



Sustainable Development Initiatives and Performance of Community-Based Tourism Projects in Musanze District, Rwanda

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Abstract: The study aimed to explore the role of sustainable development initiatives in the performance of community-based tourism projects in Musanze District, Rwanda, with a specific focus on the Slow Hike Africa initiative. The study was grounded on two theories, Sustainable Livelihoods Framework (SLF) and the Triple Bottom Line (TBL) Theory. The study employed a descriptive and correlational research design. The target population consisted of 268 individuals directly involved in the Slow Hike Africa CBT project in Musanze District, including local community members, local businesses, government representatives, and project managers. A sample size of 159 was selected using Krejcie and Morgan's Sample Size Table. The findings revealed that community-based tourism projects performed above average (Mean = 4.50), indicating strong project success across sustainability dimensions. Economic sustainability initiatives demonstrated a significant positive correlation ($R=0.725$, $p=0.000 < 0.05$) and explained 52.6% of the variance in project performance ($\beta=0.690$, $p=0.000<0.05$). Social sustainability initiatives showed the strongest effect, with a correlation coefficient ($R=0.748$, $p=0.000<0.05$) and explaining 56.0% of performance variation ($\beta=0.715$, $p=0.000<0.05$). Environmental sustainability initiatives also had a strong positive association ($R=0.712$, $p=0.000<0.05$) and explained 50.7% of performance outcomes ($\beta=0.675$, $p<0.05$). When all three dimensions were combined, they jointly explained 78.0% of the variance in CBT project performance ($R^2 = 0.780$, $p = 0.000$), with social sustainability initiatives having the greatest influence ($\beta = 0.338$). The study concluded that the integrated application of economic, social, and environmental sustainability initiatives significantly enhances the long-term success and resilience of community-based tourism projects.

Keywords: Sustainable Development Initiatives, Economic Sustainability, Social Sustainability, Environmental Sustainability, Community-Based Tourism, Project Performance

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1. Introduction

Sustainable development in tourism has become a global priority as countries strive to balance economic growth, environmental preservation, and social well-being (UNWTO, 2019). One of the most effective strategies for achieving sustainable tourism is community-based

tourism (CBT), which allows local populations to participate directly in and benefit from tourism activities. CBT emphasizes local ownership and management, ensuring that communities share in economic gains while protecting their cultural heritage and natural environment (Scheyvens, 2002; Tosun, 2020). This approach aligns with the United Nations Sustainable Development Goals (SDGs), particularly those related to poverty reduction,

sustainable communities, and environmental conservation.

Community-based tourism plays a critical role in linking conservation efforts with socio-economic development. In South Africa, community-driven tourism initiatives in areas like the Kruger National Park have empowered local populations to manage tourism operations, generating employment and funding for community projects (Kirsten et al., 2018). Similarly, in Kenya, the Maasai Mara model has enabled the Maasai people to participate in managing their natural resources while preserving cultural traditions and protecting biodiversity (Owino & Long, 2019). These initiatives show that CBT can effectively address issues of poverty and conservation when communities are actively involved in tourism governance. Nevertheless, challenges remain. Studies highlight that the uneven distribution of tourism benefits often marginalizes vulnerable groups (Gibson & Brown, 2020). The rapid expansion of tourism can also lead to resource depletion, environmental degradation, and the commodification of local cultures (Mbaiwa, 2020). The tension between cultural preservation and commercialization continues to threaten the authenticity of traditional practices. These challenges underline the need for policy frameworks and management strategies that ensure equitable benefit distribution, environmental protection, and genuine community participation across Africa's tourism sector.

