



Exploring community-based ecotourism resilience for post-pandemic recovery: Insights from the Kassena Nankana West, Ghana

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ABSTRACT

Despite the tourism sector's susceptibility to disruptions, it remains a significant gatekeeper and pillar of rural households in developing nations. This study evaluated the effectiveness of ecotourism resilience strategies in the aftermath of the COVID-19 pandemic. A mixed-methods explanatory sequential design was used with both qualitative and quantitative methods. Qualitative data were gathered from key informants and focus groups through interviews and discussions employing a purposive sampling approach. The resilience theory informed the research process. Wholesalers, retailers, and market leaders of ecotourism items were the objects of study. A sample of 297 respondents was derived from a population of 1,140. Descriptive statistics, i.e., frequencies and percentages, were used in analysing the data. The findings show that the stakeholders embraced resilience measures, including digital infrastructure development, quality improvement of health services, local community involvement in tourism planning, and indigenous cultural heritage enhancement. The adoption of ecologically sustainable practices, including waste management and the protection of heritage resources, also resulted in the revitalisation of ecotourism activities during the post-pandemic era. The strategies, therefore, resulted in spectacular growth in the monthly revenues of the stakeholders. However, sentiments regarding the impact of these measures were mixed; many respondents stated that aid did not trickle down evenly, favouring established players and leaving out smaller or newer businesses. The study recommends policymaking via multi-stakeholder participation to ensure equitable distribution of benefits to all stakeholders.

Keywords: Cultural Heritage, Conservation, Ecotourism, Resilience Strategies, Waste Management

I. INTRODUCTION

The global pandemic has led to unprecedented disruption across various sectors, with tourism being the most severely affected. According to the United Nations World Tourism Organisation (UNWTO), international tourist arrivals plummeted by 74% in 2020 compared to 2019, resulting in over one billion fewer international travellers and a loss of US\$1.3 trillion in export revenues from tourism (Godfrey, 2022). This significant shock necessitated a reconsideration of adaptive strategies in the tourism sector worldwide to enhance resilience, sustainability, and adaptability in the face of prevailing and emerging global uncertainties (Elbaramelgy et al., 2019).

Resilience can be described as the capacity of a system, structure, community, or ecology to withstand, adapt to, and recover from adversity, stress, or shocks (Kong et al., 2022). This is the ability to recover from challenging situations, typically in an even stronger or greater capacity (Antonelli et al., 2022). The tourism industry in Africa, which had been registering steady growth before the pandemic and contributing around 7% of the continent's Gross Domestic Product [GDP], experienced a 75% decline in foreign visitors during the year 2020 (Elbaramelgy et al., 2019), the pandemic revealed structural vulnerabilities of Africa's tourism systems, such as foreign tourist overdependence, digital infrastructure scarcity, and inadequate crisis management systems.

But according to Senbeto (2022), it also opened up the chance of shifting towards more localised, resilient, and inclusive tourism approaches. Several African countries have since employed channels such as promoting domestic tourism (Irmdu, 2022), digitalising tourism businesses, and diversifying tourism products to revive the sector (Musavengane, 2022). Ghana, in particular, had a 70% decline in foreign visitors last year, from 1.13 million travellers in 2019 to approximately 355,000 in 2020 (Preko & Anyigba, 2024). The pandemic had cut short Ghanaian flagship projects like "Beyond the Return," aimed at leveraging the success of Ghana's 2019 "Year of Return." However, the country promptly reshuffled itself by utilising its heritage, ecotourism, and diaspora engagement (Yahaya et al., 2022).

While much of the recovery effort has focused on the southern belt, including Accra, Cape Coast, and Kumasi, the northern five regions, with their own cultural topographies and ecological locations, are under-represented in policy debates and research (Aniah et al., 2025). Northern Ghana, encompassing the North East, Savanna, Upper East, Upper West, and Northern Regions, has untapped tourism potential in forms of cultural festivals, historical sites, wildlife reserves, and community-based ecotourism. Such areas, nonetheless, undergo compound vulnerabilities brought about by limited infrastructure, climatic conditions, and persistent sentiments of insecurity in the area (Aniah et al., 2025).

