

Tourism Entrepreneurship as a Pathway to Sustainable Tourism: Evidence from Communities Adjacent to Arusha National Park, Tanzania

 Mwijarubi B. Lorna ¹,  Korir Jacqueline ² and Rotich Dominic ¹

¹Department of Tourism and Travel Operation Management, School of Tourism, Hospitality and Events Management, Moi University, P.O. Box 3900-30100 Eldoret, Kenya

²Department of Hotel and Hospitality, School of Tourism, Hospitality and Events Management, Moi University, P.O. Box 3900-30100 Eldoret, Kenya

Abstract

Tourism Entrepreneurship provides opportunities for local communities to participate economically in tourism, yet the magnitude and contextual basis of its relationship with multidimensional Sustainable Tourism remain comparatively underexamined in Sub-Saharan African protected area settings. This study examined the relationship between perceived Tourism Entrepreneurship and perceived Sustainable Tourism conceptualized through economic, environmental, and socio-cultural dimensions among communities adjacent to Arusha National Park, Tanzania. Drawing on Economic Base Theory and Social Exchange Theory, the study employed a pragmatic convergent mixed-methods design integrating quantitative, qualitative, and documentary evidence to examine the statistical relationship and provide contextual interpretation. Quantitative data were obtained from 352 adult community residents in King'ori, Maruvango, and Leguruki wards using proportionate stratification by ward followed by field-based respondent recruitment. Qualitative data were obtained from 15 purposively selected key informants representing community, tourism, enterprise, government, and non-governmental stakeholder perspectives, supplemented by documentary analysis of relevant tourism and conservation frameworks. Perceived Tourism Entrepreneurship was relatively high ($M = 3.97$, $SD = 0.31$), whereas perceived Sustainable Tourism was moderate ($M = 3.34$, $SD = 0.30$). Tourism Entrepreneurship was positively associated with Sustainable Tourism ($r = .625$, $p < .001$), corresponding to approximately 39.1% shared variance at the bivariate level. Hierarchical regression showed that Tourism Entrepreneurship remained a positive and statistically significant predictor after accounting for Tourism Planning, Traditional Ecological Knowledge, and Government Support ($\beta = .328$, $p < .001$ in the fully specified model) and recorded the largest

positive standardized regression coefficient among the Local Community Participation dimensions examined. The predictors included collectively in the final model explained 61.4% of the variance in Sustainable Tourism ($R^2 = .614$). Qualitative evidence contextualized the statistical relationship through perceived livelihood opportunities, employment, household income, local economic linkages, and conservation incentives, while documentary evidence showed that enterprise development, community benefits, participation, and conservation were recognized within the relevant institutional frameworks. Financial, capacity, market, seasonal, institutional, and benefit-distribution constraints qualified the extent to which entrepreneurial opportunities were experienced as supporting broader sustainability objectives. Economic Base Theory highlighted the local economic-linkage dimension of the findings, while Social Exchange Theory helped interpret how perceived tourism-derived benefits and costs may relate to community attitudes toward tourism and conservation. The findings suggest that strengthening enterprise capacity and local tourism value chain integration could support more inclusive and sustainable entrepreneurial participation in protected-area communities.

Keywords: Tourism Entrepreneurship, Sustainable Tourism, Local Community Participation, Protected Area Tourism, Tanzania

Correspondence: anrolbonny@gmail.com

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Introduction

Sustainable Tourism has become an important approach to tourism development that seeks to balance economic benefits with environmental conservation and socio-cultural well-being. The concept is rooted in the broader principles of sustainable development articulated by the World Commission on Environment and Development (WCED, 1987), while its application to tourism has subsequently

developed through tourism-specific research and policy frameworks. In this study, Sustainable Tourism is conceptualized as a multidimensional outcome comprising economic, environmental, and socio-cultural sustainability (Legatzke et al., 2024; Lemunge et al., 2025). Economic sustainability encompasses employment and income opportunities, local business development, local sourcing, and the

distribution of tourism benefits; environmental sustainability encompasses community conservation, environmentally responsible practices, waste management, and protection of natural resources; while socio-cultural sustainability encompasses cultural preservation, community participation, social cohesion, and respect for local traditions and values (Hardy et al., 2002; Sharpley, 2020; UN Tourism, 2023). This conceptualization recognizes that tourism sustainability extends beyond visitor numbers and tourism revenue to include outcomes affecting host communities, natural resources, and cultural systems.

Protected areas provide a particularly relevant setting for examining the relationship between community economic participation and Sustainable Tourism because tourism, conservation, and local livelihoods coexist within interconnected social-ecological systems. Protected-area tourism can create employment, enterprise, and livelihood opportunities for neighboring communities while simultaneously operating within conservation regimes that may affect land use, access to natural resources, and interactions between communities and wildlife. The sustainability of protected area tourism therefore depends partly on the extent to which neighboring communities can participate meaningfully in tourism and access benefits associated with tourism development (Lemunge et al., 2025; Zeng et al., 2024). Where tourism benefits are limited or unevenly distributed, tensions between conservation priorities and local livelihood needs may affect community support for tourism and conservation (Nunkoo & Gursoy, 2012; Reindrawati, 2023; Snyder & Sulle, 2011).

Arusha National Park (ANAPA) provides an appropriate protected-area context for examining these relationships. The park forms part of Tanzania's

Northern Tourism Circuit, alongside internationally recognized destinations such as Serengeti National Park, Ngorongoro Conservation Area, and Mount Kilimanjaro. ANAPA attracts domestic and international visitors because of its ecological diversity, scenic landscapes, wildlife resources, and accessibility from major urban and tourism centers (Mushi, 2013; World Bank, 2021). Communities neighboring the park interact with the tourism and conservation system through tourism-related economic activities, natural resource use, and conservation initiatives. At the same time, their livelihoods may be affected by protected area management, land-use pressures, restrictions on natural-resource access, and human wildlife interactions (Wade et al., 2001; World Bank, 2021). The coexistence of tourism opportunities and conservation related livelihood pressures makes communities adjacent to ANAPA particularly relevant for examining the relationship between Tourism Entrepreneurship and Sustainable Tourism.

This relationship occurs within a broader institutional environment in which tourism development, protected-area conservation, enterprise support, and community livelihoods interact. Tourism and conservation institutions influence the conditions within which community enterprises operate through regulation, infrastructure, capacity development, tourism promotion, conservation management, partnerships, and other forms of institutional support. Community Tourism Entrepreneurship may therefore be shaped by access to finance and technical assistance, entrepreneurial capacity, tourism markets, infrastructure, institutional relationships, and connections with established tourism value chains. These conditions are particularly relevant

around protected areas, where opportunities for local enterprise development coexist with conservation objectives and regulatory requirements.