In Rwanda has emerged as a model of sustainable and community-based tourism. The country's flagship attraction, the Volcanoes National Park, home to endangered mountain gorillas, demonstrates how tourism can be harnessed to promote both conservation and community welfare. Revenue from gorilla trekking is reinvested into local communities through initiatives such as cultural performances, guiding, handicraft enterprises, and homestays (Niyomugabo, 2018). This strategy aligns with Rwanda's national development goals of poverty reduction, environmental protection, and inclusive growth under Vision 2020 and Vision 2050. In the Musanze District, CBT projects such as eco-lodges, cultural villages, and local cooperatives have transformed community livelihoods by providing income and fostering environmental stewardship (Niyomugabo, 2021). Local participation in tourism decision-making has enhanced residents' sense of ownership, cultural pride, and commitment to conservation (Kagorora & Rugamba, 2020). However, the benefits of these projects are not always evenly distributed. Wealthier or more connected households tend to gain more economic advantages than poorer ones (Munyegera & Matsumoto, 2019). Environmental management challenges such as waste disposal, resource overuse, and the loss of cultural authenticity due to commercialization remain concerns (Sarker & Rahman, 2020). Moreover, Rwanda's reliance on tourism as a primary source of local economic development makes communities vulnerable to external shocks such as

seasonal fluctuations, global economic downturns, or pandemics (Mwaura, 2019). These vulnerabilities underscore the importance of diversifying income sources and integrating economic, environmental, social, and cultural sustainability in tourism management.

Sustainable development initiatives are essential for the success and long-term viability of community-based tourism projects. In regions like Rwanda, where tourism is a key driver of economic and social development, there are significant opportunities for local communities to improve their livelihoods through tourism-related activities. However, the performance of these projects often faces challenges due to the inadequate integration of sustainability principles, which can hinder their competitiveness and long-term viability. In Musanze District, a region rich in natural resources and tourism potential, community-based tourism projects encounter difficulties related to economic, social, cultural, and environmental sustainability. The over-reliance on tourism for economic development can lead to negative environmental impacts, such as habitat degradation, and cultural erosion, where traditional practices are undermined by increased tourist influence (Mwaura, 2019). Furthermore, challenges in managing resources sustainably, such as water usage and waste disposal, remain a critical issue in maintaining the ecological balance (Sarker & Rahman, 2020). These challenges impact the effectiveness of tourism initiatives and reduce their potential to create sustainable benefits for the local population, underscoring the need for integrated and well-managed sustainable tourism practices.

Despite the government's efforts to promote sustainable tourism and improve the livelihoods of local communities, there is limited understanding of how the different sustainability dimensions (economic, social, cultural, and environmental) contribute to the overall performance of community-based tourism projects. Without effective sustainability strategies, tourism projects in Musanze may fail to meet their intended goals, such as improving local income levels, preserving cultural heritage, and protecting the environment (Munyegera & Matsumoto, 2019).

1.1 General Objective

The general objective of this study was to analyze the relationship of sustainable development initiatives on performance of community-based tourism projects in Musanze District, Rwanda.

1.2 Specific Objectives

The following specific objectives guided the study:

1. To assess the relationship of Economic sustainability initiative and performance of

- community-based tourism project in Musanze District, Rwanda
2. To assess the relationship of social sustainability initiative and performance of community-based tourism project in Musanze District, Rwanda
3. To assess the relationship of Environmental sustainability initiative and performance of community-based tourism project in Musanze District, Rwanda

2. Literature Review

2.1 Theoretical Review

To analyze the sustainable development initiatives and performance of community-based tourism projects, it is essential to ground the study on established theories that encompass economic, social, cultural, and environmental sustainability. Below are three relevant theories that align with the objectives of this study:

2.1.1 Sustainable Livelihoods Framework (SLF)

The Sustainable Livelihoods Framework (SLF), introduced by the Department for International Development (DFID, 1999), is particularly relevant to community-based tourism. This framework focuses on how local communities utilize their assets (natural, physical, social, human, and financial capital) to sustain their livelihoods and adapt to challenges. It emphasizes the importance of understanding the various capitals involved in sustaining communities, making it applicable to tourism development, especially in rural areas. In the context of community-based tourism (CBT) in Musanze District, Rwanda, the SLF can be used to assess how tourism initiatives contribute to the economic, social, and environmental sustainability of local communities. Economic sustainability initiatives might focus on creating new revenue streams for local people through tourism-related businesses (such as hospitality, guiding, and crafts). Social sustainability initiatives are seen through improved community well-being, enhanced social capital, and inclusion of marginalized groups, while environmental sustainability is addressed through the management and protection of natural resources vital to tourism, such as wildlife and landscapes (Binns, 2017). The SLF encourages a holistic approach to assessing the interconnections between these various aspects of sustainability, ensuring that no one dimension is neglected.

