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Moderating Role of Culture in the Relationship between Community Engagement, Integration, and Livelihood Outcomes in Conservation among the Karimojong in Kidepo Valley National Park, Uganda

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Abstract

Purpose: This study explores how cultural context moderates the relationship between community engagement, integration, and livelihood outcomes in wildlife conservation among the Karimojong people near Kidepo Valley National Park, Uganda.

Materials and Methods: A convergent parallel mixed-methods design combined quantitative surveys with qualitative interviews. Data were collected through structured questionnaires from 243 Karimojong community members, five Key Informant Interviews with officials and wildlife authorities, and five Focus Group Discussions with Local Council 1 members. Quantitative data were analyzed using Stata 17, and qualitative data were thematically analyzed using NVivo 14. A moderated mediation analysis was conducted using PROCESS Macro (Model 14).

Findings: Community engagement significantly predicted integration ($B = 0.83$, $p < .001$), which positively influenced livelihood outcomes ($B = 0.92$, $p = .0005$). Cultural context directly predicted livelihoods ($B = 0.97$, $p < .001$) and moderated the integration–livelihood

relationship ($B = -0.20$, $p = .035$), indicating that integration's positive effects diminish in stronger cultural settings. The indirect effect of engagement on livelihoods through integration was more potent at low ($B = 0.60$) and medium ($B = 0.37$) cultural levels, but negligible at high levels ($B = 0.05$). However, the index of moderated mediation was not statistically significant. Qualitative findings supported these results, revealing that cultural exclusion and marginalization hinder integration and reduce livelihood benefits.

Unique Contribution to Theory, Practice and Policy: Future research should consider cultural dynamics as key moderators in conservation models. Conservation programs should adopt culturally sensitive approaches that promote inclusive decision-making and empower Indigenous communities to enhance integration and livelihood outcomes.

Key Words: *Moderating, Community Engagement, Integration, Livelihood Outcomes*

JEL Codes of Classification: *Q56, Q57, O15, Z13, R23, Q01, I32, D02*

INTRODUCTION

Globally, conservation efforts have increasingly recognized the pivotal role of local communities in sustaining biodiversity and promoting environmental stewardship. Community-based conservation (CBC) has emerged as a transformative approach emphasizing local participation, equity, and shared benefits, especially in developing countries where protected areas overlap with indigenous territories (Berkes, 2004; Brooks et al., 2013; González et al., 2022). However, despite the theoretical promise of CBC, practical outcomes vary widely due to differing socio-cultural, economic, and institutional contexts. Recent studies indicate that sustainable conservation outcomes depend not only on policy and economic incentives but also on the depth of community engagement, integration into conservation frameworks, and the compatibility of interventions with local cultural norms and values (Pretty & Smith, 2004; Kothari et al., 2021).

In many regions, particularly in Africa, cultural identity, traditional institutions, and indigenous knowledge systems have historically governed the use and conservation of natural resources. These cultural frameworks shape community perceptions of conservation, influence participation patterns, and determine livelihood strategies (Ens et al., 2015; Gbedomon et al., 2021). When conservation interventions are misaligned with local cultures, they often lead to resistance, marginalization, and unsustainable outcomes (West et al., 2006; De Koning et al., 2023). Therefore, understanding the moderating role of culture is essential for tailoring conservation strategies that are inclusive, equitable, and resilient (Fabricius & Koch, 2004; Gavin et al., 2021).

East Africa boasts a rich cultural and ecological diversity at the regional level, with numerous indigenous communities residing in or adjacent to protected areas. Transboundary ecosystems such as the Albertine Rift and the Horn of Africa savannahs present unique challenges and opportunities for integrated conservation and development (Plumptre et al., 2007; Nampindo et al., 2022). Within this context, integrating cultural values and community voices has shown varied success, particularly among pastoralist and agro-pastoralist societies (Homewood et al., 2009; Roe et al., 2021). In regions such as northern Kenya, southern Ethiopia, and northern Uganda, pastoralist communities often face compounded challenges related to marginalization, conflict, climate variability, and restricted access to ancestral lands due to conservation enclosures (Galvin, 2009; Greiner, 2013; Atuyambe et al., 2023). These challenges impact their ability to engage meaningfully with conservation authorities and benefit from associated livelihood opportunities.