One important form of local economic participation is Tourism Entrepreneurship. In this study, Tourism Entrepreneurship refers to community participation in tourism related entrepreneurial activities and is operationalized through ownership or participation in tourism businesses, access to financial and technical support, employment creation, management capacity, innovation, and income generated from tourism activities. Tourism Entrepreneurship in protected-area communities may encompass formal and informal, small-scale, and household-based activities connected to tourism markets, including accommodation, guiding, transport, food services, handicrafts, cultural tourism, and other locally provided tourism-related goods and services (Legatzke et al., 2024; Zeng et al., 2024). The study did not, however, separately classify enterprises according to formal or informal registration status. The formal informal distinction is therefore recognized as an important feature of the protected-area entrepreneurship context rather than as a separately measured analytical variable. This operationalization also means that Tourism Entrepreneurship is broader than business ownership alone and incorporates participation, enabling conditions, entrepreneurial capacity, innovation, employment, and tourism-derived income.

Economic Base Theory (EBT) provides one theoretical lens for interpreting the relationship between Tourism Entrepreneurship and Sustainable Tourism. EBT suggests that externally generated economic activity, including visitor expenditure, can support local development where it creates

connections with employment, local businesses, procurement, and other economic activities within the destination (Mitchell & Ashley, 2010; Soteriou & Coccossis, 2010). Applied to Tourism Entrepreneurship, this perspective directs attention to the extent to which tourism related enterprises are connected with local workers, producers, suppliers, and other businesses. The present study does not directly measure tourism expenditure retention, economic leakage, or multiplier effects. EBT is therefore used to interpret local economic linkages associated with Tourism Entrepreneurship rather than to claim empirically measured multiplier effects.

Social Exchange Theory (SET) provides a complementary community level perspective. SET proposes that residents' attitudes toward tourism are influenced partly by their perceptions of the benefits and costs associated with tourism development (Nunkoo & Gursoy, 2012). Tourism-related employment, income, entrepreneurial participation, and livelihood opportunities may therefore be associated with more favorable attitudes toward tourism where residents perceive the benefits as meaningful relative to the costs. In protected-area settings, this perspective is particularly relevant because communities may experience tourism derived livelihood opportunities alongside restrictions on resource access, land-use pressures, human wildlife interactions, and other conservation related costs. SET consequently provides a framework for interpreting how perceived tourism benefits and costs may relate to community attitudes toward tourism and conservation. EBT and SET are used as complementary analytical perspectives rather than as a statistically tested causal pathway: EBT focuses on local economic linkages, while SET focuses on community perceptions of

tourism derived benefits and costs. Their detailed application and limitations are developed in the theoretical review.

Recent research indicates that local tourism enterprises may be associated with employment, livelihood diversification, local economic participation, community resilience, and destination development, while also creating potential connections between tourism livelihoods and environmental and cultural stewardship (Suriyankietkaew et al., 2025; Zeng et al., 2024). However, these relationships are neither automatic nor uniformly distributed. Community entrepreneurs may encounter limited access to finance, weak market linkages, seasonal tourism demand, inadequate entrepreneurial and managerial capacity, institutional constraints, and unequal access to tourism opportunities. Consequently, favorable conditions for Tourism Entrepreneurship do not necessarily correspond to equally favorable economic, environmental, and socio-cultural sustainability outcomes. Understanding the Tourism Entrepreneurship and Sustainable Tourism relationship therefore requires consideration of the market, institutional, distributional, livelihood, and conservation conditions within which entrepreneurial participation occurs.

Despite increasing attention to community participation, community-based tourism, and tourism entrepreneurship, research gaps remain regarding how entrepreneurial participation specifically connects with multidimensional sustainability in protected-area communities. Though past research highlights general enterprise impacts, there is limited understanding of the specific extent of this relationship alongside the contextual livelihood, conservation, market, and institutional conditions that shape it in

Sub-Saharan African protected areas, particularly in northern Tanzania.

Addressing this research gap, the present study examines the relationship between Tourism Entrepreneurship and Sustainable Tourism among communities adjacent to ANAPA, accounting for Local Community Participation and Government Support. Utilizing a convergent mixed-methods design grounded in EBT and SET, the study evaluates individual adult residents as the unit of analysis, integrating quantitative statistical estimates with qualitative and documentary evidence to provide context-specific insights into local sustainability outcomes without assuming direct causal effects.

Empirical Literature Review and Hypothesis Development

Sustainable Tourism in protected areas requires tourism development to enhance economic well-being while conserving natural ecosystems and safeguarding socio-cultural frameworks (Hardy et al., 2002; Sharpley, 2020; UN Tourism, 2023). Economic sustainability encompasses job creation, income generation, local business expansion, and equitable benefit distribution; environmental sustainability focuses on biodiversity conservation, responsible resource consumption, and waste management; and socio-cultural sustainability emphasizes heritage preservation, social cohesion, and community participation. In African protected areas, community-based tourism frequently generates critical livelihood opportunities and conservation incentives (Manyara & Jones, 2007; Mbaiwa, 2011; Stone & Stone, 2011). However, real-world outcomes fluctuate significantly depending on local ownership structures, institutional

arrangements, financial access, and broader market dynamics (Melita & Mendlinger, 2013; Muganda et al., 2012). Consequently, Tourism Entrepreneurship must be recognized as a specific economic mechanism of community participation rather than conflated with the comprehensive, multidimensional outcome of Sustainable Tourism itself.

Community Participation composed of multiple dimensions, including planning, decision-making, natural resource management, and enterprise involvement (Zeng et al., 2024). Within this broader framework, Tourism Entrepreneurship captures the economic dimension of engagement. In this study, it is operationalized through six core indicators: tourism business ownership or participation, access to financial and technical support, employment creation, management capacity, innovation, and tourism-derived income. These entrepreneurial activities take place across formal, informal, small-scale, and household-based operations such as guiding, transport, catering, accommodation, and handicrafts (Melita et al., 2013). Nevertheless, entrepreneurial activity does not automatically guarantee local empowerment. Access to enterprise opportunities remains constrained by unequal distributions of capital, skills, land, and market access (Lemunge et al., 2025; Zeng et al., 2024). Furthermore, poorly managed micro-enterprises can exacerbate local environmental pressures or induce cultural commodification, underscoring the need to assess entrepreneurship against broader sustainability benchmarks.