2.1.2 Triple Bottom Line (TBL) Theory

The Triple Bottom Line (TBL) theory, coined by Elkington (1997), focuses on measuring sustainability through three pillars: profit (economic), people (social), and planet (environment). This theory asserts that businesses and initiatives should be evaluated not only

by financial performance but also by their impact on society and the environment. TBL encourages a comprehensive evaluation of sustainability, making it highly relevant to community-based tourism projects that strive to balance economic growth, social inclusion, and environmental preservation.

In the context of community-based tourism in Musanze District, the TBL framework helps assess how tourism projects contribute to the local economy (profit), improve social outcomes for the community (people), and preserve natural environments (planet). For instance, economic sustainability in CBT projects might involve generating income and reducing poverty by promoting local businesses. Social sustainability initiatives may include community development programs, capacity building, and equitable participation in tourism activities. Environmental sustainability can be seen through initiatives aimed at conserving the local ecosystem, minimizing waste, and protecting natural resources from overexploitation (James & Riesenberger, 2020). The TBL theory thus provides a balanced view of how CBT projects can perform sustainably across these three dimensions.

2.2 Empirical Review

The empirical review examined economic, social and environmental sustainability initiatives and the performance of community-based tourism projects.

2.2.1 Economic Sustainability Initiatives and Project Performance

Kothari and Shukla (2018) conducted research in rural India to assess how community-based tourism (CBT) initiatives contribute to economic sustainability. The study aimed to understand how local communities can benefit economically from tourism while maintaining their cultural and environmental integrity. Using a mixed-methods approach, combining quantitative data and qualitative interviews, the researchers found that CBT projects had a positive impact on local economic development by diversifying income sources. Key outcomes included employment generation in areas like guiding, hospitality, and handicraft production. The study emphasized that involving local communities directly in managing tourism ensures a more equitable distribution of benefits. However, it also pointed out the challenges posed by the seasonal nature of tourism and the need for continuous skill development to maintain quality services.

Munyegera and Matsumoto (2019) explored the economic sustainability of community-based tourism in the Musanze District of Rwanda, particularly in relation to Volcanoes National Park. Their mixed-methods study revealed that CBT significantly improved local livelihoods, increasing employment, household incomes, and promoting local businesses through initiatives like

homestays, guided tours, and handicraft sales. While the economic benefits were considerable, the researchers noted that the distribution of these benefits was often uneven, with wealthier households benefiting more from tourism. They also highlighted the importance of local involvement in managing tourism resources and revenues for long-term sustainability. Munyegera and Matsumoto concluded that capacity-building and investment in local communities are essential for fostering equitable and sustainable economic outcomes in the CBT sector.

2.2.2 Social Sustainability Initiatives and Project Performance

Cole (2017) investigated the social sustainability impacts of community-based tourism in Nepal, with a focus on the social capital generated by tourism. The purpose of the study was to understand how tourism could foster social cohesion and empower local communities. Using a qualitative research methodology, including interviews and community observations, the study found that CBT contributed positively to social capital by improving relationships between locals and tourists, as well as between different groups within the community. Tourism revenue was reinvested into local infrastructure, enhancing access to education and healthcare. The study also highlighted that tourism helped improve gender equality and social inclusion, particularly by involving women and marginalized groups in decision-making processes. However, Cole (2017) noted that the benefits of CBT were not always equally distributed, and without proper management, tourism could exacerbate divisions within the community.

Niyonsenga and Muvunyi (2020) examined the social sustainability of community-based tourism in Rwanda, particularly in the Nyungwe Forest region. The study's objective was to assess how local communities benefited socially from their involvement in CBT initiatives. Using a case study approach with interviews and community surveys, the researchers found that CBT contributed significantly to improving social sustainability by fostering community collaboration, boosting community pride, and enhancing social capital. One notable example was the creation of women's groups engaged in handicraft production, which empowered women and enhanced gender equality. The study also highlighted the reinvestment of tourism revenue into local education and infrastructure, improving social services. The study concluded that social sustainability would be better achieved if local communities had direct control over tourism planning and decision-making processes.