The government has pursued ambitious conservation goals in Uganda through the Uganda Wildlife Authority (UWA), managing ten national parks and several wildlife reserves (UWA, 2021). While this has contributed to biodiversity protection, it has also created tension with communities living near or within park boundaries (Bush et al., 2004; Ahebwa et al., 2022). The Kidepo Valley National Park (KVNP), located in the semi-arid Karamoja sub-region in northeastern Uganda, is a prime example. It is one of the country's most ecologically valuable yet socio-culturally sensitive conservation areas. Home to the Karimojong, a Nilotic-speaking pastoralist group with a deep-seated cultural attachment to land and livestock, KVNP embodies a complex intersection of ecological protection and cultural heritage (Stites et al., 2007; Knighton, 2021).

Historically, the Karimojong have maintained a nomadic pastoralist lifestyle governed by customary norms and clan structures that dictate land use, conflict resolution, and resource sharing (Knighton, 2005; Eilu & Okia, 2022). However, modern conservation regimes often undermine these traditional systems, restricting access to grazing land and water, central to

Karimojong livelihoods (Behnke & Kerven, 2013; Muhereza et al., 2021). Recent studies have highlighted that the Karimojong's cultural norms, values, and practices significantly influence how they relate to conservation interventions, wildlife management, and resource use, underscoring the need for culturally sensitive conservation strategies (Lolem et al., 2025). Although UWA and various NGOs have introduced community engagement programs and benefit-sharing schemes, the extent to which these initiatives have integrated cultural dimensions remains unclear (Ahebwa & Van der Duim, 2012; Twongyirwe et al., 2022). Moreover, little is known about how culture may moderate the impact of community engagement and integration on livelihood outcomes among the Karimojong.

This study seeks to bridge this gap by exploring the moderating role of culture in the relationship between community engagement, integration into conservation processes, and livelihood outcomes in Kidepo Valley National Park. By focusing on Karimojong's unique cultural context, the research aims to provide nuanced insights into how culturally grounded conservation strategies can enhance ecological sustainability and socio-economic well-being.

Problem Statement

Conservation efforts in Uganda, particularly within protected areas like Kidepo Valley National Park (KVNP), increasingly rely on community-based approaches to balance ecological sustainability with local development. However, these interventions often fail to deliver meaningful benefits among indigenous communities such as the Karimojong, who possess deep-rooted cultural traditions and spiritual connections to the land and wildlife. Despite policy frameworks emphasizing community engagement and integration, many conservation programs remain poorly aligned with local cultural norms, leading to tensions, mistrust, and limited participation (Knighton, 2005; Ahebwa & Van der Duim, 2012; Lolem et al., 2025).

The Karimojong's cultural identity, traditional governance structures, and livelihood systems are often overlooked or marginalized in conservation planning and implementation. This misalignment raises concerns about the effectiveness of current engagement strategies in fostering genuine integration and improving livelihoods. Moreover, there is limited research on how cultural context influences or moderates the relationship between community engagement, integration, and livelihood outcomes in conservation settings. Without a clear understanding of this dynamic, conservation initiatives risk undermining local traditions and failing to achieve ecological and socio-economic goals.

This study addresses this gap by examining how cultural factors shape and potentially moderate the relationship between community engagement, integration, and livelihood outcomes among the Karimojong in KVNP.

Theoretical Review

This study adopts three theoretical frameworks, the Continual Engagement Model (Reid et al., 2016), to explore the Karimojong community's engagement and IWT for culture (norms, values, and practices) in wildlife conservation at Kidepo Valley National Park. IWT emphasizes the interconnectedness of spiritual, ecological, cultural, and social systems, offering a culturally grounded perspective on human-nature relationships (Berkes, 2017) and the Sustainable Livelihood Framework. For the Karimojong, wildlife is not viewed as separate from human life but as part of a larger spiritual and ecological continuum. This worldview shapes their participation in conservation through community-led practices such as regulating access to sacred sites and observing seasonal hunting taboos.

MATERIALS AND METHODS

Study Design

This study adopted a convergent mixed methods design to explore livelihood outcomes, wildlife conservation integration, engagement, and integration of the Karimojong community in the Kidepo Valley National Park, Northeastern Uganda. The mixed methods approach allowed for the collection of quantitative and qualitative data to comprehensively understand the community's wildlife conservation perspectives (Creswell, 2014). The quantitative aspect involved surveys, while the qualitative aspect included Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs). This design is particularly suitable as it enables the integration of different types of data to provide a more nuanced understanding of the subject matter.