Viewed through Economic Base Theory (EBT), the overall economic impact of Tourism Entrepreneurship relies heavily on the strength of local value chain linkages. High visitor expenditure often fails to benefit

adjacent communities when accommodation, food supplies, transport, and management systems are externally owned or imported (Mitchell & Ashley, 2010). Deliberate integration between tourism enterprises and local suppliers—such as agricultural producers, artisans, and service providers is vital to reduce economic leakage and retain expenditure locally (Rylance & Spenceley, 2017). However, local ownership alone does not completely prevent leakage, as small-scale businesses frequently struggle to satisfy tourism industry standards regarding product quality, volume, reliability, and technological integration. Additionally, higher-value opportunities within the tourism value chain are predominantly captured by well-resourced entrepreneurs, leaving smaller producers confined to low-yield activities (Teruel-Sanchez et al., 2025; Zeng et al., 2024).

Under Social Exchange Theory (SET), community perceptions and attitudes toward tourism and conservation are driven by their evaluation of perceived benefits against associated costs (Nunkoo & Gursoy, 2012). When residents experience meaningful economic returns from tourism employment and enterprise, they are more likely to support conservation goals (Mbaiwa, 2011; Stone & Stone, 2011). However, entrepreneurship does not inherently lead to conservation-oriented behavior. Local enterprises can increase demand for regional land, water, energy, and construction materials, while conservation incentives tend to erode if enterprise yields remain low, irregular, or concentrated among a small elite. Similarly, cultural ventures provide vital economic returns and visibility, but they carry the risk of altering or staging local traditions to satisfy.

Studies across Sub-Saharan Africa show that local tourism enterprises

support income generation and livelihood diversification, yet their long-term viability is repeatedly hindered by market constraints, limited supply capacities, and governance barriers in Botswana (Mbaiwa, 2011), Kenya (Manyara & Jones, 2007), and broader Southern Africa (Rylance & Spenceley, 2017; Snyman & Spenceley, 2012). Evidence from Tanzania's Northern Tourism Circuit confirms that geographical proximity to protected wildlife areas does not automatically ensure access to high-value markets or equitable benefit distribution (Melita & Mendlinger, 2013; Muganda et al., 2012; Gayo & Katonge, 2025; Lemunge et al., 2025). Specifically, regarding Arusha National Park (ANAPA), empirical literature isolating Tourism Entrepreneurship as an independent explanatory variable relative to multidimensional sustainability remains sparse. Combining statistical estimates with qualitative analysis via a convergent mixed-methods framework resolves existing methodological limitations by grounding quantitative associations in contextual reality.

An analysis of the literature reveals interconnected conceptual, methodological, and contextual research gaps. Conceptually, previous research frequently aggregates community participation into a single broad construct, masking the distinct, isolated relationship between Tourism Entrepreneurship and multidimensional Sustainable Tourism. Methodologically, existing studies rely predominantly on isolated quantitative or qualitative frameworks, lacking integrated statistical and contextual insights. Contextually, empirical evidence systematically examining these dynamics in communities neighboring ANAPA remains limited compared to other regional conservation areas (Manyara & Jones, 2007; Mbaiwa, 2011; Melita &

Mendlinger, 2013; Muganda et al., 2012; Rylance & Spenceley, 2017; Snyman & Spenceley, 2012). Grounded in EBT (local economic linkages) and SET (perceived trade-offs between benefits and costs), while recognizing structural limits like leakage and capital barriers, the study formulates the following relational null hypothesis:

H₀₁: *Tourism Entrepreneurship has no significant relationship with Sustainable Tourism among communities adjacent to Arusha National Park, Tanzania.*

Conceptual Framework

This study conceptualizes Tourism Entrepreneurship as the focal explanatory variable and Sustainable Tourism as the multidimensional outcome. Operationalized at the individual community-respondent level using perception-based items, Tourism Entrepreneurship captures six core indicators: business ownership or participation, access to financial and technical support, employment creation, management capacity, innovation, and tourism-generated income. Sustainable Tourism is operationalized through economic sustainability (employment, income, local business development, sourcing, and benefit distribution), environmental sustainability (conservation, responsible practices, waste management, and resource protection), and socio-cultural sustainability (cultural preservation, participation, social cohesion, and respect for local values). These three dimensions are evaluated individually and as a combined composite measure for inferential analysis.

The framework incorporates Tourism Planning and Traditional Ecological Knowledge as additional, theoretically specified dimensions of Local Community Participation alongside Government Support as an institutional

predictor. Including these variables allows the model to estimate the focal relationship between Tourism Entrepreneurship and Sustainable Tourism while statistically controlling for related participatory and institutional factors.

Grounded in Economic Base Theory (EBT) and Social Exchange Theory (SET), the framework posits a positive relationship between Tourism Entrepreneurship and

Sustainable Tourism. EBT provides the interpretive basis for local economic linkages, while SET explains how perceived tourism benefits relative to costs influence community attitudes toward tourism and conservation. Demographic characteristics and interactive moderation effects are excluded as they were not specified as focal covariates or interaction terms in the analytical model.

