

Livelihood strategies for achieving sustainable livelihood outcomes among communities near national parks in Uganda: a study of tourism-related and non-tourism-related approaches

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Abstract

Purpose – Tourism development around national parks impacts the way of life for local communities. Anchored in the Sustainable Livelihood Framework, this study aims to investigate which livelihood strategies (tourism-related and non-tourism-related activities) influence sustainable livelihood outcomes (improved well-being), for communities adjacent to national parks in Uganda. Using primary data, this study seeks to provide recommendations for enhancing sustainable livelihood outcomes for these communities and to propose an agenda for future research in this area.

Keywords Livelihood strategies, Tourism-related activities, Non-tourism-related activities, Sustainable livelihood outcome, National park–adjacent communities

Paper type Research paper

1. Introduction

Tourism is undeniably one of the world's largest industries, contributing 9.1% to global gross domestic product (GDP) and accounting for 10% of global employment ([World Travel and Tourism Council, 2023](#)). A substantial body of research highlights tourism's role in emerging economies, emphasizing its environmental (biodiversity conservation, heritage preservation), social (cultural



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exchange, strengthened social ties) and economic (employment, revenue generation) benefits (Butler, 2022; Liu *et al.*, 2022; Hassan *et al.*, 2022). Despite these benefits, concerns have been raised about tourism's effectiveness in poverty alleviation. Scholars argue that tourism can exacerbate social problems, especially marginalization of displaced community members, potentially undermining its ability to improve livelihoods (Aquino *et al.*, 2022). Consequently, recent tourism studies advocate for a comprehensive examination of tourism's impact on sustainable livelihoods (Yu *et al.*, 2020; Jones and Walmsley, 2022). Sustainable livelihood research has been crucial in shifting the focus toward impoverished households as key agents in poverty reduction, rather than concentrating solely on structural analyses such as economic systems and political trends (Natarajan *et al.*, 2022). This perspective is consistent with the Sustainable Development Goal (SDG) agenda, particularly SDG 1, which focuses on eradicating poverty.

The dearth of comprehensive studies on the livelihoods of communities adjacent to national parks, particularly in developing countries such as Uganda, drives the need for this research. In Uganda, tourism represents 3.64% of the national GDP and provides 14.7% of total employment [Uganda Bureau of Statistics (UBOS), 2023]. As in some other African nations, the human populations surrounding national parks in Uganda are extremely impoverished, ranking among the poorest in Africa. Indicators of poverty in these regions include limited land ownership, reliance on unskilled labor, inadequate housing and low income levels. For example, the Batwa, one of the most marginalized indigenous communities living near Bwindi Impenetrable National Park, face severe economic hardship (Ampumuza *et al.*, 2020). Located just 10 km from the park, the Batwa rely on sporadic income from performing for tourists, begging and engaging in manual labor (Banbury *et al.*, 2015). Their average household income is approximately US\$0.26 per day, reflecting extreme poverty (Kokunda *et al.*, 2023). This study aims to provide an integrated analysis of these livelihoods, offering valuable insights into the factors contributing to the fragility of community livelihoods near national parks and proposing multiple solutions. Gaining a deeper understanding of these dynamics will contribute to addressing the challenges faced by park-adjacent communities in Uganda, throughout Africa and beyond.

To comprehend tourism's potential in enhancing the sustainable livelihoods of communities adjacent to national parks, it is essential to examine the relationship between tourism and livelihood concepts. According to Scoones (1998), a livelihood is deemed sustainable if it can withstand and recover from stress and shocks, maintain or enhance its capabilities and assets and provide opportunities for future generations. Scoones (2013) identified five crucial components for livelihood analysis: vulnerability context, livelihood capital, livelihood strategies, institutions and processes and livelihood outcomes. This study will focus specifically on two of these components: sustainable livelihood outcomes and livelihood strategies. First, *sustainable livelihood outcomes* pertain to the benefits individuals derive from their livelihood activities. These benefits include increased income, enhanced well-being, improved food security, reduced vulnerability, sustainable natural resource management and restored human dignity (Jackson, 2021). The emphasis of this study is on improved well-being as a vital outcome, as supported by existing literature. Second, at the core of sustainable livelihood studies is the understanding that households use various livelihood strategies to achieve sustained outcomes. Second, *Livelihood strategies* are defined as "the activities employed to generate the means of household survival" (Shen *et al.*, 2008). Shen *et al.* (2008) further categorized these strategies within a tourism livelihood system into tourism-related activities (TRAs) and non-tourism-related activities (NTRAs). TRAs include direct and indirect tourism-related employment, formal and informal tourism businesses, tourism-related services and farming for tourism purposes. NTRAs encompass labor migration, non-tourism-related employment, non-tourism-purpose farming and other activities such as timber harvesting.

