From the foregoing discussion, the study provides compelling evidence that community values play a crucial role in the sustainability of Beach Management Units in Homabay County. The statistical analysis demonstrates a significant positive correlation between community values and project sustainability, while qualitative insights from community members further highlight the importance of traditional values in guiding sustainable practices. The integration of Hardin's Tragedy of the Commons theory shows that community values counter the potential for resource overexploitation, while Network Analysis Theory illustrates how value-driven networks enhance collective action for sustainability.

The findings suggest that embedding community values into project design not only enhances environmental stewardship but also strengthens community engagement and ownership of the projects. This conclusion is supported by both anthropological and sociological theories, which emphasize the value of integrating local knowledge, social capital, and collective responsibility into resource management strategies. Therefore, for BMUs to achieve long-term sustainability, it is essential to foster and leverage community values, ensuring that projects are culturally resonant, ecologically sound, and socially inclusive.

4.5.2 Testing for Moderating Effect of Project Committee Composition

The moderating effect of project committee composition on the relationship between community values and the sustainability of Beach Management Units (BMUs) was explored through a hierarchical regression analysis. In the first model, the independent variable-community values-was tested, establishing its significant contribution to the sustainability of BMUs. In the second model, the role of project committee composition, which

serves as a moderator, was analyzed, revealing its significant influence on sustainability outcomes. The final model introduced the interaction term between the independent variable and the moderator, resulting in the hierarchical testing of the cross-product between project

committee composition and community values. This test aimed to determine whether the composition of project committees enhances or moderates the influence of community values on project sustainability.

Table 6: Moderating Effect of Project Committee Composition

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
2 (Constant)	-1.436	.256		-5.608	.000
Community Values	.874	.059	.597	14.793	.000
Project Committee Composition	.534	.064	.335	8.309	.000
Model Summary					
R		0.870			
R ² Change		0.757			
Std. Error of the Estimate		2.01347			
Model Fit					
F change		479.164			
Sig.		.000			

Source: Field Data, 2024

The analysis of the moderating effect of project committee composition on the relationship between community values and the sustainability of Beach Management Units (BMUs) presents advanced and significant contributions to the understanding of resource management and sustainability. Using hierarchical regression models, this study methodologically innovates by testing the interaction effects between community values and governance structures, offering a new lens through which the sustainability of community-based projects can be understood. The use of a hierarchical approach not only captures the direct effects of community values but also unveils the complex dynamics of moderation, thereby advancing our understanding of governance's role in enhancing project sustainability.

In the initial model, community values were tested as an independent variable, demonstrating a statistically significant effect on BMU sustainability. The strong positive relationship ($\beta = 0.597$, $p = 0.000$) underscores the critical importance of culturally embedded values in fostering sustainable outcomes for community-based projects. This result is particularly important in African contexts, where traditional knowledge and local values are central to community cohesion and environmental stewardship. By focusing on the community's internal value system, this study reaffirms the theoretical propositions of the Tragedy of the Commons (Hardin, 1968). Hardin's theory emphasizes the depletion of shared resources in the absence of structured interventions. The findings provide an empirical counterpoint by suggesting that when community values are integrated into project frameworks, they can mitigate the risks of resource overuse. This suggests a shift from external regulation to community-based governance, where local values act as an intrinsic form of regulation.

In the second model, the role of project committee composition as a moderator was introduced. The results reveal that committee composition has made a statistically significant contribution to the sustainability of BMUs ($\beta = 0.335$, $p = 0.000$). This finding suggests that governance structures, particularly the design and composition of project committees, play a critical role in determining project outcomes. Committees that reflect the diversity, knowledge, and social dynamics of the community can enhance project legitimacy and ensure more effective resource management. The R-value of 0.490, with a change in R^2 of 0.757 and an F-value of 479.164 ($p = 0.000$), indicates that the inclusion of committee composition as a moderator significantly strengthens the model's explanatory power, accounting for 75.7% of the variance in sustainability. This is an innovative contribution to governance and sustainability literature, as it empirically demonstrates that local institutions are not just mechanisms for project implementation but are also critical moderators that amplify the positive effects of community values.

This moderating effect aligns with Network Analysis Theory (Bodin & Crona, 2009), which emphasizes the importance of social networks and their configurations in facilitating collective action and resource management. In the context of BMUs, project committees act as central nodes within a broader social network, facilitating information flow, trust-building, and coordinated action. Committees composed of diverse community members serve as key points of communication, fostering connectivity and cohesion within the community. This networked structure is crucial for managing common-pool resources such as fisheries, as it ensures that decisions are made collectively, reflecting the shared values and interests of the community. The findings contribute to the growing body of literature that posits

social network configurations as critical to the success of community-based resource management initiatives.

Moreover, the interaction term between community values and project committee composition further enhances the analysis. This interaction shows that well-structured governance mechanisms not only improve project management but also enhance the influence of community values on project outcomes. This corroborates Ostrom's (2009) framework, which argues that successful management of common-pool resources requires institutions that are locally adapted and reflective of community norms and values. The empirical evidence here supports Ostrom's assertion by illustrating that the integration of community values into formal governance structures—through well-composed committees—leads to better sustainability outcomes. The study innovatively extends this theory by showing that governance structures do more than merely manage—they amplify and channel the community's intrinsic values into sustainable resource management practices.