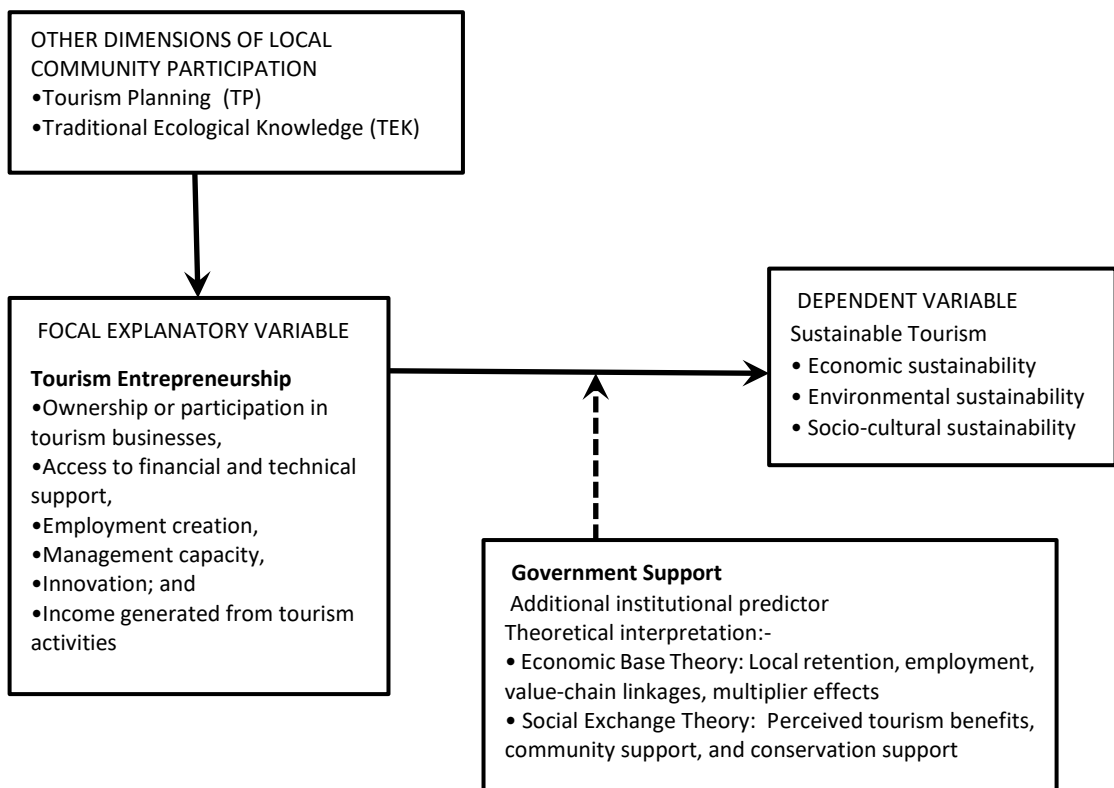


Figure 1. Conceptual Framework of the Tourism Entrepreneurship-Sustainable Tourism Relationship

Note. Tourism Planning and Traditional Ecological Knowledge represent other dimensions of Local Community Participation included in the analytical model. Government Support was introduced as an additional predictor in Model 2. The present study tested Government Support as a moderator of the overall Local Community Participation-Sustainable Tourism

relationship; Tourism Entrepreneurship specific moderation was not tested and is therefore not depicted in this article.

Source. Adapted from the original study conceptual framework and informed by Economic Base Theory and Social Exchange Theory; modified for the focus of the present article.

Research Methodology

Guided by pragmatism, this study prioritized addressing the research problem by integrating quantitative and qualitative evidence to capture both the statistical magnitude of relationships and contextual community dynamics (Creswell & Plano Clark, 2018). A convergent mixed-methods design was implemented wherein quantitative survey data and qualitative key informant interview data were collected concurrently during the same phase, analyzed independently, and subsequently integrated during interpretation alongside documentary review for triangulation (Creswell & Plano Clark, 2018).

The study was conducted in Meru District Council (MDC), Arusha Region, northern Tanzania, across three accessible wards adjacent to Arusha National Park (ANAPA): King'ori, Maruvango, and Leguruki. Security-related access constraints during the 2025 post-election period restricted fieldwork to these three accessible wards bordering ANAPA, which comprise a combined target population of 32,358 residents (National Bureau of Statistics [NBS], 2022). The quantitative sample size was determined using Cochran's (1977) formula:

$$n = Z^2 \cdot p(1-p) / e^2$$

Where:

n = sample size

$Z = 1.96$ (confidence level = 95%)

$P = 0.5$

$e = 0.05$

Substituting the values:

$$n = [(1.96 \times 1.96) \times 0.5(1-0.5)] / 0.0025 \\ = 384.16 \approx 384$$

A quantitative sample of 384 adult residents (aged 18) was calculated and distributed across the wards using proportionate stratification: King'ori ($n = 155$), Maruvango ($n = 116$), and Leguruki ($n = 113$). Field-based recruitment was

conducted within each ward due to the absence of a complete individual-level sampling frame. For the qualitative strand, 25 key informants across seven stakeholder groups including local government officers, NGO representatives, community leaders, hoteliers, tour guides, and craft vendors were purposively selected.

Variables were operationalized through multi-item Likert scales ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), capturing 10 items each for Tourism Planning (TP), Tourism Entrepreneurship (TE), Traditional Ecological Knowledge (TEK), Government Support (GS), and Sustainable Tourism (ST). The focal Tourism Entrepreneurship construct was measured through perceived enterprise creation opportunities, local economic benefits, and market access (e.g., TE1, TE5, TE8). Sustainable Tourism was evaluated as a 30-item composite across three 10-item sub-dimensions: Economic Sustainability assessed household income contributions, employment, and benefit distribution (e.g., ECs1, ECs2, ECs5); Environmental Sustainability evaluated natural resource conservation, forest protection, and poaching reduction (e.g., ENVs1, ENVs4, ENVs9) and Socio-Cultural Sustainability captured cultural preservation, social cohesion, and tourist-resident interactions (e.g., SCs1, SCs3, SCs9). Instrument validity was assessed through literature review, expert evaluation, and pilot testing. Four experts reviewed the questionnaire for relevance, clarity, construct coverage, and contextual appropriateness. The revised instrument was pilot tested with 40 respondents in Arusha City. Reliability was assessed using Cronbach's alpha, with coefficients ranging from 0.70 to 0.88, indicating acceptable to good internal consistency.

Quantitative and qualitative data were analyzed separately and subsequently integrated in accordance with the convergent mixed-methods design. Quantitative data were analyzed using Microsoft Excel and IBM SPSS Statistics. Data were first screened for missing values, outliers, and inconsistencies. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' characteristics and the study variables. Pearson's product-moment correlation coefficient (r) was used to establish the strength and direction of relationships among Tourism Planning (TP), Tourism Entrepreneurship (TE), Traditional Ecological Knowledge (TEK), Government Support (GS), and Sustainable Tourism (ST).

Hierarchical multiple linear regression was used to determine the relationship between Tourism Entrepreneurship and Sustainable Tourism while controlling for other theoretically specified variables. Three regression models were estimated.

Model 1 included the three dimensions of Local Community Participation:

$$ST = \beta_0 + \beta_1TP + \beta_2TE + \beta_3TEK + \epsilon$$

Model 2 added Government Support:

$$ST = \beta_0 + \beta_1TP + \beta_2TE + \beta_3TEK + \beta_4GS + \epsilon$$

Model 3 retained the interaction specified in the present study between overall Local Community Participation and Government Support:

$$ST = \beta_0 + \beta_1TP + \beta_2TE + \beta_3TEK + \beta_4GS + \beta_5(GS \times LCP) + \epsilon$$

where ST represents Sustainable Tourism, TP Tourism Planning, TE Tourism Entrepreneurship, TEK Traditional Ecological Knowledge, GS Government

Support, β_0 the intercept, β the regression coefficients, and ϵ the error term. Model comparisons considered R^2 , ΔR^2 , regression coefficients, and statistical significance.

Standard diagnostics (VIF, tolerance, standardized residual plots, P-P plots, Cook's Distance, Durbin-Watson) confirmed that statistical assumptions were satisfied. Qualitative interview transcripts underwent thematic analysis (Braun & Clarke, 2006, 2021) supported by content and narrative interpretation. Integration occurred during the discussion using side-by-side comparative weaving. Institutional approvals and research authorizations were granted by Moi University (Ref: MU/STHE/PG/23), TAWIRI (Ref: AB.235/325/01“A"/125), and COSTECH (Permit No. CST00001592-2025-2025-01409), with informed consent, voluntary participation, and participant confidentiality maintained throughout.