Research Approach

The study employed quantitative and qualitative research methods to explore the interplay of livelihood outcomes, integration, and engagement in wildlife conservation. The quantitative component aimed to assess the extent of the relationship between livelihood outcomes, integration, and engagement within the Karimojong community, while the qualitative component sought to understand the underlying cultural meanings, beliefs, and practices related to wildlife conservation practices.

Study Population

The study targeted a total of 243 respondents, consisting of indigenous Karimojong community members living in the vicinity of Kidepo Valley National Park. Also, the study targeted Key Informants (KIIs) and Focus Group Discussions, all of whom were selected based on their extensive knowledge and involvement in local wildlife conservation efforts. The KIIs included key community leaders, such as the Parish Priest, the Agriculture and Production Officer, the Senior Warden Officer, the Senior Environmental Officer, and the LC V District Counselor in charge of education and health.

Sample Size and Sampling Technique

The study employed a stratified random sampling technique to select 243 respondents from the indigenous Karimojong community. The sample size calculation followed the Krejcie (1970) method, with an additional 10% added for potential non-responses (Fink, 2024). Based on this, a final sample of 269 respondents was determined (i.e., $243/0.9 = 269$), representing the diverse socio-demographic profile of the community. This sample size was sufficient to ensure the study population's representativeness and allow for the generalization of the findings within the context of Kidepo Valley National Park. Including both KIIs and FGDs further enriched the data collection process, providing valuable insights into community perspectives on wildlife conservation as guided by Guest, Bunce, and Johnson (2006).

Study Instruments

In this study, a questionnaire was used to elicit data on community engagement, integration, and livelihood outcomes, which were key variables assessed to understand Karimojong Indigenous systems in wildlife conservation within Kidepo Valley National Park (KVNP). To complement and validate the survey data, Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) were conducted with local leaders and stakeholders. These qualitative tools offered deeper insights into community perspectives and contextual factors influencing conservation. All instruments were pretested for clarity and cultural appropriateness.

Data Collection Procedure

After relevant approvals, the study was conducted. Initially, a pre-test was administered to all participants to assess their baseline knowledge and attitudes toward Karimojong active participation, emotional attachment, and long-term commitment to wildlife conservation. The participants were then interviewed using a pretested questionnaire, which included closed-ended questions. Following this, five Focus Group Discussions (FGDs) were conducted, each consisting of 6 participants, local council committee members from 6 villages. The FGDs were designed to achieve saturation on the three key variables. Additionally, five Key Informant Interviews (KIIs) were conducted with key community leaders, including the Parish Priest, the Agriculture and Production Officer, the Senior Warden Officer, the Senior Environmental Officer, and the LC V District.

Data Management and Analysis

The data analysis plan began with descriptive statistics and normality tests, showing that Engagement and Integration were not normally distributed, thus prompting the use of bootstrapping. A moderated mediation analysis (Model 14 of Hayes' PROCESS macro) examined whether Engagement influences Livelihoods through Integration, moderated by Culture. Engagement significantly predicted Integration, which in turn predicted Livelihoods. However, the indirect effect of engagement on livelihoods was weakened at higher levels of culture, and the index of moderated mediation was not statistically significant. Qualitative themes reinforced the findings, revealing those cultural barriers limit integration and livelihood opportunities. Cultural exclusion, marginalisation, and suppressed traditional practices were key factors. Together, the mixed-method results underscore the complex role of culture in shaping the impact of conservation engagement on community livelihoods.

Ethical Considerations

As the study involved human participants, strict ethical standards were followed to protect their rights and privacy. Before the study began, ethical approval was obtained from the Mbarara University of Science and Technology Research Ethics Committee (MUST REC) and the Uganda National Council for Science and Technology (UNCST). Permission was sought from the Chief Administrative Officer (CAO) of Karenga District to access the study sites.

Written informed consent was secured from all participants, ensuring they understood the research's purpose, risks, and benefits. Participation was voluntary, and participants were informed of their right to withdraw at any time without any consequences. Pseudonyms were used to protect the identities, and the confidentiality of participants was maintained throughout the study. The research process was conducted with cultural sensitivity, considering the local customs and values. These ethical measures ensured the study adhered to national and international research standards while prioritising the participants' well-being.