In the context of African rural settings, these findings resonate with studies such as Atieno et al. (2024), which emphasize grassroots solutions in addressing global challenges like climate change. Their work on self-help groups and community resilience underscores the importance of local institutions in shaping sustainable livelihoods. Similarly, Kwambai, Oino, & Lumayo (2023), in their study on stakeholder management in CDF projects, highlight the importance of stakeholder inclusion and committee representation for project success. Both studies align with the present findings by demonstrating that stakeholder-driven governance—where community representation is strong ensures project sustainability. These insights contribute to an evolving discourse on community-led governance, where local knowledge and participation are not just supplements but essential components of successful project implementation.

However, contrasting perspectives, such as those presented by Agrawal and Gibson (1999), caution against idealizing local institutions, pointing out that they can be vulnerable to elite capture and inefficiencies. While the current findings emphasize the positive moderating role of project committee composition, they do not overlook the challenges that may arise if governance structures are poorly designed or inadequately representative. As Oino et al. (2015) highlights in their discussion on the dilemma of project sustainability, governance structures need to be adaptive and context-specific to avoid pitfalls such as lack of inclusivity or mismanagement. This is an important consideration for future interventions—governance structures must be dynamic, adaptable to local contexts, and regularly reviewed to ensure they remain effective and representative.

In a broader sociological and anthropological context, this study supports the notion that traditional African

community values such as collective responsibility, respect for natural cycles, and stewardship of resources—play a critical role in sustainable resource management. These values, deeply embedded in social norms and cultural practices, offer a blueprint for the long-term management of common-pool resources. The integration of traditional ecological knowledge into BMU governance structures not only enhances sustainability but also reinforces the community's sense of ownership and responsibility towards their environment. This finding is consistent with the growing body of work that highlights the role of indigenous knowledge systems in environmental governance, particularly in Africa, where such systems have long ensured the sustainable use of natural resources.

From a policy and practical standpoint, this study offers several innovative contributions. First, it demonstrates the importance of involving local communities in the design and management of governance structures, particularly in resource-dependent regions like coastal communities. Second, it provides empirical evidence for the importance of diverse and well-composed project committees as moderators that enhance the sustainability of projects grounded in community values. Lastly, the study suggests that governance interventions should be context-specific and reflective of local cultural norms, ensuring that external management models do not overshadow the community's intrinsic governance systems.

From the discussion above, the study advances the understanding of the relationship between community values, governance structures, and project sustainability in BMUs. By empirically demonstrating the moderating effect of project committee composition, it highlights the importance of local governance institutions in amplifying community values and ensuring sustainable project outcomes. The integration of Hardin's Tragedy of the Commons and Network Analysis Theory offers a robust theoretical foundation for understanding how well-composed governance structures prevent resource depletion and enhance collective action. These findings, corroborated by recent studies in the field, present an innovative and comprehensive framework for understanding the sustainability of community-based resource management projects, providing valuable insights for policymakers, practitioners, and scholars alike.

4.5.3 Test for Interaction Term

The analysis of the moderating effect of project committee composition on the relationship between community values and the sustainability of beach management projects offers novel insights into the role of governance structures in community-based environmental initiatives. The results, particularly those presented in Model 3, provide compelling evidence of the critical importance of committee composition in enhancing the sustainability of these projects. The findings indicate that the model explains 75.7% of the

total variance in sustainability performance, as shown by $R^2 = 0.757$, with a statistically significant F-value of 318.407 ($p = 0.000$). This strong explanatory power suggests that both community values and project governance play a substantial role in driving sustainability outcomes.

The positive and significant effect of community values on the sustainability of beach management projects ($\beta = 0.596$, $p = 0.000$) underscores the importance of cultural and social norms in fostering long-term resource management. This result aligns with the principles of Hardin's (1968) Tragedy of the Commons theory, which emphasizes the challenges of managing shared resources in the absence of clear governance mechanisms. However, the findings of this study suggest a more optimistic scenario: rather than resource depletion, strong community values provide an intrinsic form of regulation, guiding responsible resource use and ensuring the sustainability of beach management projects. This counters Hardin's more pessimistic outlook, indicating that, in contexts where community cohesion and shared values are present, resource management can indeed thrive without descending into the "tragedy" he predicted.

Additionally, the study found that project committee composition has a significant direct effect on the sustainability of beach management projects ($\beta = 0.334$, $p = 0.000$). This emphasizes the critical role that well-structured governance plays in the success of community-based projects. By ensuring that project committees are inclusive, representative, and well-composed, the chances of success are significantly increased. Network Analysis Theory (Bodin & Crona, 2009) further helps explain these findings. The theory posits that the structure and composition of social networks significantly impact the effectiveness of collective action. In this case, project committees act as the key nodes in a network that connects various stakeholders, facilitating coordination, trust, and the dissemination of information. Committees that are well-composed foster greater social cohesion and are more likely to lead to successful project outcomes, as they bridge different interests and ensure that decisions reflect the broader community's values and priorities.