Ongoing debates arise from the conflicting evidence regarding which livelihood strategies most effectively enhance sustainable livelihoods. In many countries, the positive impact of TRAs on livelihoods has been acknowledged (Stone *et al.*, 2022). For instance, Gao and Wu (2017) found that TRAs are a crucial livelihood strategy for residents near tourism sites in China. Similarly, in Tanzania, TRAs have been identified as a primary source of sustenance for local populations (Anderson, 2015). Consequently, Mbaiwa (2018) and Su *et al.* (2019) argued that TRAs enhance livelihoods and may be more effective than the “diversified” livelihood model that includes nontourism sectors. Conversely, other scholars (Su *et al.*, 2016; Lasso and Dahles, 2018) argued that while tourism can generate substantial revenue, it is not the sole income source for many communities. This is especially relevant for communities near national parks, where residents pursue a range of income-generating activities in addition to tourism. These activities encompass gathering, farming, husbandry, basketry and livestock rearing (Mbaiwa, 2017, 2011; Tao and Wall, 2009). For instance, Su *et al.* (2016) found that residents of Yinjiang, located near Mount Sanqingshan National Park, who continued their traditional cropping activities while also participating in tourism-related roles – such as working in hotels, restaurants and providing accommodation – benefit from a broader range of livelihood options. This diversification enhanced their ability to adapt to fluctuations in tourism caused by economic, environmental or political changes, as well as preserving the rural village landscape and traditional social relations within their community. As such, Lasso and Dahles (2018) suggested that TRAs can potentially supplant traditional economic activities (NTRAs), leading to decreased diversity and significant, possibly irreversible changes in livelihoods. They argued that tourism is a fickle industry – a currency crisis, a natural disaster, a terror attack, even a restrictive tourism policy, all can lead to a sudden drop in tourism arrivals and a decline in visitor numbers and destroy tourism-dependent livelihoods. Tourism-dependent communities are at risk of falling into extreme poverty if tourism declines (Dahles and Susilowati, 2015). Recognizing the interplay between tourism and livelihoods highlights the necessity for a nuanced analysis of both TRA and NTRA livelihood strategies. Su *et al.* (2019) emphasized the need for a comprehensive examination of which livelihood activities are critical for supporting natural resource-dependent livelihoods.

Given the notable dearth of research and unresolved debate on which livelihood strategies impact sustainable livelihood outcomes, particularly improved well-being, and the categorization of livelihood strategies into TRAs and NTRAs within tourism ecosystem frameworks, it is crucial to thoroughly investigate how these strategies – whether TRA or NTRA – affect the sustainable livelihood outcomes (improved well-being) of communities adjacent to national parks in Uganda. To address this research gap, this study seeks to evaluate the effects of TRA and NTRA on sustainable livelihood outcomes (improved well-being), for communities living near national parks in Uganda. By addressing this gap, the study aims to provide a more nuanced understanding of how various livelihood strategies influence the well-being of these communities. This investigation is essential for understanding the complex dynamics within the sustainable livelihoods paradigm, especially in developing countries such as Uganda.

The rest of this paper is organized as follows: Section 2 reviews the existing literature and develops hypotheses. Section 3 details the research methodology. Section 4 presents the findings, and Section 5 discusses the results. Section 6 summarizes the conclusions and suggests directions for future research.

2. Literature review and hypothesis development

2.1 Study setting – national park-adjacent communities

Establishing national parks is a vital approach for conserving biodiversity, protecting natural habitats and maintaining species diversity (Ferretti-Gallon *et al.*, 2021). These protected areas provide not only recreational and educational benefits but also play a crucial role in

supporting the sustainable livelihoods of surrounding communities (He and Jiao, 2023). Communities living within a 5-km radius of national parks, known as park-adjacent communities, are key stakeholders in balancing conservation efforts with livelihood needs. In Uganda, the creation of national parks since 1952 led to the displacement of indigenous communities who had depended on these lands for their livelihoods (Solberg, 2022). This displacement resulted in severe poverty and deprivation, impacting access to basic necessities such as food, shelter, education and health care. Displaced communities often turned to subsistence agriculture as their primary means of survival, despite its limited economic returns. This oversight in the establishment of parks in Uganda marginalized local populations by restricting their engagement in economically productive activities. Therefore, effective conservation strategies must not only enforce strict protection measures but also focus on enhancing the well-being and livelihoods of the residents in adjacent communities (Peng *et al.*, 2022).

2.2 Theoretical foundation

To frame our research and provide context for livelihoods, we use the Sustainable Livelihood Framework (SLF) literature. Developed by Scoones (1998), the SLF has become a fundamental tool for analyzing the multifaceted nature of poverty and designing effective interventions. According to Scoones (1998), the SLF is primarily used to examine the livelihoods of individuals and households. The framework includes five critical components: the vulnerability context, livelihood resources (capitals), institutional processes and organizational structures, livelihood strategies and sustainable livelihood outcomes. This study specifically focuses on the livelihoods of communities residing near national parks, with an emphasis on analyzing livelihood strategies and outcomes, while deliberately excluding the other SLF components.

First, the SLF conceptualizes livelihood strategies as the various methods individuals and households use to secure income, stability and well-being and achieve other productive and reproductive objectives. According to Scoones (1998), these strategies can be classified into three broad categories: agricultural intensification or extensification, livelihood diversification and migration. Scoones emphasized that rural livelihood strategies are heavily dependent on the natural resource base, with livelihood portfolios – combinations of different strategies – expected to vary according to the availability and quality of these resources. Moreover, he highlights that individuals often deploy a range of strategies to sustain their livelihoods.

Second, the SLF emphasizes the necessity of establishing clear indicators to assess livelihood outcomes and gauge sustainability. It defines sustainable livelihood outcomes as encompassing increased job opportunities, poverty alleviation, improved well-being and capabilities, livelihood adaptability, reduced vulnerability, enhanced resilience and effective management of natural resources. Chambers (1997) argued that adopting a well-being approach to livelihood analysis enables individuals to identify and prioritize the criteria that are most pertinent to their own circumstances. Kasim (2019) reinforced the importance of well-being, linking it to poverty through both economic and social lenses. White and Ellison (2007) further elaborated on well-being, identifying its dimensions as material, social, psychological and subjective perceptions of livelihoods. We apply this well-being-focused framework to assess the livelihoods of communities situated adjacent to national parks.