Despite previous studies on post-pandemic activities in the field of tourism (Senbeto, 2022; Hall et al., 2021; Delgado-Serrano, 2018), there is still some paucity of literature and data regarding the topic under investigation respect to the study area, as such studies have basically centred on the management of natural resources in the wake of the pandemic and the effects of COVID-19 on local tourism enterprises. This study, however, examines the sustainable resilience interventions employed by stakeholders of some tourist destinations within the Upper East Region of Ghana during the recovery period following COVID-19. Thus, the recovery period post-pandemic presents a crucial window for examining how tourism stakeholders in the region are adapting and planning in response to new global travel trends, such as increased motivation for sustainable tourism, e-planning of travel, and health-conscious travel behaviour. The study seeks to answer the following questions:

1.1 Research Questions

- i. What resilience strategies have been implemented to mitigate the effects of the COVID-19 pandemic on ecotourism?
- ii. Are the implemented resilience strategies sensitive to ecological sustainability?
- iii. How do post-pandemic recovery revenue generation patterns compare to the pre-pandemic era in the tourism industry?
- iv. What are stakeholders' perceptions regarding the effectiveness of the resilience strategies in the post-COVID-19 pandemic recovery?

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Resilience theory

Resilience theory, as initially proposed by Holling (1973), was theoretically used in this study. Under the theory, systems, including communities, firms, or industries, possess the capacity to absorb shocks, adapt, and recover through inherent capacity and external support (Fiksel & Fiksel, 2015). The COVID-19 pandemic was an exogenous shock that disrupted tourism activities, livelihood, and overall well-being. To mitigate human-induced and natural threats, local processes such as participation and agency, resource management, income generation, and conservation function as adaptive mechanisms, enabling the capacity of societies to absorb adversity. These processes embody the resilience theory's focus on adaptation peculiar to a context and the utilisation of existing capacities to cushion disruptions.

They influence the main recovery processes of economic recovery and diversification, social cohesion and local agency, environmental sustainability, and constructing adaptive capacity. These findings illustrate the tourism industry's ability to bounce back and emerge more resilient against any disruption in the future (Elbarmelgy et al., 2019; Delgado-Serrano et al., 2018; Gabriel-Campos et al., 2021). Sustainable post-pandemic recovery involves revitalising tourism activities, reducing vulnerability to future shocks, and enhancing community welfare. The success of these endeavours is contingent on external factors. Availability of finance, supportive policies, and digital infrastructure are some of the factors that have a significant role in facilitating or inhibiting resilience (Tangcharoensathien et al., 2018). Such moderating variables align with the resilience theory perspective that recovery is a function of the availability of resources, institutional capacity, and innovation (Mokline & Ben, 2021). The model suggests that tourism resilience following COVID-19 includes empowering adaptive systems through local action, strategic support, and collaboration (see figure 1).

2.2 Empirical Review

During the COVID-19 pandemic, ecotourism globally, and particularly in Africa, was severely affected. Governments, operators, and communities came up with an array of mechanisms to cushion the impact. Health and safety protocols such as mandatory mask-wearing, social distancing among visitors, increased sanitation, and biosecurity policies were instituted to rebuild tourist confidence while protecting wildlife. For instance, in Uganda, conservationists gave top priority to strict visitor management in great ape tourism to prevent reverse zoonotic transmission since human respiratory disease was a key threat to chimpanzees (The Guardian, 2024). Domestic tourism marketing, online advertisement, and virtual tours were in a position to become necessary stop-gap measures at home in Ghana and the entire continent of Africa, enabling operators to experience some level of interaction with prospective visitors when international tourism was suspended (Soliku et al., 2021). Such coping mechanisms were possessed with varying levels

of ecological sustainability. On the one hand, lower tourist arrivals lowered short-term pressures on the ecosystem, while increased participation in outdoor, low-density types of tourism activity was in line with sustainable goals (Mudzengi et al., 2022). The decline in tourism receipts, however, dampened conservation finance and threatened protected areas. Lacking assured income, other societies employed unsustainable practices such as charcoal production and wildlife hunting, such as in Ghana's Upper East Region, where marginal stakeholders excluded from government relief programs were forced to pursue ecologically degrading coping strategies (Akonga et al., 2023). This implies that resilience efforts risk neglecting the ecological dimension of sustainability in the absence of social and financial inclusion.