2.2.3 Environmental Sustainability Initiatives and Project Performance

Simpson and Hu (2020) conducted research on the environmental sustainability of community-based tourism in the Philippines, with a focus on eco-tourism

initiatives in protected areas. The aim of their study was to examine how local communities could integrate environmental conservation with tourism operations. Using a mixed-methods approach, including interviews with community members and tourism operators, they found that when communities were directly involved in tourism, they were more likely to adopt practices that preserved local ecosystems. Tourism revenue was used to fund conservation efforts such as reforestation, wildlife protection, and waste management programs. However, the researchers cautioned that over-tourism could degrade the natural environment and negatively impact long-term sustainability. Simpson and Hu (2020) recommended that CBT projects invest in capacity-building programs to educate local residents and tourists about sustainable practices.

Rugema and Kamali (2018) examined the environmental sustainability of community-based tourism in Rwanda's Gishwati-Mukura National Park, focusing on the role of local communities in environmental conservation. The purpose of the study was to evaluate how CBT projects in the area contributed to biodiversity protection and ecosystem preservation. The researchers used a mixed-methods approach, including interviews with community members and tourism operators, as well as observations of eco-tourism activities. The study found that CBT projects helped raise environmental awareness and involved locals in activities such as guided nature walks, bird watching, and educational programs that promoted conservation. Revenues generated from tourism were reinvested into conservation efforts like reforestation and wildlife protection. However, the researchers cautioned that over-tourism in ecologically sensitive areas posed a threat to long-term environmental sustainability. Rugema and Kamali (2018) recommended that CBT projects implement stricter regulations, such as limiting tourist numbers and promoting low-impact tourism practices. The gap for the current study could focus on evaluating how such regulations are enforced and their effectiveness in sustaining both the environment and local communities.

3. Methodology

3.1 Research Design

The use of a correlational research design was justified as it helped uncover important patterns and trends that explain how sustainable development initiatives influence the success and sustainability of tourism projects. The design aligned with the study's objective of identifying relationships between key variables, providing the necessary foundation for evidence-based recommendations.

3.2 Study Population

The total population size was 268 individuals, which was used as the basis for the sampling process. The inclusion of various stakeholders allowed for a holistic view of the sustainable development initiatives and their effects on the tourism project's performance. The population was categorized into four main groups: local community members, local businesses and tourism operators, government representatives, and project managers/leaders, to ensure that diverse perspectives were captured.

3.3 Sampling Design

The sample size was determined using Krejcie and Morgan's Sample Size Table, which is widely used in social science research to determine sample sizes for a given population. The table provides a direct lookup for sample sizes based on the population size and desired confidence level, ensuring the sample is representative and statistically valid. For a population of 268, the required sample size, according to Krejcie and Morgan's table, was 159 individuals. However, to account for potential non-responses and to ensure adequate representation, the researcher selected 159 respondents. This sample size adequately reflected the views and experiences of the broader population involved in the Slow Hike Africa project, ensuring that the sample was proportionate and reflective of the target population's experiences and providing a robust basis for testing the research hypotheses.

To ensure that the sample was representative of the entire population, a stratified random sampling technique was employed. This technique divided the population into four distinct strata: local community members, local businesses and tourism operators, government representatives, and project managers/leaders. A random sample was then selected from each group to ensure proportional representation of each category. This method was advantageous because it ensured that all subgroups within the population were represented in the sample, enhancing the generalizability of the findings. It also increased the precision of the estimates by reducing sampling error within each subgroup.

3.4 Data Collection Instruments

Secondary data were collected from a range of documentary sources, including project reports, monitoring and evaluation records, government publications, national tourism policy documents, academic research papers, and strategic plans related to Slow Hike Africa and community-based tourism in Musanze District and Rwanda more broadly. These documents were accessed through institutional repositories, the Rwanda Development Board, the Rwanda Tourism Board, and online academic databases.