FINDINGS

Descriptive Statistics and Normality Test Results for the Study Variables

Skewness and kurtosis values between -2 and +2 are considered acceptable (George & Mallery, 2010) to prove the normal univariate distribution of the study variables.

Table 1: Descriptive Statistics and Normality Test Results for the Study Variables

	Mean	Std. Deviation	Skewness	Kurtosis	Normality
Livelihoods	2.6	1.6	1.0	-0.3	Normal
Engagement	1.4	0.7	2.2	4.2	Not normal
Integration	1.4	0.8	2.3	5.3	Not normal
Culture	2.8	1.4	0.2	-1.4	Normal

Skewness and kurtosis values were examined to assess the normality of the study variables. According to George and Mallery (2010), values between -2 and +2 are acceptable for assuming univariate normality. Based on this criterion, the variables *Livelihoods* (skewness = 1.0, kurtosis = -0.3) and *Culture* (skewness = 0.2, kurtosis = -1.4) fall within the acceptable range and are considered approximately normally distributed. However, *Engagement* (skewness = 2.2, kurtosis = 4.2) and *Integration* (skewness = 2.3, kurtosis = 5.3) exceed the recommended thresholds, suggesting deviations from normality. Consequently, bootstrapping was preferred in the analysis due to its robustness to violations of normality assumptions.

Model 14 of Hayes' PROCESS macro was selected for the current analysis to examine a moderated mediation model, with ENG as the independent variable, INT as the mediator, CULT as the moderator, and LIVE as the dependent variable. Path analysis used bootstrapping (5,000 samples) to estimate the indirect effects and their conditionality on the moderator.

Bootstrapping was preferred due to potential violations of normality observed in the data, particularly in the distributions of ENG and INT, which exhibited high skewness and kurtosis. Unlike traditional parametric methods, bootstrapping does not assume normality of the sampling distribution, making it a robust approach for testing indirect and conditional effects, such as those found in moderated mediation models.

A moderated mediation analysis was conducted using PROCESS macro version 4.2 (Model 14; Hayes, 2022) to test whether the indirect effect of engagement (ENG) on livelihoods (LIVE) via integration (INT) was moderated by cultural context (CULT). This model tests whether the indirect effect's strength depends on a moderator's (CULT) level at the second stage of the mediation process (i.e., INT → LIVE).

Table 2: Summary of Moderated Mediation Analysis (Model 14)

Path	Predictor→ Outcome	Coefficient (B)	SE	T	p-value	95% CI
a	ENG → INT	0.8316	0.0439	18.94	<.001	[0.7451, 0.9181]
b	INT → LIVE	0.9162	0.2594	3.53	.0005	[0.4052, 1.4272]
c'	ENG → LIVE (direct effect)	-0.0263	0.1943	-0.14	.893	[-0.4091, 0.3566]
w	CULT → LIVE	0.9712	0.1201	8.09	<.001	[0.7347, 1.2078]
b2	INT × CULT → LIVE	-0.1966	0.0927	-2.12	.035	[-0.3791, -0.0140]

Path A: Predictor to Mediator: The first regression model examined the effect of ENG on INT. Results indicated that ENG significantly predicted INT, $B = 0.83$, $SE = 0.04$, $t(241) = 18.94$, $p < .001$, 95% CI [0.75, 0.92]. This suggests that higher levels of engagement are associated with greater integration.

Table 3: Conditional Indirect Effects of ENG → LIVE via INT at CULT Levels

CULT Level (Percentile)	Indirect Effect	Boot SE	95% CI
Low (16th, CULT = 1.00)	0.5985	0.3074	[0.0940, 1.1374]
Medium (50th, CULT = 2.39)	0.3715	0.2354	[-0.1635, 0.7268]
High (84th, CULT = 4.33)	0.0536	0.3048	[-0.6890, 0.4256]