Results

Descriptive Statistics of the Study Constructs

Descriptive statistics for the study constructs are presented in Table 1. Based on the five-point scale, mean scores of 1.00-1.80 were interpreted as very low, 1.81-2.60 as low, 2.61-3.40 as moderate, 3.41-4.20 as high, and 4.21-5.00 as very high.

Tourism Entrepreneurship recorded a relatively high mean score ($M = 3.97$, $SD = 0.31$), with observed scores ranging from 2.60 to 4.70. This indicates generally favorable respondent perceptions of tourism-related entrepreneurial opportunities and conditions. As specified in the measurement section, this is a perception based composite and should not be interpreted as the proportion of

respondents owning tourism enterprises or as a measure of enterprise income.

Overall Sustainable Tourism recorded a moderate mean ($M = 3.34$, $SD = 0.30$). Among its dimensions, Socio-Cultural Sustainability recorded the highest mean ($M = 3.44$, $SD = 0.32$), followed by Economic Sustainability ($M = 3.31$, $SD = 0.29$) and Environmental Sustainability ($M = 3.27$, $SD = 0.31$). Socio-Cultural Sustainability recorded the highest descriptive mean, followed by

Economic and Environmental Sustainability, although no inferential comparison among the dimension means was conducted.

Among the other constructs retained in the multivariable analysis, Traditional Ecological Knowledge recorded the highest mean ($M = 4.48$, $SD = 0.40$), followed by Government Support ($M = 3.31$, $SD = 0.45$), while Tourism Planning recorded the lowest mean ($M = 2.50$, $SD = 0.37$).

Table 1: Descriptive Statistics of the Study Constructs

Construct	N	Minimum	Maximum	Mean	SD	Descriptive Interpretation
Tourism Entrepreneurship	352	2.60	4.70	3.97	0.31	High
Sustainable Tourism	352	2.27	3.97	3.34	0.30	Moderate
Economic Sustainability	352	2.39	4.03	3.31	0.29	Moderate
Environmental Sustainability	352	2.17	3.36	3.27	0.31	Moderate
Socio-Cultural Sustainability	352	2.25	4.52	3.44	0.32	High
Tourism Planning	352	1.60	3.60	2.50	0.37	Low
Traditional Ecological Knowledge	352	3.10	5.00	4.48	0.40	Very high
Government Support	352	2.50	4.90	3.31	0.45	Moderate

Source: Data Analysis (2025).

Pearson Correlation Analysis

Pearson's product-moment correlation coefficient was used to examine the bivariate relationships among Tourism Planning (TP), Tourism Entrepreneurship (TE), Traditional Ecological Knowledge (TEK), Government Support (GS), and Sustainable Tourism (ST). The analysis was conducted using the composite scores derived from the multi-item measures, which were treated as approximately continuous variables.

As shown in Table 2, Tourism Entrepreneurship was positively

associated with Sustainable Tourism ($r = 0.625$), indicating that higher perceived Tourism Entrepreneurship was associated with higher perceived Sustainable Tourism. The corresponding shared variance was approximately 39.1% ($r^2=0.391$): however, this represents bivariate shared variance and should not be interpreted as a causal effect or as the independent contribution of Tourism Entrepreneurship to Sustainable Tourism. Traditional Ecological Knowledge ($r = 0.607$) and Government Support ($r = 0.626$)

were also positively associated with Sustainable Tourism, whereas Tourism Planning showed a comparatively weak negative association ($r = -.196$).

Correlations among the predictors ranged in absolute magnitude from 0.102 to 0.491, with the largest occurring between Traditional Ecological

Knowledge and Government Support ($r = 0.491$). The observed bivariate correlations among the predictors were moderate or lower; formal assessment of multicollinearity was subsequently undertaken using tolerance and Variance Inflation Factor (VIF) statistics in the regression analysis as shown in table 2.

Table 2: Pearson Product-Moment Correlation Matrix

Variable	TP	TE	TEK	GS	ST
Tourism Planning (TP)	1.000	-.102**	-.232***	-.121**	-.196***
Tourism Entrepreneurship (TE)	-.102***	1.000	.423***	.424***	.625***
Traditional Ecological Knowledge (TEK)	-.232***	.423***	1.000	.491***	.607***
Government Support (GS)	-.121***	.424***	.491***	1.000	.626***
Sustainable Tourism (ST)	-.196***	.625***	.607***	.626***	1.000

Note. N=352. Pearson product-moment correlations. *** $p < .001$ and $p < .01$ Source: Data Analysis (2025).

Hierarchical Regression Analysis

Hierarchical multiple linear regression was conducted to examine the association between Tourism Entrepreneurship (TE) and Sustainable Tourism (ST) while accounting for the other theoretically specified variables.

Regression diagnostics indicated that the assumptions required for hierarchical multiple linear regression were adequately satisfied. Examination of the residual plots indicated acceptable linearity and homoscedasticity, while the residual distribution was approximately normal. Multicollinearity was not problematic, with tolerance values ranging from .587 to .676 and VIF values from 1.478 to 1.704 for the principal

predictors. The Durbin–Watson statistics were 1.634, 1.708, and 1.648 for Models 1, 2, and 3, respectively, all within the adopted acceptable range of 1.5-2.5 and therefore supporting the independence-of-errors assumption.

Three models were estimated. Model 1 included Tourism Planning (TP), Tourism Entrepreneurship (TE), and Traditional Ecological Knowledge (TEK). Model 2 added Government Support (GS), while Model 3 incorporated the interaction between overall Local Community Participation and Government Support ($LCP \times GS$), consistent with the moderation specification of the study as shown in Table 3.

Table 3: Hierarchical Regression Models Predicting Sustainable Tourism

Predictor / Model statistic	Model 1	Model 2	Model 3
Tourism Planning (β)	-0.046	-0.044	-0.083
Tourism Entrepreneurship (β)	0.433	0.349	0.328
Traditional Ecological Knowledge (β)	0.336	0.233	0.208
Government Support (β)	-	0.219	0.227
$LCP \times GS$ (β)	-	-	0.132
R^2	0.537	0.612	0.614

Adjusted R ²	0.533	0.608	0.608
ΔR^2	-	0.075	0.002
F	134.372	136.912	109.987

Note. N = 352. Dependent variable = Sustainable Tourism. β = standardized regression coefficient; LCP = Local Community Participation; GS = Government Support. $p < .001$. *The LCP $\times$ GS interaction was not statistically significant ($p = 0.222$), and Tourism Planning was not statistically significant across the models.*

Source: Data Analysis (2025).