Sustainable livelihood literature emphasizes that effectively enhancing well-being often involves pursuing a variety of livelihood strategies. This study adopts a dual approach: evaluating livelihood strategies through the lens of tourism and assessing sustainable livelihood outcomes through a well-being approach. We anticipate that TRAs and NTRAs

are essential for improving the sustainable livelihood outcomes, particularly in terms of enhanced well-being, for communities located adjacent to national parks.

2.3 Livelihood strategies and sustainable livelihood outcome (improved well-being)

This section presents literature review of livelihood strategies and sustainable livelihood outcome (improved well-being) from which the hypotheses are developed.

2.3.1 Sustainable livelihood outcome (improved well-being). Sustainable livelihood outcomes are characterized by the enduring enhancement and preservation of income and food resources, meeting essential human needs and securing future livelihood prospects (Chambers and Conway, 1992). These outcomes underpin sustainable development across environmental, social and economic dimensions. Recent evaluations by Shen *et al.* (2008) examined these outcomes from economic, social and environmental perspectives, ensuring alignment with conditions conducive to sustainable development and reflecting individual achievements and aspirations. This study adopts a people-centered approach, drawing on a well-being framework proposed by Scoones (1998), which emphasizes the importance of criteria such as security, happiness and empowerment, in addition to measurable factors like income, for assessing sustainable livelihood outcomes.

Well-being is defined as possessing the psychological, social and physical resources necessary to navigate various life challenges (La Placa *et al.*, 2013). It plays a crucial role in sustainable livelihoods due to its strong association with poverty and its dual economic and social dimensions, which serve as indicators of poverty (Kasim, 2019). According to Ngong and Kimengsi (2022), well-being includes aspects such as income, consumption, nutrition, health, security and environmental sustainability. Research by Naeem *et al.* (2016) highlights well-being as a critical indicator of sustainable livelihoods, encompassing material, social and psychological dimensions, along with individuals' subjective perceptions. The concept of well-being provides a comprehensive understanding that extends beyond mere economic measures. This study uses a well-being approach to emphasize the perspectives and experiences of communities adjacent to national parks. Hence, sustainable livelihood is conceptualized as improved well-being, assessed through indicators such as self-esteem, security, happiness, stress management and empowerment.

2.3.2 Livelihood strategies. The Department for International Development (DFID, 1999) defines "livelihood strategies" as the array of activities that individuals pursue to achieve their livelihood goals. These strategies involve various actions required to sustain household well-being. Walker *et al.* (2001) described livelihood strategies as a set of activities, choices, values and goals shaped by economic, cultural, social, political and environmental factors, all designed to help individuals or households maintain a high quality of life. Different scholars have proposed various classifications of livelihood strategies. For instance, Scoones (1998) distinguished between agricultural intensification/extensification, livelihood diversification and migration. Ellis (2000) identified two primary categories: activities based on natural resources and those not based on natural resources. In the context of tourism, Shen *et al.* (2008) classify livelihood strategies into TRAs and NTRAs. TRAs include both direct and indirect tourism employment, formal and informal tourism businesses and services and agriculture tailored for tourism purposes. In contrast, NTRAs encompass activities such as labor migration, employment unrelated to tourism, farming not intended for tourism and other activities like timber harvesting. The current study adopts this classification by Shen *et al.* (2008) for its analysis.

Despite the potential benefits of tourism, relying exclusively on TRAs can present significant risks. Scholars argue that over-dependence on tourism may limit households' capacity to diversify their income sources, thereby increasing their vulnerability and

potentially overshadowing traditional livelihoods. Scholars such as [Kheiri and Nasihatkon \(2016\)](#) and [Su et al. \(2016\)](#) have cautioned against viewing tourism as the sole livelihood strategy. They advocate for a balanced approach that incorporates both tourism and traditional activities to mitigate risks associated with economic dependency on a single sector. Communities adjacent to parks frequently engage in a range of activities – including tour guiding, translation, traditional dance performances, barter, fishing, gathering and agriculture – to enhance their livelihood opportunities ([Rongna and Sun, 2020](#)). This multifaceted approach is crucial for communities adjacent to national parks, where both TRAs and NTRAs play essential roles. More specifically, research by [Adiyia et al. \(2017\)](#) indicates that tourism employment in the accommodation sector often provides lower incomes compared to other off-farm activities. Their findings suggest that national park-adjacent communities frequently participate in TRAs to generate additional income, which is then invested in NTRAs to complement earnings from tourism ([Adiyia et al., 2017](#)).

[Su et al. \(2016\)](#) suggested that traditional livelihood strategies, whether farm-based or non-farm-based, may be altered due to changes in resource access driven by tourism; however, [Shen et al. \(2008\)](#) observe that in tourism destinations, individuals often depend on a mix of activities rather than a single income source, engaging in either TRAs or NTRAs. Thus, the livelihood strategies of communities adjacent to national parks could involve both TRAs and NTRAs. We anticipate that communities near national parks use a variety of livelihood strategies given the [Shen et al. \(2008\)](#), argument that tourism does not necessarily replace existing livelihood strategies, implying that both TRAs and NTRAs should be considered. Therefore, this study conceptualizes livelihood strategies as the activities undertaken by members of communities adjacent to national parks to meet their livelihood goals, incorporating both TRAs and NTRAs ([Shen et al., 2008](#)).