Moreover, the interaction effect between community values and project committee composition was found to be positive and significant ($\beta = 0.002$, $p = 0.004$), suggesting that project committee composition moderates the relationship between community values and sustainability. This interaction effect highlights the importance of having governance structures that not only function well on their own but also enhance the influence of community values on project outcomes. In practical terms, this means that well-designed committees do more than just manage resources—they amplify the effect of community-driven values, ensuring that these values are embedded in decision-making processes and translated into sustainable practices. The positive interaction points

to a synergy between values and governance structures that fosters resilience and long-term project success.

The moderation effect of project committee composition, as evidenced by the significant p-value ($p < 0.05$), indicates that this variable plays a key role in strengthening the relationship between community values and sustainability outcomes. This finding supports the growing body of research that advocates for the inclusion of local governance mechanisms in the management of common-pool resources. Similar findings are echoed in studies like Atieno et al. (2024), which examined the role of self-help groups in building sustainable livelihoods in response to climate change in Nyakach, Kenya. Their work highlights how local governance structures, when combined with strong community values, can drive sustainable outcomes. Furthermore, Kwambai, Oino, & Lumayo (2023) found that stakeholder management, particularly through well-structured committees, significantly contributes to the success of constituency development fund projects. These studies corroborate the current findings by demonstrating that inclusive governance structures enhance project success and sustainability.

In contrast, Orlale, Oino, & Mose (2022), in their study on informal markets in rural Western Kenya, emphasize the importance of flexibility in governance structures. Their findings suggest that while strong governance is important, it must be adaptable to changing conditions, particularly in informal and resource-constrained settings. This points to a potential limitation of the current study: while project committee composition was shown to significantly enhance sustainability outcomes, further research is needed to explore how flexible these governance structures need to be to adapt to evolving environmental and social conditions.

In conclusion, the study's findings significantly advance the understanding of the role of governance in moderating the relationship between community values and project sustainability by providing empirical evidence that supports the growing call for more inclusive and locally-driven governance structures in resource management. The interaction between community values and committee composition not only enhances the likelihood of project success but also provides a robust framework for scaling these findings to other community-based resource management projects. Future research should explore how these governance mechanisms can be adapted to other settings, particularly those with differing social and environmental challenges, to further validate and extend these innovative findings.

5. Conclusion and Recommendations

5.1. Conclusion

This study explored the influence of community values and project committee composition on the sustainability of Beach Management Units (BMUs) in Homabay

County, Kenya. The findings demonstrate that community values significantly impact the sustainability of BMUs, explaining 75.7% of the variance in sustainability outcomes. Key community values, including respect for traditional knowledge, trust, and cooperation, play a crucial role in promoting compliance, resource stewardship, and collective action within BMUs. The study also found that the composition of project committees, particularly in terms of expertise and inclusivity, enhances the effectiveness of BMUs in managing fisheries resources and ensuring long-term sustainability. However, while gender and ethnic diversity were found to have some influence, their effects were less pronounced compared to the broader importance of committee functionality and representation.

Importantly, the interaction between community values and project committee composition revealed a synergistic effect, where well-structured committees amplify the influence of community-driven values on sustainability outcomes. This highlights the value of aligning governance structures with local values to create robust, community-centered management systems. The study contributes to ongoing discussions in resource management and governance by illustrating how cultural norms and institutional frameworks can work in tandem to enhance the sustainability of natural resource management systems like BMUs.

5.2 Recommendations

1. **Integrating Traditional Knowledge into BMU Governance:** BMU leaders should institutionalize the role of community elders and traditional knowledge in governance processes. Elders, as custodians of traditional environmental practices, can help foster compliance and promote responsible resource use by aligning BMU governance with long-standing community norms.

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2. **Optimizing Project Committee Composition:** BMUs should focus on optimizing the size and expertise of project committees. While diversity in gender and ethnicity is valuable, emphasis should be placed on ensuring that committee members possess relevant skills and experience critical for decision-making in resource management. A well-balanced committee that combines technical expertise with social knowledge will be better positioned to navigate the complexities of sustainability challenges and make informed decisions that reflect both community values and practical considerations.
3. **Capacity Building for BMU Leaders:** Targeted training and capacity-building programs should be introduced for BMU leaders to enhance their leadership and management capabilities. These programs should equip leaders with the skills needed to operationalize community values effectively, mediate conflicts, and foster cooperation among diverse stakeholders. Leadership development initiatives can also promote better strategic planning, financial management, and adaptive governance, all of which are critical for achieving long-term sustainability in BMU operations.
4. **Strengthening Synergies Between Values and Governance:** BMUs should actively seek to create synergies between community values and formal governance structures. By ensuring that committee composition reflects the interests of the community and is aligned with local values, BMUs can create a more cohesive and participatory approach to resource management. This will not only enhance compliance but also create stronger bonds of trust and accountability between leaders and community members, improving the overall governance and sustainability of BMUs.

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