Model 1 explained 53.7% of the variance in Sustainable Tourism ($R^2=0.537$, adjusted $R^2=0.533$). Adding Government Support in Model 2 increased explained variance by 7.5 percentage points ($\Delta R^2 = 0.075$), resulting in $R^2 = 0.612$ and adjusted $R^2 = 0.608$. Model 3 produced only a marginal additional increase ($\Delta R^2=0.002$), with $R^2 = 0.614$ and adjusted $R^2 = 0.608$. All three overall regression models were statistically significant ($p < 0.001$), while the LCP $\times$ GS interaction in Model 3 was not statistically significant ($\beta = 0.132$, $p = 0.222$).

Of particular importance to this article, Tourism Entrepreneurship remained positively and statistically significantly associated with Sustainable Tourism across all three models. It recorded $\beta = 0.433$, $t = 11.123$, $p < 0.001$ in Model 1, $\beta = 0.349$, $t = 9.424$, $p < 0.001$ in Model 2, and $\beta = 0.328$, $t = 7.997$, $p < 0.001$ in Model 3. Thus, the positive association persisted after accounting for the other Local Community Participation dimensions, Government Support, and the interaction term included within the hierarchical regression analysis.

Accordingly, the null hypothesis of no significant relationship between Tourism Entrepreneurship and Sustainable Tourism was rejected. The regression results support a positive and statistically significant association between Tourism Entrepreneurship and Sustainable Tourism among the surveyed communities adjacent to Arusha National Park.

Qualitative Findings

Qualitative analysis of 15 key-informant interviews, using thematic analysis with selective narrative interpretation, identified four interconnected themes concerning how participants understood the relationship between Tourism Entrepreneurship and Sustainable Tourism.

Participants consistently associated tourism-related enterprises with livelihood diversification and household income generation. Activities such as guiding, handicraft production, accommodation support, food services, transport, and cultural tourism initiatives were described as providing alternatives to conventional agriculture and pastoralism, particularly where traditional livelihoods proved insufficient. As one participant explained, "Entrepreneurship provides income for families" (GO1), while another noted, "My family income has increased" (TE2). These accounts suggest that entrepreneurial participation was experienced as a practical form of economic adaptation and resilience, though they represent perceived rather than objectively measured changes.

Employment and local economic participation emerged as a second theme. Participants described tourism as creating jobs, particularly for youth "Tourism creates jobs for youth" (CL1) and enabling wider community involvement across the tourism value chain. However, this positive picture was qualified by concerns that opportunities were not equally accessible.

A third theme concerned perceived conservation incentives. Participants described tourism-dependent livelihoods as creating an economic stake in protecting natural resources. "When we earn from tourism, we protect nature" (TE1), one participant stated, while another observed, "Businesses depend on sustainability" (TE6). Community ownership and responsibility were also emphasized: "Entrepreneurship gives us ownership of tourism" (TE6). These perceptions coexisted with acknowledged livelihood pressures from protected-area restrictions, and should not be interpreted as independently verified conservation outcomes.

The fourth theme identified constraints limiting how entrepreneurial participation translated into broader sustainability benefits. Prominent concerns included restricted market access "Access to markets is still difficult" (TE5) inadequate training and entrepreneurial skills "We need more training to improve businesses" (TE4) limited capital, and unequal benefit distribution. "Not everyone benefits equally" (NR3), one participant observed, indicating that the existence of opportunities did not ensure equitable or sustained community-wide gains.

Documentary analysis of tourism and conservation frameworks provided complementary institutional context. National tourism policy, protected-area planning documents, and wildlife management frameworks consistently emphasized community economic participation, livelihood support, enterprise development, benefit sharing, and conservation-linked community involvement. These documents situated enterprise development within a broader governance system rather than as an isolated community activity.

These quantitative, qualitative, and documentary findings were integrated. The quantitative finding that Tourism Entrepreneurship was positively and significantly associated with Sustainable Tourism ($r = .625$; $\beta = .328-.433$ across models, all $p < .001$) was contextualized by qualitative evidence showing how participants connected entrepreneurial participation with income, employment, and perceived conservation incentives. Documentary evidence further aligned these patterns with institutional priorities linking community benefits and conservation.

However, the qualitative evidence also qualified the positive statistical relationship. While perceived Tourism Entrepreneurship was relatively high ($M = 3.97$), perceived Sustainable Tourism remained moderate ($M = 3.34$). Participants' accounts of market access barriers, capital and skills constraints, and unequal benefit distribution help explain why favorable entrepreneurial conditions did not uniformly translate into broader multidimensional sustainability. The qualitative and documentary evidence therefore provide contextual explanation and institutional grounding for the statistical association, without establishing that Tourism Entrepreneurship independently caused measurable improvements in employment, household income, or environmental conditions.

Discussion

This study examined the relationship between Tourism Entrepreneurship and Sustainable Tourism among communities adjacent to Arusha National Park in northern Tanzania. The findings provide quantitative, qualitative, and documentary evidence of a positive association, while showing that its sustainability significance is shaped by

economic, environmental, socio-cultural, market, and institutional conditions. The discussion integrates these evidence streams through Economic Base Theory and Social Exchange Theory.

Tourism Entrepreneurship and Sustainable Tourism

The qualitative findings contextualized the statistical relationship by identifying employment, household income, livelihood diversification, local value chain linkages, and conservation incentives as important outcomes associated with tourism enterprises. They therefore complemented the correlation and regression results by identifying mechanisms through which the relationship was experienced within the study communities. At the same time, participants identified inadequate capital, limited market access, training and skills constraints, and unequal access to tourism benefits as conditions restricting the extent to which entrepreneurial participation translated into broader sustainability outcomes.

Documentary evidence provided corresponding institutional context. The reviewed tourism and conservation frameworks emphasized livelihood support, tourism related income generating activities, benefit sharing, enterprise development, conservation education, and collaborative conservation. TANAPA and Arusha National Park planning frameworks particularly recognized livelihood and conservation relationships between protected areas and neighboring communities, while Wildlife Management Area frameworks linked tourism derived economic benefits with community participation and conservation stewardship. The documentary evidence therefore reinforced the institutional relevance of the livelihood and

conservation linkages identified through the survey and interviews.