3.5 Pilot Study, Validity and Reliability

A pilot study was conducted on 10% of the sample size to test the effectiveness and clarity of the research instruments. This study involved a small sample of 16 respondents, chosen from the same population but not included in the final study sample. Based on feedback from the pilot participants, several adjustments were made to improve the clarity and reliability of the instruments. For instance, some questions were rephrased for better comprehension, and the sequence of questions was reorganized to improve the logical flow. Reliability testing was also conducted during the pilot study using Cronbach's alpha to assess the internal consistency of the questionnaire items. The pilot study results showed Cronbach's alpha values ranging from 0.78 to 0.86 for different sections of the questionnaire, all exceeding the acceptable threshold of 0.7, indicating good internal consistency. The pilot study also provided an opportunity to test the logistics of the data collection process, ensuring that it was feasible within the available time frame and resources.

To ensure validity, the study emphasized content validity, which ensures that the research instruments accurately measure the concepts they are intended to measure. To achieve this, three experts in the fields of tourism management and sustainability development were consulted to review the research instruments and suggest necessary revisions. The experts assessed whether the questionnaire items adequately covered the conceptual domains of the study and whether they were appropriate for the target population. Based on their feedback, several modifications were made, including the addition of questions on profit reinvestment and environmental awareness, and the refinement of language to suit the literacy levels of community members. The Content Validity Index (CVI) was calculated, yielding a value of 0.82, which exceeded the recommended threshold of 0.7, confirming good content validity. Additionally, the instruments were pretested on the pilot sample of 16 respondents from the target population to ensure that they captured the relevant data and provided meaningful insights into the research questions. Construct validity was also checked to ensure that the questions aligned with the theoretical framework of the study, confirming that they effectively measured the intended constructs of economic, social, and environmental sustainability.

Reliability was assessed using Cronbach's alpha coefficient to measure the internal consistency of the questionnaire items. The reliability analysis was conducted on data collected during the pilot study and was 0.84 this value exceeded the acceptable threshold of 0.7, indicating that the questionnaire items were reliable and consistently measured the same constructs. These high Cronbach's alpha value confirmed that the questionnaire items were dependable, ensuring the

reliability of the study's results and enhancing confidence in the data collection instruments.

3.6 Data Analysis

To test the hypotheses, inferential statistical methods were employed. Pearson correlation analysis was used to determine the strength and direction of relationships between the independent variables (economic, social, and environmental sustainability initiatives) and the dependent variable (performance of community-based tourism projects). Simple linear regression analysis was conducted on individual independent variables represented by hypotheses H_{01} , H_{02} , and H_{03} , while multiple regression analysis was performed on the combined independent variables against the dependent variable.

The study applied the multiple regression model $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$, where Y represented performance of community-based tourism projects and X_1 , X_2 and X_3 represented economic, social and environmental sustainability initiatives, respectively.

3.7 Ethical Considerations

Ethical standards were strictly adhered to throughout the research process. Informed consent was obtained from all participants, ensuring that they fully understood the purpose of the study, the nature of their participation, and their right to withdraw at any time. Confidentiality was maintained, and all data were stored securely to protect participants' privacy. Participants were assured that their responses would only be used for academic purposes. Ethical approval for the study was sought from the relevant institutional review board to ensure that the research met all ethical guidelines.

4. Results and Discussions

This section presents the questionnaire response rate, correlation results for the three sustainability dimensions and the combined regression results.

4.1 Response Rate

Out of the sampled 159 participants, 159 returned duly filled and complete questionnaires which represents 100% return rate as presented in Table 1.

Table 1: Questionnaire Response Rate

Sample size	Questionnaires returned	Return rate (%)
159	159	100%

The achieved return rate of 100% was considered appropriate for the study and indicative of the population characteristics. Mugenda & Mugenda (2003) assert that a response rate of no less than 70% is adequate for the analysis of social science research. The elevated response rate was achieved due to the researcher's follow-ups with the chosen respondents and the provision of sufficient time for completing the surveys.

4.2 Inferential Statistics

Pearson correlation analysis examined associations between each sustainability initiative and project performance, while regression analysis assessed their combined explanatory contribution.