Path B: Mediator and Moderator to Outcome

The second regression model tested the effects of ENG, INT, CULT, and the interaction term $INT \times CULT$ on LIVE. INT significantly predicted LIVE, $B = 0.92$, $SE = 0.26$, $t(238) = 3.53$, $p = .0005$, 95% CI [0.41, 1.43], indicating that integration is positively associated with life satisfaction. CULT also had a significant main effect on LIVE, $B = 0.97$, $SE = 0.12$, $t(238) = 8.09$, $p < .001$, 95% CI [0.73, 1.21], suggesting that individuals from higher cultural contexts tend to report higher life satisfaction. Notably, the interaction between INT and CULT was statistically significant, $B = -0.20$, $SE = 0.09$, $t(238) = -2.12$, $p = .035$, 95% CI [-0.38, -0.01], suggesting that the relationship between INT and LIVE varies as a function of CULT.

To probe the moderated mediation, the conditional indirect effects of ENG on LIVE via INT were estimated at three levels of CULT (16th, 50th, and 84th percentiles): At low CULT (CULT = 1.00), the indirect effect was 0.60, BootSE = 0.31, 95% CI [0.09, 1.14]. At medium CULT (CULT = 2.39), the indirect effect was 0.37, BootSE = 0.24, 95% CI [-0.16, 0.73]. At high CULT (CULT = 4.33), the indirect effect was 0.05, BootSE = 0.30, 95% CI [-0.69, 0.43]. This pattern indicates that the mediating effect of INT on the relationship between ENG and LIVE weakens as CULT increases. The index of moderated mediation was calculated to assess the significance of the moderation of the indirect effect. The index was -0.16, BootSE = 0.12, with a 95% confidence interval of [-0.44, 0.02]. Because this interval includes zero, the moderated mediation is not statistically significant at the 95% confidence level.

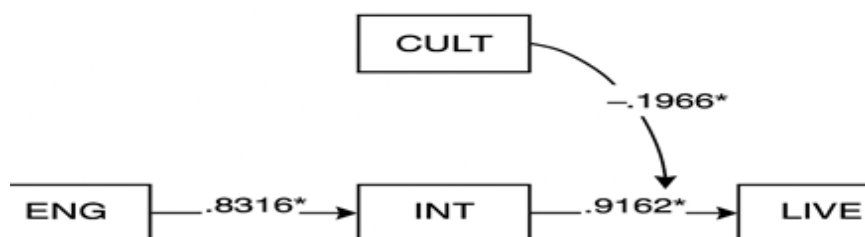


Figure 1: Moderated Mediation output between Culture, Engagement, Integration, and Livelihoods of Karimajong in KVNP, North Eastern Uganda.

Although community engagement indirectly predicts livelihoods via community integration, cultural context (culture) influences the strength of this mediation effect. The mediating effect is more potent in low and medium cultures and weakens in high cultural contexts. However, the index of moderated mediation was not significant, indicating limited evidence for a conditional indirect effect at conventional significance levels.

Table 4: Themes, Subthemes, and Quotes

Theme	Subtheme	Best Quotes	Source
Cultural Influence on Integration and Livelihoods	Loss of Cultural Access and Identity	“Cultural sites that used to be sacred are now within park boundaries. People are denied access. Rituals can’t be performed. That’s a source of anger.” “Akiriket is where we would gather for blessings and predictions... that place is now locked in the park. If we try to go there, we are chased.”	KII4- Senior Environmental Officer FGD C
	Traditional Conservation Practices	“Long ago, from Nataab to Lokure, there was harmony between people and wildlife... now animals destroy gardens.” “We even had days where cultural groups would dance in the park. That promoted peace. Now cultural sites are fenced off.”	FGD B KII3 - Senior Warden
	Exclusion from Integration and Participation	“During recruitment of game rangers, the local people who applied were not taken into consideration... If our own were recruited, this conflict would reduce.” “I finished Senior Four... I passed interviews, but was told I had health problems. How? I never saw my results.”	KII2- Agriculture Officer FGD D
Cultural Buffering in Livelihood Outcomes	Limited Decision-Making Power	“Communities are largely treated as threats rather than partners. In most meetings, they are informed, not consulted.” “They only involve communities when they need labor. Not when planning.”	KII4- Senior Environmental Officer FGD B
	Conflicting Human-Wildlife Prioritization	“If an animal eats a person, there is no justice... the park does not help us or the animals.”	FGD A
	Traditional Resource Use Suppressed	“There’s a compensation policy, but implementation is poor. Elephants trampled a child. Up to now, nothing has been done.”	KII3- Senior Warden -UWA
		“Even for grass or a simple stick, you see firearms. Offices are filled with non-natives.”	FGD B
	Cultural Buffering: Mixed Method Insight	“Now, if you are seen even picking a feather, they arrest you. You are treated like a poacher.”	FGD C
		“Wildlife is good, but UWA is bad. They do not work for Uganda; they work for themselves. If an animal kills a person, no compensation... You are left with your pain.” “Cultural sites are fenced off... people are bitter.”	FGD B KII3- Senior Warden UWA