These findings are consistent with research showing that locally embedded and community-based tourism enterprises can strengthen livelihoods and local participation in tourism economies while remaining constrained by finance, skills, markets, infrastructure, institutional conditions, and unequal benefit distribution (Bello et al., 2018; Gayo & Katonge, 2025; Legatzke et al., 2024; Mbaiwa, 2011; Scheyvens, 2002; Zeng et al., 2024). Evidence from Northern Tanzania similarly identifies tourism-related income and livelihood diversification alongside continuing capacity, marketing, infrastructure, and governance constraints (Gayo & Katonge, 2025). The moderate Sustainable Tourism score, despite relatively high Tourism Entrepreneurship, further suggests that entrepreneurial participation should not be equated with multidimensional sustainability. Its contribution depends on local capacity, access to opportunities, institutional support, local economic linkages, and the equitable distribution and durability of tourism benefits (Legatzke et al., 2024; Lemunge et al., 2025; Zeng et al., 2024).

Tourism Entrepreneurship, Local Economic Linkages and Economic Base Theory

The findings support interpretation of Tourism Entrepreneurship through Economic Base Theory (EBT). Qualitative evidence indicated that tourism enterprises were linked with agricultural produce, transport, construction inputs, handicrafts, food, and other locally supplied goods and services. Such linkages may enable visitor expenditure to circulate through interconnected local economic activities when enterprises employ residents and purchase locally

produced inputs, consistent with EBT and tourism led local economic development literature (Mitchell & Ashley, 2010; Soteriou & Coccossis, 2010). Employment and local value chain integration have similarly been identified as mechanisms through which tourism can extend economic benefits within African destinations (Snyman & Spenceley, 2012). This interpretation is particularly relevant to economic leakage. Tourism may generate substantial expenditure without corresponding local development when ownership, labor, supplies, transport, and other components of the tourism value chain are sourced externally (Mitchell & Ashley, 2010). Locally embedded Tourism Entrepreneurship may create channels for greater local retention and circulation of visitor expenditure through employment, procurement, and linkages with other community enterprises.

Documentary evidence provided corresponding institutional context. The reviewed TANAPA, Arusha National Park, and Wildlife Management Area frameworks emphasized livelihood support, tourism related income generating activities, enterprise development, and benefit sharing as mechanisms for community economic participation in protected area tourism. However, neither the documentary evidence nor the present study established the magnitude of expenditure retention or multiplier effects. The study did not directly measure leakage rates, expenditure multipliers, enterprise revenues, or the proportion of tourism expenditure retained within the three wards. The evidence therefore identifies local economic linkages consistent with EBT rather than demonstrating reduced leakage or quantified multiplier effects.

The findings consequently suggest that the developmental significance of Tourism Entrepreneurship depends not only on enterprise

participation but also on integration into local tourism value chains. Enterprises that employ residents, procure locally, and connect with farmers, artisans, transport providers, food suppliers, and other community businesses may generate broader local economic benefits than enterprises with weak local linkages.

Tourism Entrepreneurship, Conservation Incentives and Social Exchange Theory

The qualitative findings extend the Tourism Entrepreneurship and Sustainable Tourism relationship beyond economic outcomes. Participants linked the continuity of tourism enterprises with the ecological condition and attractiveness of Arusha National Park, suggesting that enterprises dependent on visitor flows may have an economic interest in wildlife protection, environmental quality, and responsible resource use.

This relationship is consistent with Social Exchange Theory (SET), which proposes that residents' attitudes toward tourism are influenced by their evaluation of its perceived benefits and costs (Nunkoo & Gursoy, 2012). In protected-area communities, conservation may impose costs through restricted resource access, land-use constraints, and human-wildlife interactions. Where tourism generates meaningful livelihood benefits, residents may be more likely to evaluate tourism and conservation favorably. Participants associated Tourism Entrepreneurship with income, employment, and livelihood diversification while linking these benefits with resource protection. As one tourism entrepreneur stated, "When we earn from tourism, we protect nature" (TE1). These accounts suggest a plausible mechanism through which tourism-derived benefits may strengthen incentives to protect resources supporting tourism livelihoods.

Documentary evidence provided corresponding institutional context. The reviewed protected-area and wildlife management frameworks linked community livelihoods, benefit sharing, tourism related income generating activities, and local participation with conservation and stewardship. Together with the interview evidence, this suggests a potentially reinforcing relationship in which natural and cultural resources support tourism opportunities, entrepreneurial participation generates livelihood benefits, and perceived benefits may strengthen incentives to maintain the resources upon which tourism depends. This provides a SET based interpretation of how Tourism Entrepreneurship may be associated with environmental as well as economic sustainability, without implying that entrepreneurship itself causes conservation behavior.

However, this relationship is neither automatic nor necessarily uniform. SET implies that support for tourism and conservation may weaken where benefits are inadequate, insecure, or unevenly distributed, or where perceived costs exceed benefits. This qualification is consistent with participants' accounts of unequal benefits, including the observation that "Not everyone benefits equally" (NR3), and with reported market and skills constraints. Tourism Entrepreneurship is therefore more likely to support favorable tourism and conservation attitudes where opportunities and benefits are meaningful, accessible, durable, and sufficiently distributed within host communities.

Constraints on the Entrepreneurship-Sustainability Relationship

The findings challenge an overly linear assumption that greater Tourism Entrepreneurship necessarily

corresponds to stronger Sustainable Tourism outcomes. Tourism Entrepreneurship was relatively high ($M = 3.97$), whereas Sustainable Tourism remained moderate ($M = 3.34$). Although these means represent different constructs and do not constitute a statistical test of a "gap," their descriptive contrast is consistent with the qualitative evidence that favorable entrepreneurial conditions do not necessarily translate fully into multidimensional sustainability. The qualitative findings identified market access, entrepreneurial skills, and unequal benefit distribution as important constraints. Participants reported that "Access to markets is still difficult" (TE5) and "We need more training to improve businesses" (TE4), while another observed that "Not everyone benefits equally" (NR3). These accounts indicate that enterprise development may generate livelihood opportunities without ensuring that enterprises are sufficiently competitive or that benefits are widely distributed across neighboring communities.

This distinction is important because Sustainable Tourism encompasses economic, environmental, and socio-cultural dimensions. Enterprise development may generate income and employment while broader outcomes remain dependent on benefit distribution, conservation practices, community participation, and institutional conditions. Documentary evidence reinforces this qualification by positioning enterprise development within a wider governance environment involving livelihood support, benefit sharing, capacity building, tourism promotion, and conservation management. Entrepreneurship should therefore be understood as operating within, rather than independently of, the institutional environment supporting Sustainable Tourism.

These findings are consistent with research showing that the sustainability benefits of community-based tourism and local entrepreneurship may be constrained by limited skills, market access, institutional support, and unequal access to tourism opportunities and benefits (Bello et al., 2018; Mbaiwa, 2011; Scheyvens, 2002). The findings also connect the study's theoretical perspectives: from an Economic Base Theory perspective, weak local economic linkages may limit the circulation of tourism benefits, while Social Exchange Theory suggests that inadequate or unequally distributed benefits may weaken favorable community evaluations of tourism and conservation.