Table 2: Relationship between Economic Sustainability Initiatives and Performance of Community-Based Tourism Projects

			Economic Initiatives	Sustainability	Performance of Community-Based Tourism Projects
Economic Initiatives	Sustainability	Pearson Correlation	1		.725**
		Sig. (2-tailed)			.000
		N	159		159
Performance of Community-Based Tourism Projects		Pearson Correlation	.725**		1
		Sig. (2-tailed)	.000		
		N	159		159

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

The correlation results in Table 2 indicate a strong positive correlation ($R=0.725$) between Economic Sustainability Initiatives and the Performance of Community-Based Tourism Projects, which is statistically significant ($p=0.000<0.05$). This finding suggests that Economic Sustainability Initiatives are strongly and positively associated with the successful performance of community-based tourism projects. As

efforts to enhance economic initiatives such as employment generation, income creation, profit reinvestment, and financial management increase, the implementation of community-based tourism projects also improves significantly. The positive correlation signifies those economic initiatives have a substantial influence on project outcomes.

Table 3: Relationship between Social Sustainability Initiatives and Performance of Community-Based Tourism Projects

		Social Sustainability Initiatives		Performance of Community-Based Tourism Projects
Social Sustainability Initiatives	Pearson Correlation	1		.748**
	Sig. (2-tailed)			.000
	N	159		159
Performance of Community-Based Tourism Projects	Pearson Correlation	.748**		1
	Sig. (2-tailed)	.000		
	N	159		159

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

The correlation results in Table 3 indicate a strong positive correlation ($R=0.748$) between Social Sustainability Initiatives and the Performance of Community-Based Tourism Projects, which is statistically significant ($p=0.000<0.05$). This finding suggests that Social Sustainability Initiatives are strongly and positively associated with the successful performance of community-based tourism projects. As

efforts to enhance social initiatives such as community empowerment, social inclusion, skills training, and capacity building increase, the performance of community-based tourism projects also improves significantly. The positive correlation signifies that, social initiatives have a substantial and even stronger influence on project outcomes compared to economic initiatives.

Table 4: Relationship between Environmental Sustainability Initiatives and Performance of Community-Based Tourism Projects

		Environmental Sustainability Initiatives		Performance of Community-Based Tourism Projects
Environmental Sustainability Initiatives	Pearson Correlation	1		.712**
	Sig. (2-tailed)			.000
	N	159		159
Performance of Community-Based Tourism Projects	Pearson Correlation	.712**		1
	Sig. (2-tailed)	.000		
	N	159		159

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

The correlation results in Table 4 indicate a strong positive correlation ($R=0.712$) between Environmental Sustainability Initiatives and the Performance of Community-Based Tourism Projects, which is statistically significant ($p=0.000<0.05$). This finding suggests that Environmental Sustainability Initiatives are strongly and positively associated with the successful performance of community-based tourism projects. As efforts to enhance environmental initiatives such as waste management, conservation efforts, eco-friendly

practices, and environmental awareness increase, the performance of community-based tourism projects also improves significantly. The positive correlation signifies those environmental initiatives have a substantial influence on project outcomes.

4.2.4 Combined Influence of Sustainability Initiatives

During the implementation of community-based tourism projects, the components explored in this study do not

work in isolation, but rather as part of an integrated system. As a result, their contribution to performance cannot be singular, but rather combined. Thus, the researcher analyzed, through regression, the combined effect of Economic Sustainability Initiatives, Social Sustainability Initiatives, and Environmental Sustainability Initiatives on Performance of Community-

Based Tourism Projects. This was achieved through multiple regression with Economic Sustainability Initiatives, Social Sustainability Initiatives, and Environmental Sustainability Initiatives as the predictor variables and Performance of Community-Based Tourism Projects as the outcome variable. The regression output is presented in Table 5.

Table 5: Influence of Combined Sustainability Initiatives on Performance of Community-Based Tourism Projects

Model	R	R Square	Adjusted R Square		Std. Error of the Estimate	
Summary	.883 ^a	.780	.775		.091	
Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA	Regression	93.11	3	31.04	186.23	.000 ^b
	Residual	26.24	155	.168		
	Total	119.35	158			
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients	(Constant)	0.982	.054		18.19	.000
	Economic Sustainability Initiatives	0.285	.048	.298	5.94	.000
	Social Sustainability Initiatives	0.338	.046	.354	7.35	.000
	Environmental Sustainability Initiatives	0.295	.049	.310	6.02	.000

a. Dependent Variable: Performance of Community-Based Tourism Projects
b. Predictors: (Constant), Economic Sustainability Initiatives, Social Sustainability Initiatives, Environmental Sustainability Initiatives

From the output in Table 5, the model summary reveals an R² value =0.780 with p=0.000<0.05. This indicates that the combined sustainability initiatives (Economic Sustainability Initiatives, Social Sustainability Initiatives, and Environmental Sustainability Initiatives) account for 78.0% of the variation in the performance of community-based tourism projects. This demonstrates a strong explanatory power of the independent variables in predicting the dependent variable.