2.4 Hypothesis development

2.4.1 Tourism-related activities and sustainable livelihood outcome (improved well-being). Authors [Badola et al. \(2018\)](#) argued that livelihoods reliant on traditional livelihood activities, such as agriculture, face sustainability challenges due to their vulnerability to climate disruptions. In addition, resettled communities often struggle to access agricultural land and natural resources necessary for farming ([Badola et al., 2018](#)). Similarly, [Mbaiwa \(2016\)](#) documented that communities in the Okavango Delta of Botswana – namely, Khwai, Mababe and Sankoyo – transitioned from traditional livelihood activities like hunting, gathering, livestock and crop farming to tourism. This shift led to improved livelihoods, highlighting that engagement in TRAs can successfully enhance livelihoods. Likewise, the advent of tourism in Komodo village on Komodo Island, Indonesia, prompted communities to abandon their traditional NTRA (fishing) in favor of relying entirely on TRAs (souvenir sales), which provide sufficient returns for the local population ([Lasso and Dahles, 2018](#)). Consequently, TRAs, such as traditional basket weaving, have become a sustainable livelihood option for communities dependent on tourism in the Okavango Delta ([Mochankana et al., 2024](#)). In addition, [Chiedza et al. \(2022\)](#) argued that tourism fosters the growth and empowerment of small businesses, thereby creating employment opportunities for local residents and providing them with a source of income. This evidence counters the assertion that tourism alone is insufficient to sustain livelihoods. Therefore, we anticipate that:

- H1.* There is a positive relationship between tourism-related activities and sustainable livelihood outcomes (improved well-being) of national park-adjacent communities in Uganda.

2.4.2 *Non-tourism-related activities and sustainable livelihood outcome (improved well-being)*. Scholars have highlighted that NTRAs when effectively pursued, can significantly enhance sustainable livelihoods. For instance, [Tang et al. \(2013\)](#) demonstrated that NTRAs (agricultural practices) positively impacted farmers' livelihood outcomes in the Chinese Loess Plateau. Similarly, [Nnaeme et al. \(2022\)](#) investigated the livelihood activities and well-being outcomes of cash transfer beneficiaries in Soweto, South Africa. Their study revealed that all participants experienced improvements in well-being as a result of their engagement in NTRAs. Specifically, participants reported increased self-belief, happiness, self-confidence, empowerment and pride – all indicators of enhanced well-being and sustainable livelihoods. These improvements were directly attributed to their involvement in livelihood strategies that did not involve tourism ([Nnaeme et al., 2022](#)). Furthermore, [Gautam and Andersen \(2016\)](#) demonstrated that *n* NTRAs, such as trade and salaried employment, significantly enhance well-being and are considered high-return livelihood activities. In contrast, they found that TRAs like handicraft and tool-making, which showed negative coefficients and moderate impacts on well-being, could be classified as low-return sectors ([Gautam and Andersen, 2016](#)). Given our study context, we anticipate that:

- H2. There is a positive relationship between non-tourism-related activities and sustainable livelihood outcomes (improved well-being) of national park-adjacent communities in Uganda.

3. Methodology

3.1 *Design, population and sample*

The study adopted a positivist research philosophy and a quantitative approach, focusing on members of the Uganda Community Tourism Association (UCOTA) as its target population. UCOTA is a nonprofit organization comprising individuals residing in proximity to major national parks, game reserves and central forest reserves in Uganda. The research concentrated on the western region of Uganda due to its notable presence of national parks, including Bwindi, Queen Elizabeth and Kibale Forest, as well as its significant human settlements. From a total population of 2,121 UCOTA members in the region, a sample of 364 respondents was selected. This sample size is consistent with recommendations from [Hair et al. \(2014\)](#), [Yamane \(1973\)](#) and the Raosoft sample size calculator, which suggest a minimum sample size of 300 for studies with up to seven constructs. First proportionate stratified sampling technique was used to obtain the sampling frame per region and there after simple random sampling used to select respondents from each stratum. Respondents were randomly chosen using unique identification numbers until the sample size of 364 was achieved ([Saunders and Townsend, 2018](#)). [Table 1](#) details the sampling frame determination.

3.2 *Questionnaire and variable measurement*

Data were collected through a questionnaire featuring closed-ended questions, which were developed based on a comprehensive literature review and used a five-point Likert scale – Strongly Disagree (SD), Disagree (D) Neutral (N) Agree (A) Strongly Agree (SA). To address potential issues with respondent literacy, the questionnaires were administered orally and in person by trained research assistants. The study attained a 100% response rate, with all 364 respondents completing and submitting usable questionnaires.

Table 1. Sampling frame

National park	UCOTA members (x)	Sampling frame (x / 2,121 × 364)
Bwindi Impenetrable Forest National Park	523	90
Queen Elizabeth National Park	601	103
Kibale Forest National Park	997	171
<i>Total</i>	<i>2,121</i>	<i>364</i>

Source(s): Researchers' own construction

The independent variable, livelihood strategies, was operationalized using a six-item scale obtained from [Alobo Loison \(2015\)](#). The dependent variable (sustainable livelihood outcomes) is comprised of the construct of *improved well-being*, and in this study, improved well-being was operationalized using a 15-item scale. The 15 items were sourced from [Pontin et al. \(2013\)](#).

3.3 Data analysis

The collected data were entered into SPSS version 23.0 for assembly, sorting, editing, coding and initial analysis. Before analysis, the data underwent a thorough cleaning process using SPSS version 23.0 to ensure accuracy and completeness. Subsequently, IBM AMOS version 27.0 was used for the analysis of the cleaned data, allowing for advanced statistical modeling and interpretation. This multistep approach ensured the integrity of the data and the robustness of the findings.