The qualitative findings in Table 4 demonstrate how cultural values and experiences directly shape perceived and actual community integration and livelihood outcomes while also showing how culture buffers or dilutes the effectiveness of conservation engagement.

This study used a convergent parallel mixed methods design to explore the moderating role of culture in the relationship between community engagement (ENG), community integration (INT), and livelihood outcomes (LIVE) among the Karimojong in Kidepo Valley National

Park, Uganda. The findings from both quantitative and qualitative strands provide complementary insights into how cultural dynamics shape conservation-related experiences and outcomes in this context.

Community Engagement Predicts Integration

Quantitative results showed a statistically significant positive relationship between community engagement and integration, indicating that greater involvement in conservation processes correlates with a stronger sense of community integration. This was supported by qualitative findings where participants described feeling more included when actively engaged through community conservation programs, cultural ceremonies, and localized recruitment (e.g., former elder-led grazing agreements and community warden roles).

"We even had days where cultural groups would dance in the park... That promoted peace." – KII3

"We want to protect animals... let us be trained and trusted." - FGD D

Integration Predicts Livelihood Outcomes

Integration significantly predicted improved livelihood outcomes in the quantitative model. This is consistent with qualitative accounts, where participants linked inclusion in conservation activities, such as employment, resource access, or decision-making, to tangible livelihood benefits. However, narratives also revealed that perceived or absolute exclusion weakens these gains, particularly where benefit-sharing is opaque or selective.

"When we are not involved, how will we support the park? Our food is gone, no compensation." - FGD A

"Let the community sit at the table... not just be called to dig." - KII5

Culture Positively Influences Livelihoods

Quantitative analysis found a direct positive effect of culture on livelihood outcomes, implying that cultural continuity and practices enhance resilience and well-being. This aligns with qualitative insights showing how traditional knowledge systems, healing practices, and cultural identity reinforce community cohesion, food security, and psychological wellbeing.

"Dung is hung to heal the sick... Leopard skin for respected elders." - FGD C

"Our culture taught us how to live with wildlife and each other." - FGD E

Cultural Context Buffers the ENG→INT→LIVE Pathway

While culture directly boosted livelihoods, its interaction with integration was negative and statistically significant, suggesting that strong cultural adherence may reduce the positive effect of integration on livelihoods. Qualitative data illustrated this tension: as conservation policies increasingly restrict cultural expressions (e.g., limiting access to sacred sites or traditional medicine sources), deeply rooted cultural norms become friction points, potentially undermining the intended benefits of community integration efforts.

"Now, even feathers or grass are criminal. How can we accept that?" - FGD B

"Cultural sites are fenced off... people are bitter." - KII3

Moderated Mediation Not Statistically Significant

Although the overall moderated mediation effect was not statistically significant, the qualitative findings offered rich narrative evidence that culture plays a buffering role. This underscores the value of mixed methods, where qualitative data helped contextualize and expand upon complex statistical patterns by illustrating how cultural dynamics act as both facilitators and barriers to livelihood benefits through conservation.

“Wildlife is good, but UWA is bad. They do not work for Uganda; they work for themselves. If an animal kills a person, no compensation... They cannot even take you to the hospital. You are left with your pain.” -FGD B

This quote highlights how institutional failures strain cultural values of coexistence with wildlife, buffering the expected benefits of integration.

“Now, if you are seen even picking a feather, they arrest you. You are treated like a poacher.” -FGD C

This reflects how criminalizing cultural practices diminishes trust and weakens integration, even when communities are nominally engaged.

“Cultural sites that used to be sacred are now within park boundaries. People are denied access. Rituals cannot be performed. That is a source of anger.”