The model is found to be a good fit for the data and variables, as indicated by F (3, 155) =186.23 (p=0.000<0.05). The coefficients analysis reveals that the constant term has a coefficient of $\beta=0.982$ (p=0.000<0.05), which is statistically significant. This represents the expected level of tourism project performance when all sustainability initiatives are excluded.

Economic Sustainability Initiatives have a coefficient of $\beta=0.285$ (p=0.000<0.05), indicating that a unit increase in economic sustainability initiatives contributes to a 0.285-unit improvement in project performance. Social

Sustainability Initiatives show a coefficient of $\beta=0.338$ (p=0.000<0.05), suggesting that every unit increase in social sustainability initiatives leads to a 0.338-unit improvement in performance. Environmental Sustainability Initiatives demonstrate a coefficient of $\beta=0.295$ (p=0.000<0.05), showing that a unit increase in environmental sustainability initiatives results in a 0.295-unit improvement in project performance.

All variables are statistically significant, indicating their critical roles in enhancing the performance of community-based tourism projects. Notably, Social Sustainability Initiatives have the highest impact ($\beta=0.338$), followed by Environmental Sustainability Initiatives ($\beta = 0.295$) and Economic Sustainability Initiatives ($\beta=0.285$).

Linearly, the variables can be modeled using the equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where: β_0 is the coefficient of the constant term, β_1 , β_2 , and β_3 are the coefficients of the predictors, and X_1 , X_2 ,

and X_3 are the predictors (Economic Sustainability Initiatives, Social Sustainability Initiatives, Environmental Sustainability Initiatives) while ϵ is the error term. Replacing the coefficients, the equation becomes:

$$Y = 0.982 + 0.285X_1 + 0.338X_2 + 0.295X_3$$

The analysis reveals that all three sustainability initiatives significantly and positively impact the performance of community-based tourism projects. The high R^2 value (0.780) shows the collective importance of these practices in explaining variations in project performance. Simultaneous application of all practices results in better outcomes than implementing them individually. This finding demonstrates the critical role of integrated sustainability practices in achieving successful community-based tourism project performance.

4.3 Discussion of Research Findings

The significant positive association between economic sustainability initiatives and project performance ($r = 0.725$, $p < 0.05$) is consistent with Kothari and Shukla (2018), who found that community-based tourism projects contributed to local economic development by diversifying income sources and generating employment in guiding, hospitality and handicraft production. In Musanze District, Munyegera and Matsumoto (2019) also reported improvements in employment, household incomes and local businesses through homestays, guided tours and handicraft sales. Their finding that tourism benefits were often distributed unevenly highlights an important qualification: income generation alone does not guarantee equitable benefits. The Sustainable Livelihoods Framework connects these findings to the use of local financial, human and physical assets to sustain community livelihoods.

Social sustainability initiatives recorded the strongest correlation with project performance ($r = 0.748$, $p < 0.05$) among the three dimensions. Cole (2017) found that community-based tourism strengthened social capital by improving relationships within communities and supporting gender equality and social inclusion. Similarly, Niyonsenga and Muvunyi (2020) reported that tourism initiatives in Rwanda fostered community collaboration, community pride and women's participation, while emphasizing direct involvement in tourism planning and decision-making. These findings support the importance of community empowerment, skills training and capacity building in the current study. Under the Triple Bottom Line Theory, the social dimension represents the contribution of tourism to people and community well-being, not only to financial returns.