4. Results

4.1 Demographic characteristics

[Table 2](#) reveals that a majority of the respondents were female, comprising 59.2% of the sample, with 185 females compared to 179 males. Understanding this gender distribution is crucial for analyzing sustainable livelihoods, as it highlights how gender dynamics can influence livelihood outcomes. Women's participation in TRAs is often limited by their traditional gender roles, which include nurturing, caregiving and other family responsibilities, in contrast to their male counterparts ([Eyisi et al., 2021](#)). In addition, the predominant age group of 25–29 years is significant as individuals in this stage are often focused on career development and exploring new opportunities and could pursue TRAs. Most respondents reported earning less than 100,000 Ugandan Shillings (UGX) monthly, equivalent to approximately 3,000 UGX per day (with an exchange rate of US\$1 = 3,700 UGX). The predominant source of income for most respondents was running their own businesses, with 190 individuals identifying this as their primary livelihood activity. In addition, the majority of respondents (150) had attained only basic education, specifically primary schooling. According to the [World Bank \(2022\)](#), extreme poverty is characterized by living on less than \$1.90 per day. The demographic data from this study corroborate anecdotal evidence suggesting that communities living near national parks experience significant poverty, as indicated by their earnings falling below the \$1.90 per day threshold and exhibit limited educational attainment.

Table 2. Demographic profile of respondents

Variable	Category	Frequency	%
Gender	Male	179	49.2
	Female	185	50.8
	<i>Total</i>	<i>364</i>	<i>100</i>
Age	18–24	32	8.8
	25–29	68	18.7
	30–34	66	18.1
	35–39	38	10.4
	40–44	41	11.3
	45–49	37	10.2
	50–54	36	9.9
	55–59	45	12.4
	60 and above	1	0.3
	<i>Total</i>	<i>364</i>	<i>100</i>
Income	Less than 100,000	195	53.6
	100,001–200,000	104	28.6
	200,001–300,000	31	8.5
	300,001–400,000	15	4.1
	400,001 and above	7	1.9
	Prefer not to say	12	3.3
	<i>Total</i>	<i>364</i>	<i>100</i>
Income source	Salary	36	9.9
	Wage	92	25.3
	Income from own business	190	52.2
	Pension	2	0.5
	Cash transfer from relatives	5	1.4
	Donations	16	4.4
	Others	23	6.3
	<i>Total</i>	<i>364</i>	<i>100</i>
Education level	Postgraduate degree	5	1.4
	Bachelor's degree	10	2.7
	Diploma	32	8.8
	A'level/technical education	29	8.0
	O'level	71	19.5
	Primary education	150	41.2
	No formal schooling	67	18.4
	<i>Total</i>	<i>364</i>	<i>100</i>

Source(s): Primary data

4.2 Tourism-related activities undertaken

The analysis revealed that a significant number of respondents engaged in TRAs, primarily farming for tourism purposes. This was followed by tour guiding and selling handcrafts, with weaving basketry and working in restaurants or hotels also being common. In addition, some respondents managed local food stalls, whereas a small number were involved in traditional dance performances. A few operated self-run establishments such as hotels, restaurants, bars or cafés. Some respondents provided interpreting services, and others participated in various activities. Notably, a substantial portion of the respondents, 54.1%, did not participate in any TRAs. This distribution affirms a significant concern highlighted by [English and Ahebwa \(2018\)](#), as the majority of national park-adjacent community members (54.1%) are not engaged in TRAs despite the opportunities that tourism presents. The detailed breakdown of

these activities is summarized in [Table 3](#) reflecting a relatively low level of tourism involvement among the surveyed population.

4.3 Non-tourism-related activities undertaken

The distribution of NTRAs among respondents reveals a strong reliance on subsistence farming, which was the most common activity. This was followed by involvement in wholesale or retail activities and participation in various other NTRAs. A smaller number of respondents were used in the public sector in roles unrelated to tourism, whereas others were engaged in public sector employment within the tourism sector. These findings align with national statistics indicating that 52.8% of households engage in subsistence farming [[Uganda National Household Survey \(UNHS\), 2020](#)]. In Uganda, subsistence farming is closely associated with poverty, as it is the primary livelihood for 53% of the poorest 40% of the population ([Scott *et al.*, 2016](#)). This suggests that the predominance of subsistence farming among respondents reflects a broader trend of poverty within national park-adjacent communities. [Table 4](#) provides a detailed summary of the NTRAs reported by the respondents, highlighting the significant reliance on subsistence farming and other NTRAs as indicators of economic vulnerability.

Table 3. Tourism-related activities undertaken by respondents

Tourism-related activities undertaken	Frequency	%
Work at a restaurant/hotel	18	4.9
Interpreting	5	1.4
Weave basketry	19	5.2
Local food stall operator	9	2.5
Transporting tourists	4	1.1
Selling handcrafts	22	6
Tour guiding	29	8
Traditional dance performance	8	2.2
Self-run hotel/restaurant/bar/cafe	7	1.9
Farming (crops and livestock) for tourism purposes	41	11.3
Others	5	1.4
Do not engage in tourism-related activities	197	54.1
<i>Total</i>	<i>364</i>	<i>100</i>

Source(s): Primary data

Table 4. Non-tourism-related activities undertaken by respondents

Non-tourism-related activities undertaken	Frequency	%
Farming (crops and livestock) for subsistence	319	87.4
Public service employment not for tourism	5	1.4
Private sector employment not for tourism	14	3.8
Wholesale/retail shop	12	3.3
Other non-tourism-related activities	12	3.3
Do not engage in non-tourism-related activities	0	0
<i>Total</i>	<i>364</i>	<i>100</i>

Source(s): Primary data

4.4 Exploratory factor analysis of livelihood strategies and sustainable livelihood outcome – improved well-being

The factor structure of the items measuring livelihood strategies *access* and sustainable livelihood outcome – improved well-being was assessed to establish items to be included in structural equation modeling (SEM) analysis. Table 5 presents the complete list of factor loadings for all items used to assess the independent and dependent variables. All the six items measuring the independent variable livelihood strategies loaded sufficiently. Except for three items SLWB1, SLWB2 and SLWB6, the 12 Items measuring improved well-being loaded as expected (>0.04) and were all included in the model for structural modeling analysis.