Post-pandemic trends in revenue generation have experienced a robust rebound, but with considerable variations by region and tourism niches. According to the United Nations World Tourism Organisation (UNWTO, 2024), international tourist arrivals returned to pre-pandemic levels by late 2024, with Africa reporting a 6% increase above 2019. Tourist spending even grew faster than arrivals, which demonstrated a robust economic rebound (Samuel et al., 2024). However, this recovery was uneven, with ecotourism destinations that depended nearly solely on international visitors lagging behind mainstream or upmarket tourism segments. Operators in Ghana's Savannah region both experienced livelihood restoration and environmental issues, highlighting that diversification of tourism markets and local capacity building remain essential to resilience (Soliku et al., 2021).

Both achievements and deficiencies are also evident in stakeholder mentality towards resilience measures. In Côte d'Ivoire, local communities living along Banco National Park reported continued support for ecotourism during the pandemic, largely based on their recognition of its socio-cultural, environmental, and economic benefits (Kouadio et al., 2023). Conversely, in Ghana, the majority of local stakeholders perceived the strategies as unfair, given that powerful players enjoyed unequal access to government aid while vulnerable groups were excluded (Akonga et al., 2023). This exclusion engendered distrust and temporary environmental degradation, thereby undermining long-term objectives of sustainable recovery (Cobbinah et al., 2017). Also, conservation-tied wage subsidies, emerging digital innovations, and the transition toward local tourism were universally seen as required and partially effective measures that cushioned the industry (Eshun & Tichaawa, 2019). The inferred effectiveness of resilience measures appears to depend on inclusivity, adequate funding, and the balance between economic revival and ecological preservation (Dayour et al., 2024).

III. METHODOLOGY

3.1 Profile of Study Area

The Kassena Nankana West District of the Upper East Region of Ghana, located at 10.97° North latitude and 1.10° West longitude, features numerous cultural and environmental tourist sites, including the Sirigu Women's Art and Pottery Centre (SWOPA) and the Chief's Crocodile Pond (Yahaya et al., 2022). According to the Ghana Statistical Service report of 2021, the population in the district is 90,735, comprising 43,909 males and 46,826 females. The district lies within the Sahel Savannah vegetation belt, characterised by open savannah grasslands with few fire-resistant deciduous trees and limited broad-leaved species (Aniah et al., 2025). Dense cover is found on riverbanks and in forest reserves. Dawadawa, Shea, Baobab, Neem, and Mango are some of the serious economic trees found in the district (Adongo et al., 2019). Economically, around 74% of people above 15 years of age are economically active in the labour force, out of which 97.6% are employed (Nartey, 2025). The remaining 26% are economically inactive, with most of them being students (52.6%), followed by those involved in domestic work (19.2%), and others unable to work due to sickness or disability (6.3%) (Agyekum et al., 2024). Half of the unemployed are first-time job seekers. The main livelihood activities in the district include crop farming, animal husbandry, basket making, production, and pottery (Anokye et al., 2024). The district further has tremendous tourism potential with attractions such as the Zenga Crocodile Pond, Kayoro sacred pythons, Chiana caves, Pikworo Slave Camp, and the culturally significant Chief's Crocodile Pond at Paga. The beautiful scenery and panoramic points invite visitors from all over the world to experience nature (see Figure 1).