The positive relationship between environmental sustainability initiatives and project performance ($r =$

0.712, $p < 0.05$) agrees with Simpson and Hu (2020), who found that community participation in tourism encouraged practices that preserved local ecosystems and supported reforestation, wildlife protection and waste management. Rugema and Kamali (2018) likewise observed that community-based tourism around Gishwati-Mukura National Park increased environmental awareness and supported conservation activities. Their caution that excessive tourism can threaten sensitive ecosystems is relevant to the sustainability of tourism activities in Musanze District. The result is compatible with the environmental dimension of the Triple Bottom Line Theory, which considers the protection of natural resources alongside economic and social benefits.

The combined regression model explained 78.0% of the variation in community-based tourism project performance ($R^2 = 0.780$, $p < 0.05$). Social sustainability initiatives made the largest adjusted contribution ($B = 0.338$), followed by environmental sustainability initiatives ($B = 0.295$) and economic sustainability initiatives ($B = 0.285$). This pattern is consistent with the Triple Bottom Line Theory of Elkington (1997), which evaluates sustainability through people, planet and profit rather than financial results alone. James and Riesenberger (2020) also presented these three dimensions as a balanced basis for assessing community-based tourism. The findings therefore favour an integrated approach in which community participation, environmental conservation and local economic opportunities are pursued together. The remaining 22.0% of variation was associated with factors not included in the regression model.

5. Conclusions and Recommendations

5.1 Conclusions

Regarding performance of community-based tourism projects, the study determined that community-based tourism projects have attained notable success in advancing sustainable tourism, fostering community development, strengthening destination image, and securing stakeholder satisfaction. The Slow Hike Africa project exemplifies how successful integration of sustainability principles can generate positive outcomes across multiple dimensions, including enhanced infrastructure, improved quality of life, and strengthened tourism project sustainability. Regarding economic sustainability initiatives, the study determined that economic sustainability initiatives constitute a foundational element for successful community-based tourism project performance. Job creation, income generation, revenue contributions to local enterprises, and sound financial management substantially improve project results. The strategic significance of profit reinvestment in local community development and

infrastructure proves essential for enhancing long-term sustainability and preserving stakeholder commitment.

Regarding social sustainability initiatives, the study determined that social sustainability initiatives serve as the most crucial factor in advancing community-based tourism project performance across all sustainability dimensions. Skills development, capacity enhancement, community empowerment in decision-making, and social inclusion successfully provides stakeholders with essential tools and confidence to participate meaningfully in tourism activities. The results emphasize the vital importance of continuous investment in human capital development and participatory governance to attain positive project outcomes and reinforce social cohesion. Regarding environmental sustainability initiatives, the study determined that environmental sustainability initiatives represent critical drivers of community-based tourism project success. Waste management, conservation initiatives, eco-friendly practices, and community engagement in environmental protection substantially contribute to project performance. The maintenance of natural beauty through environmental initiatives directly improves tourism experiences and destination appeal, ensuring sustained project viability and sustainability.

Regarding integrated sustainability approach, the study determined that concurrent implementation of economic, social, and environmental sustainability initiatives generates superior outcomes compared to individual implementation. The three sustainability dimensions function synergistically to enhance project performance, with social sustainability exerting the strongest individual influence. This highlights the necessity of embracing a comprehensive and balanced approach to community-based tourism development that addresses all three sustainability pillars simultaneously.

5.2 Recommendations

Recommendations were directed towards project planners, local government authorities, tourism operators, and institutions supporting community-based tourism projects.

1. Project planners and tourism stakeholders should emphasize integrated sustainability frameworks that concurrently address economic, social, and environmental dimensions.
2. Local government authorities and tourism development agencies should make substantial investments in social sustainability initiatives, especially skills development, capacity enhancement, and participatory governance mechanisms.
3. Tourism project managers should establish robust economic sustainability mechanisms encompassing transparent revenue distribution systems, profit

reinvestment structures, and support for local business connections.

4. Community-based tourism operators should develop and sustain robust stakeholder engagement frameworks that guarantee meaningful participation of community members, tourists, government representatives, and project personnel throughout all phases of project planning, implementation, and evaluation.

5. Policy makers and funding agencies should create supportive policy frameworks and allocate sufficient financial resources to advance integrated sustainability initiatives in community-based tourism projects.

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