KII4- Senior Environmental Officer

Here, the loss of cultural space and symbolic exclusion act as invisible barriers, reducing the impact of engagement on livelihood outcomes.

These quotes enrich the moderated mediation analysis by offering evidence that strong cultural norms can become barriers when not respected or integrated into conservation, weakening the potential benefits of engagement and integration. They support the idea that culture is not merely a direct enhancer of wellbeing, but a dynamic force that can either help or constrain system effectiveness, depending on how it is engaged.

Integrating quantitative and qualitative results reveals a nuanced dynamic: community engagement enhances integration and livelihoods, but the cultural environment conditions this relationship. While culture contributes positively to well-being, it may also dampen the institutional effectiveness of conservation integration if not adequately recognized. These findings highlight the critical need for culturally sensitive conservation strategies that respect indigenous values while promoting equitable community participation.

This study investigated whether community integration mediates the relationship between community engagement and livelihood outcomes among the Karimojong in Kidepo Valley National Park, and whether cultural context influences this pathway. The findings revealed that while engagement significantly enhances integration, and integration strongly predicts improved livelihoods, the positive effect of integration diminishes in stronger cultural contexts. Culture, though positively associated with livelihood outcomes on its own, appears to buffer or weaken the impact of engagement on livelihoods through integration.

These results support previous research emphasizing the benefits of community participation in conservation initiatives. As Ahebwa et al. (2016) and Ahebwa & Duim (2013) demonstrated, engaged and well-integrated communities often experience better economic and cultural outcomes. However, our findings align with Waylen et al. (2010), who caution that the success of such efforts depends heavily on cultural alignment and institutional support. In this case, heightened cultural influence may introduce competing priorities, norms, or resistance to external engagement processes, dampening the effectiveness of integration on livelihoods.

Although not statistically significant, the observed moderated mediation effect provides a critical insight: culture can be both a resource and a barrier in community-based conservation. This nuanced role mirrors findings from Stone et al. (2021) and Gidebo (2023), who argue for context-specific conservation models that account for socio-cultural dynamics. Additionally, studies like Kiconco et al. (2025) and the Botswana case (Tourism Cases, 2024) reaffirm the importance of diversified and culturally grounded livelihood strategies to strengthen resilience.

That said, the study has limitations. Its cross-sectional design limits causal inference, and cultural context was treated as a single construct, which may overlook intra-group variability. Future research could adopt a longitudinal or ethnographic approach to explore how cultural factors dynamically interact with integration processes over time. Further, expanding the model to include institutional trust or governance could yield more profound insights.

This study contributes to a growing body of evidence emphasizing the complex interplay between community engagement, cultural context, and livelihoods. It highlights the importance of designing conservation interventions that are not only participatory but also culturally responsive. For sustainable impact, policies must integrate cultural sensitivity into community-based conservation planning and execution.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study explored the mediating role of community integration in the relationship between community engagement and livelihood outcomes among the Karimojong in Kidepo Valley National Park, Uganda, while examining the moderating influence of cultural context. The findings confirm that community engagement enhances integration, which in turn contributes to improved livelihoods. However, the effectiveness of this pathway is moderated by cultural factors, where increased cultural influence weakens the positive effect of integration on livelihood outcomes.

These conclusions underscore the importance of culturally informed approaches in community-based conservation and development. While engagement and integration are essential for livelihood improvement, they must be aligned with local cultural norms to be fully effective. Policymakers and practitioners should tailor interventions to respect and incorporate community cultural values, ensuring that development efforts are inclusive and sustainable.

Recommendations

This study highlights the importance of culturally informed approaches to community-based conservation and development among the Karimojong in Kidepo Valley National Park. While community engagement enhances integration and improves livelihoods, cultural factors can weaken this positive relationship. Therefore, interventions must align with local cultural norms. First, community engagement strategies should involve traditional leaders and reflect community values to foster ownership and relevance. Second, practitioners should be trained in cultural competence, and policies must be flexible to accommodate cultural diversity. Lastly, traditional governance structures should be empowered to lead development efforts, supported by monitoring systems assessing livelihood improvements and cultural compatibility. By respecting and incorporating local culture, development initiatives can be more inclusive, sustainable, and impactful for the Karimojong people. These culturally grounded approaches are essential for maximizing the benefits of engagement and integration in similar contexts.

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