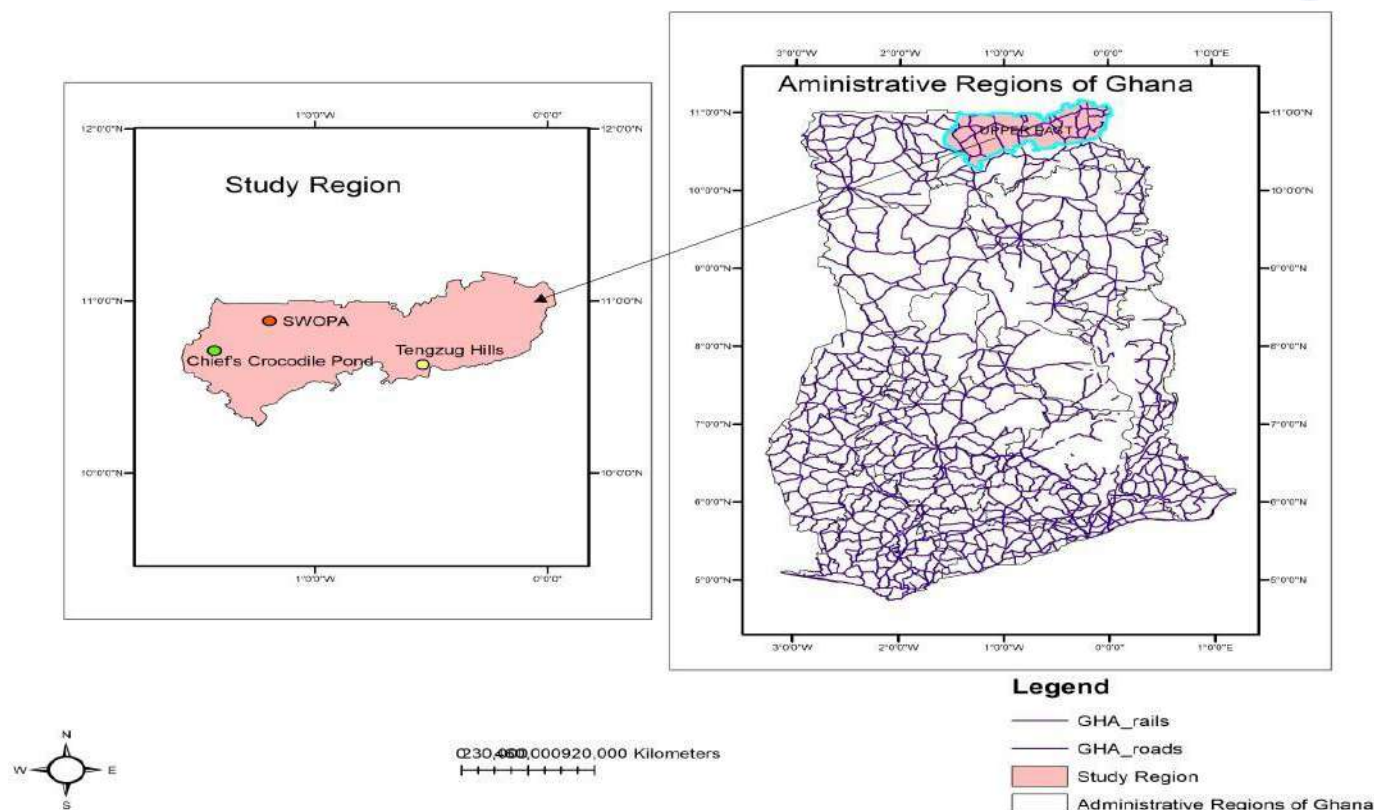


Figure 1
Profile of Study Areas

3.2 Research Design

Embedded in pragmatism as a research philosophy, the study employed a mixed-method explanatory sequential approach, incorporating qualitative and quantitative methods. The data were gathered within a period of seven months (February-September 2023). In naturalistic research, such as in ecotourism-based communities, the mixed-methods approach is particularly relevant because it enables the researcher to inquire and interpret as well as measure real-life events, practices, and complex socio-cultural facets of livelihoods. Such a combination provides a fuller picture of such phenomena that are not fully explained by any single technique. The quantitative component provides measurable evidence on pattern, association, and magnitude of effects, while the qualitative component provides deeper insight into perception, experience, and meaning accorded to ecotourism and resilience strategies. Cumulatively, these approaches bring rigour and richness to the findings, and the research design is suited to investigate complex problems in which context and experience are of equal worth to quantitative data (Creswell & Plano, 2023).