Table 5. Factor structure – livelihood strategies and sustainable livelihood outcome – improved well-being

Codes	Items	Factor loadings
<i>Tourism-related activities</i>		
LSTRA1	I earn income from engaging in tourism-related activities in the national park-adjacent community where I live/work	0.767
LSTRA2	Engaging in tourism-related activities in the national park-adjacent community where I live/work is sufficient to cater for my basic needs	0.793
LSTRA2	I find life difficult because of my dependence on tourism-related activities for sustenance in the national park-adjacent community where I live/work	0.795
<i>Non-tourism-related activities</i>		
LSNTA1	I earn income from engaging in non-tourism-related activities in the national park-adjacent community where I live/work	0.752
LSNTA2	Engaging in non-tourism-related activities in the national park-adjacent community where I live/work has positively influenced my ability to afford basic needs	0.932
LSNTA3	Earning income from non-tourism-related activities in the national park-adjacent community where I live/work helps me meet other expenses with ease	0.886
<i>Sustainable livelihood outcome (improved well-being)</i>		
SLWB1	I feel I am in control of my life	0.010
SLWB2	I feel I have a purpose in life	0.069
SLWB3	I feel hopeful about the future	0.555
SLWB4	I feel safe from violence at home	0.676
SLWB5	I feel safe from violence in the park-adjacent community where I live/work	0.652
SLWB6	I have enough money to meet my needs	0.053
SLWB7	I am able to ask someone for help in case I have a problem	0.546
SLWB8	I feel able to live my life the way I want	0.599
SLWB9	I enjoy my personal life	0.790
SLWB10	I am happy with the quality of my sleep	0.732
SLWB11	I am happy with the state of my physical health	0.831
SLWB12	I have no problem with my mental health	0.629
SLWB13	I contribute to and have some control over community life	0.541
SLWB14	I am happy with my friendships and personal relationships	0.817
SLWB15	I am able to ask someone for help in case I have a problem	0.773

Source(s): Primary data

4.5 Confirmatory factor analysis, validity and reliability

Confirmatory factor analysis (CFA) assessed the model's efficacy using SPSS 22.0 and IBM AMOS Statistics 27.0. The study confirmed retention all items of livelihood strategies from the initial exploratory factor analysis except NTA3 and with regards to sustainable livelihood outcomes (specifically improved well-being), items were mostly retained, except for SLWB3, SLWB8, SLWB9 and SLWB13. Goodness-of-fit indices (Chi-square/df < 3, incremental fit index [IFI], Tucker–Lewis index [TLI], comparative fit index [CFI] > 0.90, root mean square error of approximation [RMSEA] < 0.08) indicated satisfactory model fit. Overall, the model demonstrated acceptable fit, aligning with established guidelines for model evaluation.

The measurement model was assessed for internal consistency reliability, convergent validity and discriminant validity. Internal consistency, evaluated through composite reliability (CR), indicated all constructs met the threshold of 0.7 or higher, confirming the reliability of the scales (Nunnally, 1978). Factor loadings for all items exceeded 0.5, demonstrating adequate convergent validity, with average variance extracted (AVE) values ranging from 0.569 to 0.599. Discriminant validity was also confirmed as the square roots of AVE were greater than the inter-correlation values between constructs (Saunders and Townsend, 2018). Overall, the study's constructs exhibited satisfactory reliability and validity as illustrated in Table 6.

4.6 Structural model specification

After formulating the hypothesized model comprising latent variables, adjustments were implemented to refine the model, as outlined in the CFA sections of this chapter. Table 7 displays the definitive manifest variables selected for inclusion in the SEM analysis.

SEM was conducted using IBM AMOS Statistics 27. to assess the structural model for livelihood capital access and sustainable livelihood outcome (improved well-being) of national park–adjacent communities, the goodness-of-fit indices, namely, the chi-square, IFI, TLI, CFI and RMSEA, were assessed. All the reported indices suggested a close fit considering the decision thresholds (Chi-square < 3, IFI, TLI and CFI > 0.90, RMSEA < 0.080) suggested by Hair *et al.* (2014). The structural model results are detailed in Figure 1.

The findings from Table 8 were analyzed to assess the hypothesized relationship using the beta coefficient (β), test statistic (t) and associated p -value:

- H1. which proposed a positive relationship between TRAs and sustainable livelihood outcomes, particularly improved well-being, demonstrated statistical significance ($\beta = 0.306$, $t = 4.749$, $p < 0.01$). Notably, the calculated t -value exceeded the critical threshold of 1.96 and the $p < 0.01$, confirming the support for H1. These results indicate that changes in engaging in TRAs are positively correlated with corresponding improvements in sustainable livelihood outcomes, (improved well-being), among communities living adjacent to national parks in Uganda.
- H2. Table 7 indicates a significant relationship between NTRAs and sustainable livelihood outcomes (improved well-being) ($\beta = 0.255$, $t = 3.759$, $p < 0.01$). Considering the critical value and p -value, the t -value being higher than 1.96 and $p < 0.01$; H2 was accepted. This result suggests that a change in engaging in NTRAs is correlated with the same directional change in sustainable livelihood outcomes (improved well-being) of national park–adjacent communities.