Tourism Entrepreneurship is therefore an important form of local economic participation associated with Sustainable Tourism, but entrepreneurial activity alone is insufficient to ensure stronger sustainability outcomes. Its broader significance depends on whether opportunities are viable, locally connected, inclusive, institutionally supported, and compatible with conservation and community development objectives.

Theoretical and Empirical Contribution

The study contributes theoretically by integrating Economic Base Theory (EBT) and Social Exchange Theory (SET) to interpret the relationship between Tourism Entrepreneurship and Sustainable Tourism. EBT explains how locally embedded tourism enterprises may connect visitor expenditure with employment, household income, local procurement, and wider local economic activity, while SET explains how perceived tourism benefits and costs may shape community attitudes toward tourism and conservation. Together, the theories suggest that entrepreneurial participation may generate local economic benefits

that strengthen the value attached to tourism and its resource base, although market access, entrepreneurial skills, benefit distribution, and institutional conditions may constrain these relationships. These mechanisms are theoretically informed interpretations rather than statistically tested mediating pathways.

Empirically, the study provides evidence from communities adjacent to Arusha National Park, where the relationship between Tourism Entrepreneurship and multidimensional Sustainable Tourism remains comparatively underexamined. Tourism Entrepreneurship retained a positive and statistically significant association with Sustainable Tourism after accounting for Tourism Planning, Traditional Ecological Knowledge, and Government Support. Interview evidence contextualized this relationship through livelihoods, employment, local economic linkages, conservation incentives, market access, skills, and unequal benefit distribution.

Documentary analysis extends this contribution by showing that livelihood support, tourism related enterprise development, benefit sharing, and conservation linked community participation are recognized within the institutional frameworks governing protected area tourism. Rather than independently validating the statistical association, the documentary evidence situates it within the wider policy and institutional environment. The convergent mixed methods design therefore enabled statistical evidence to be interpreted alongside community experiences and institutional context, revealing convergence, complementarity, and qualification across the evidence streams.

Conclusion

This study examined the relationship between Tourism Entrepreneurship and Sustainable Tourism among communities adjacent to Arusha National Park. Perceived Tourism Entrepreneurship was positively and statistically significantly associated with perceived Sustainable Tourism and remained significant after accounting for the other theoretically specified variables in the hierarchical regression models. Accordingly, the null hypothesis that Tourism Entrepreneurship has no significant relationship with Sustainable Tourism was rejected. Within the hierarchical regression analysis, Tourism Entrepreneurship also recorded the largest positive standardized regression coefficient among the Local Community Participation dimensions examined.

Recommendations

Based on the findings, support for locally embedded Tourism Entrepreneurship should form an important component of Sustainable Tourism strategies for communities adjacent to Arusha National Park. Tourism and conservation institutions, local government authorities, development organizations, and relevant private-sector actors should consider strengthening support for community based enterprises through entrepreneurial and managerial capacity development, business development services, improved access to market information and tourism networks, and appropriate financing opportunities. Such support should address not only enterprise start up but also the viability, continuity, and adaptation of existing tourism related businesses.

Greater attention should be given to integrating community enterprises into local tourism value chains. Tourism

authorities, accommodation establishments, tour operators, and other private tourism actors should facilitate stronger connections with local producers, artisans, transport providers, food suppliers, cultural tourism initiatives, and other community based enterprises. Improved procurement linkages, business networking, promotion, and market access could broaden opportunities for local enterprises to participate in tourism-related economic activities and extend livelihood opportunities beyond individual enterprise owners. Particular attention should be given to reducing barriers faced by small and emerging entrepreneurs and broadening access to entrepreneurial opportunities, including for women and youth, without assuming that the present study independently quantified disparities for each demographic group.

The seasonal nature of tourism should also be considered in enterprise-support strategies. Community entrepreneurs, with appropriate support from tourism institutions, local government, development organizations, and private-sector partners, should consider product diversification, complementary livelihood activities, adaptive business planning, improved market information and promotion, and locally appropriate savings or cooperative arrangements. Such measures may strengthen enterprise and livelihood resilience during periods of lower tourism demand, although their effectiveness was not directly evaluated in the present study.

Tourism Entrepreneurship strategies should further reflect the multidimensional character of Sustainable Tourism. Community based enterprises should be encouraged to adopt environmentally responsible practices and support the responsible use

of natural resources upon which protected area tourism depends. At the socio-cultural level, tourism products and enterprise practices should respect local customs, support cultural heritage and locally grounded tourism experiences, and create opportunities for community participation in tourism development. Entrepreneurial development should therefore be considered alongside economic inclusion, environmental stewardship, and socio-cultural integrity rather than treating enterprise growth alone as evidence of sustainability.

Finally, stronger coordination among tourism and conservation institutions, local government authorities, community organizations, NGOs, private tourism operators, business support actors, and local entrepreneurs should be encouraged. Collaboration should focus on enterprise capacity development, market connections, information sharing, technical support, local procurement opportunities, and coordination between community enterprise development and tourism and conservation initiatives. These recommendations are derived from the financial, capacity, market, seasonal, institutional, and distributional constraints identified in the study and are proposed as context-specific measures that could support more inclusive and sustainable entrepreneurial participation, rather than as interventions whose effectiveness was directly tested by the study.

Suggestions for Future Research

Future research should examine the relationship between Tourism Entrepreneurship and Sustainable Tourism across other protected areas and tourism destinations in Tanzania and Sub-Saharan Africa to establish the applicability of the findings across different institutional, socio-economic, livelihood, and conservation contexts.

Longitudinal or panel studies are also recommended to examine changes over time and provide stronger evidence on the persistence and temporal ordering of these relationships.

Future studies should complement perception-based measures with objective indicators such as enterprise ownership, tourism income, employment, local procurement, visitor expenditure, business survival, and environmental outcomes. Research should also examine differences according to enterprise type, scale, ownership, gender, age, access to resources, and social inclusion to establish how different forms of Tourism Entrepreneurship contribute to economic, environmental, and socio-cultural sustainability.

Further research should examine factors that may mediate or moderate the Tourism Entrepreneurship–Sustainable Tourism relationship, including access to finance, entrepreneurial capacity, market access, seasonality, local value-chain integration, and institutional support. In particular, Government Support should be tested as a specific moderator of the Tourism Entrepreneurship–Sustainable Tourism relationship.

Finally, future research should examine the role of digital tourism platforms, online marketing, digital payments, and market information in improving the competitiveness and resilience of community-based tourism enterprises, while also assessing inequalities arising from differences in digital access and capabilities.

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