Table 6. CFA, validity and reliability results

Variable	Factor	Item code	Item loadings	Cronbach's alpha	Composite reliability (CR)	Average variance extracted	Discriminant validity \sqrt{AVE}
Livelihood activities	<i>Tourism-related activities</i>	LSTRA1	0.86	0.799	0.867	0.868	0.932
		LSTRA2	0.84				
		LSTRA3	0.74				
Sustainable livelihood outcome	<i>Non-tourism-related activities</i>	LSNTA1	0.75	0.777	0.854	0.569	0.754
		LSNTA2	0.74				
Sustainable livelihood outcome	<i>Improved well-being</i>	SLWB4	0.69	0.777	0.854	0.569	0.754
		SLWB5	0.67				
		SLWB7	0.56				
		SLWB10	0.68				
		SLWB11	0.77				
		SLWB12	0.65				
		SLWB14	0.73				
		SLWB15	0.71				

Source(s): Primary data

Table 7. Manifest variables used in SEM

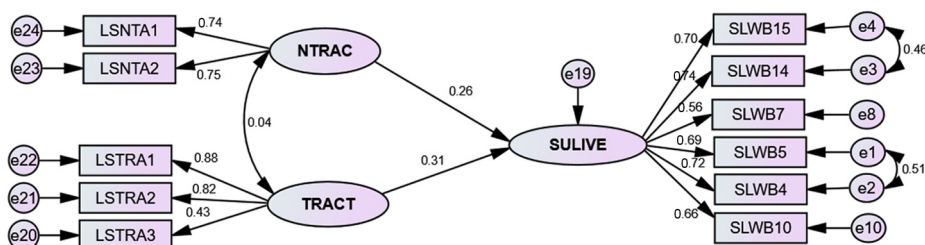
Factor	Code	Measurement item
Tourism-related activities (TRACT)	LSTRA1	I earn income from engaging in tourism-related activities in the national park–adjacent community where I live/work
	LSTRA2	Engaging in tourism-related activities in the national park–adjacent community where I live/work is sufficient to cater for my basic needs
	LSTRA3	I find life difficult because of my dependence on tourism-related activities for sustenance in the national park–adjacent community where I live/work
Non-tourism-related activities (NOTRA)	LSNTA1	I earn income from engaging in non-tourism-related activities in the national park–adjacent community where I live/work
	LSNTA2	Engaging in non-tourism-related activities in the national park–adjacent community where I live/work has positively influenced my ability to afford basic needs
	LSNTA3	Earning income from non-tourism-related activities in the national park–adjacent community where I live/work helps me meet other expenses with ease
Sustainable livelihood outcomes (improved well-being)	SLWB4	I feel able to do the things I choose to do
	SLWB5	I contribute to and have some control over community life
	SLWB7	I am able to ask someone for help in case I have a problem
	SLWB10	I feel safe from violence at home
	SLWB11	I have no problem with my mental health
	SLWB13	I feel able to live my life the way I want
	SLWB12	I have enough money to meet my needs
	SLWB14	I enjoy my personal life
SLWB15	I am happy with the quality of my sleep	

Source(s): Researchers' own construction

5. Discussion of findings

5.1 Tourism-related activities

The significant relationship between engaging in TRAs and sustainable livelihood outcome – improved well-being highlights that communities adjacent to national parks perceive these activities as enhancing their livelihoods. Specifically, national park–adjacent community members view engagement in TRAs – such as interpreting, basketry, transporting tourists and tour guiding – as positively associated with improvements in various livelihood outcomes, including reduced stress, increased happiness and enhanced security. This finding is supported by [Mbaiwa \(2016\)](#), who demonstrated that TRAs led to improvements in the livelihoods of communities adjacent to the Okavango Delta. In addition, the findings align with the assertions of [Mochankana et al. \(2024\)](#), who emphasize that TRAs, such as basketry and other tourism-related activities, offer sustainable livelihood opportunities for park-adjacent communities. Furthermore, the findings acknowledge that tourism facilitates the



Note(s): Chi-square = 78.529; degree of Freedom (DF) = 40; probability (P) = 0.000; incremental fit index (IFI) = 0.975; Tucker–Lewis index (ITL) = 0.965; comparative fit index (CFI) = 0.974; root mean square error of approximation (RMSEA) = 0.052
Source(s): Amos 7.0 output for this study

Figure 1. Structural model for prediction of sustainable livelihood outcomes

creation of small business opportunities for these communities, which, in turn, generates employment and provides a stable source of income for local residents. Such income plays a crucial role in ensuring the sustainability of livelihoods, enabling community members to better support themselves and enhance their overall well-being.

5.2 Non-tourism-related activities

NTRAs entail labor migration, non-tourism-related employment, non-tourism-purpose farming and others (e.g. timber harvesting) undertaken by national park-adjacent community members. Based on the findings of this study, national park-adjacent communities also perceive engaging in NTRAs to improve their well-being. This result coupled with the demographics results indicated that most respondents (87.4%) engaged in subsistence farming indicate that respondents continue to perceive NTRAs as positively contributing to their livelihood sustainability. The results contrasts with Mbaiwa's (2016) assertion that TRAs replace traditional livelihood activities – such as hunting, gathering, livestock rearing and crop farming for park-adjacent community livelihoods to be enhanced. Instead, the current findings align with Shen et al. (2008), who observed that individuals in tourism destinations often depend on a combination of activities rather than relying on a single income source. Consequently, the livelihood strategies of communities near national parks incorporate both TRAs and NTRAs.

In summary, tourism represents a relatively recent addition to the long-established economic activities of UCOTA members and should not be considered in isolation from existing NTRAs. Scholars such as Su et al. (2016) and Lasso and Dahles (2018) argued that

Table 8. Standardized estimates of the model for hypothesis testing

Hypothesis testing	B	SE	β	CR (t)	p	Verdict
SUSLVE ← TRACT	0.282	0.059	0.306	4.749	***	Supported
SUSLVE ← NTRAC	0.217	0.058	0.255	3.759	***	Supported

Note(s): *** $p < 0.01$

Source(s): Amos 7.0 output for this study

while tourism can generate substantial revenue, it is not the sole income source for many communities. In addition, [Tao and Wall \(2009\)](#) emphasized that TRAs can significantly enhance local economies by providing new income opportunities while preserving NTRAs. As highlighted by the sustainable livelihood framework, rural livelihood strategies are heavily dependent on the natural resource base, with livelihood portfolios — combinations of various strategies — expected to vary according to the availability and quality of these resources ([Scoones, 1998](#)). Therefore, communities adjacent to parks should adopt a mix of subsistence and market-oriented strategies, rather than relying solely on singular employment opportunities. It is essential that tourism enhances these established income sources, promoting the diversification of livelihood strategies rather than displacing traditional practices.

6. Summary implications and conclusions

This paper investigates the impact of livelihood strategies on sustainable outcomes for communities living near national parks in Uganda. Through a survey of 364 respondents from UCOTA, we found that both TRAs and NTRAs significantly predict sustainable livelihood outcomes, such as improved well-being. This research contributes to the sustainable livelihoods framework by offering a nuanced understanding of how a combination of TRAs and NTRAs can significantly enhance the livelihoods of communities adjacent to national parks. By integrating both TRAs and NTRAs, the study enriches the existing body of livelihood literature, showing that a multifaceted approach to livelihood strategies is crucial for improving well-being in these communities. It provides valuable insights into how tourism can be part of a broader, more diversified set of livelihood activities, rather than being viewed as the sole or primary driver of economic and social improvements. The study also emphasizes the need for a sustainable livelihood perspective that accounts for the broader socioeconomic implications of tourism. While tourism can contribute to livelihood improvements, the research highlights that it is not a panacea for all the challenges faced by communities near national parks. This research challenges much of the prevailing tourism literature, which often treats tourism in isolation as the primary tool for sustainable development. In contrast, this research advocates for integrating tourism within a wider framework of livelihood strategies that include other economic, social and environmental factors, fostering a more holistic approach to community development.

This study highlights that the limited involvement of local communities in profitable tourism ventures hampers the economic prospects of those living near national parks. Analysis of demographic data reveals that most respondents are engaged in low-return activities such as weaving. To improve livelihoods, it is crucial to enhance community participation in more lucrative tourism-related sectors. Effective community engagement can be fostered through targeted capacity-building programs that focus on developing local tourism businesses and employing residents in the tourism industry. Practical steps include providing specialized training to residents to equip them with skills for high-value tourism roles such as catering, hotel management and tour interpretation. This approach can significantly boost local incomes and improve overall livelihoods. In addition, policymakers should advocate for policies that mandate tourism investors — those establishing or running businesses near national parks — to use a certain percentage of local community members. Such a policy would facilitate greater integration of local residents into the tourism labor market, increase their involvement in the sector and ultimately enhance their economic well-being.

In addition, the study highlights the importance of developing tourism businesses that directly benefit local communities, using tourism as a means to enhance livelihoods and future prospects for residents near national parks. UCOTA can facilitate this by incubating businesses that allow local community members to host and manage tourism experiences.

Such businesses might include activities like cooking and tasting local cuisine, visiting local markets, taking village walks, engaging in fishing or sailing with residents, biking tours around the village, participating in painting sessions, listening to storytelling by elders and experiencing homestays or farm stays. By fostering these types of tourism experiences, the reliance on intermediaries is reduced and the typical tourist “bubble” – where tourists follow fixed itineraries without meaningful interaction with local communities – is diminished. This direct engagement between national park-adjacent residents and tourists not only helps locals better understand and value tourism but also expands their customer base, sparks new business ideas and increases cash inflows. Ultimately, this approach enhances the economic well-being of the community and contributes to their overall improvement.

Another, key recommendation based on this study is to strengthen and support traditional economic activities, particularly agriculture, as essential components of livelihood strategies in national park-adjacent communities. By investing in sustainable farming practices, improving access to markets and providing technical training, local agricultural activities can become more productive and profitable, thereby enhancing the overall well-being of community members. Supporting these traditional economic practices ensures that communities have diverse, stable sources of income, which can buffer against economic shocks and reduce overreliance on tourism-dependent livelihoods. This approach will contribute to long-term economic resilience and sustainability, promoting food security and improving the quality of life for residents.

This study acknowledges several limitations. First, the research is limited to the western region of Uganda, which may restrict the ability to generalize the results to park-adjacent communities throughout the entire country. In addition, the face-to-face administration of questionnaires by research assistants could have unintentionally influenced participants’ responses or introduced recall biases, potentially affecting the accuracy of the data. Future research should consider using qualitative or mixed methods approaches, as well as longitudinal studies, to gain a more comprehensive understanding of the relationships between livelihood strategies and sustainable livelihood outcomes. Qualitative methods could provide deeper insights into participants’ experiences and perceptions, whereas longitudinal studies would allow for the examination of changes over time. In addition, conducting comparative studies across different industries and countries, using multilevel analyses, would offer a broader perspective on contextual factors and industry-specific dynamics. Such approaches could enhance theoretical frameworks and provide practical insights for improving sustainable livelihoods by accounting for diverse contexts and methodological variations. By providing a clearer understanding of the role of tourism within a diversified livelihood strategy, the research encourages future studies to explore the synergies between tourism and other livelihood activities, as well as the conditions under which tourism can truly contribute to long-term sustainability for park-adjacent communities.

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