3.3 Sampling Techniques and Sample Size Determination

Given the dynamic nature of ecotourism, a combination of probability and non-probability sampling methods was employed to gather the quantitative data. A computerised simple random sampling method was used to select 297 respondents from the sampling frame of 1140 (see Table 1). The details of the sample frame of tourism business stakeholders were obtained from the Ghana Statistical Services and the Ghana Tourism Authority in Bolgatanga, with each shop assigned an ID number. Using Microsoft Excel's random number generator, respondents were selected automatically, ensuring objectivity and eliminating bias. The sampling frame included retailers, wholesalers, basket and smock weavers. The probability sampling was adopted because it provides a sample that practically reflects the population under investigation (Mertler et al., 2021). The non-probability sampling techniques (purposive sampling and snowballing) were deployed to select key informants for the qualitative data collection process. The non-probability technique is cost-effective and provides access to hidden populations that the probability sampling technique cannot. In total, 8 key informants were interviewed in the study communities. This included 3 in Sirigu Women’s Pottery and Art (SWOPA), 2 in the Zenga crocodile pond, and 3 at the chief’s crocodile pond in Paga.

Participants in the qualitative survey included tour guides, management of the selected tourist sites, sectional group leaders from various units in the sector, and market queen mothers and tour guides. The sample size was determined using Taro Yamane’s mathematical equation:

$$n = N / [1 + N(e^2)] \dots \dots \dots \text{equ. [1]}$$

Where:



n = sample size

N = population size (1,140), and

e = margin of error (0.05), representing a 95% confidence level.

$$n = \frac{1140}{1+1140(0.0025)} \dots\dots\dots \text{equ. [2]}$$

Table 1
Sample Size Distribution of Respondents in Tourist Sites

District/Municipal	Name of Tourist Site Based on Tourism Participation	Number of stakeholders	Target Sample Size
Bolgatanga Municipality	Centre for National Culture	395	395/1140*297=102
Kassena-Nankana West District	Sirigu Women’s pottery site	289	289/1140*297=75
	Zenga crocodile pond	229	229/1140*297=59
	Chief’s crocodile pond	240	235/1140*297= 61
	Total	1140	297

For the qualitative component, purposive sampling was employed once more to identify and engage key informants, including market queens, retailers, wholesalers, and sectional leaders.

3.4 Data Analysis and Presentation

The qualitative data were collected through key informant interviews and focus group discussions using interview guides. They were transcribed and systematically coded using thematic analysis to identify key patterns and insights. The findings were illustrated with direct quotations from participants to provide context and depth to the themes that emerged. Quantitative data were analysed using descriptive and inferential statistical techniques, with the aid of the Statistical Package for the Social Sciences (SPSS, version 27). SPSS was chosen for its robust analytical capabilities, particularly in handling a wide range of bivariate and multivariate statistical methods (Mertler et al., 2021). The results were presented using tables, frequency distributions, graphs, percentages, and mean values to effectively summarise and interpret the data.

IV. FINDINGS & DISCUSSION

4.1 Demographic Characteristics of Participants

Table 2 presents the demographic characteristics of the study participants, namely: sex, age range, and level of education.

Table 2
An Illustration of the Demographic Characteristics of Respondents

Characteristics of Sampled Tourism Stakeholders	Frequency	Percent
<i>Sex</i>		
Male	123	41.4
Female	174	58.6
<i>Age range</i>		
20-30	63	21.2
31-41	94	31.6
42-52	66	22.2
53≥	74	24.9
<i>Level of education</i>		
Tertiary	63	21.2
Primary level education	95	32
No formal education	93	31.3
Secondary education	46	15.5
<i>Marital Status</i>		
Single	81	27.3
Married	155	52.2
Yet to marry	39	13.1
Not interested in marriage	22	7.4
Total	297	100



The findings in Table 2 shows that females constitute 58.6% of respondents, indicating women's significant engagement in tourism activities and recovery processes. This gender distribution highlights the need for gender-sensitive tourism recovery strategies in participation, jobs, and decision-making. Age distribution shows that most respondents are middle-aged: 31.6% of respondents were between 31-41 years, 22.2% were between 42-52 years, and 24.9% were above 53 years. The remaining 21.2% fall within 20-30 years. These suggest that the respondents have substantial life experience. Education levels of respondents show that 21.2% of the respondents have attained tertiary education, 32.0% of the respondents have attained primary education, and 31.3% of the respondents have had no formal education. The fringe communities are predominantly family-oriented, with 52.2% of respondents being married and 27.3% of respondents being single.

4.2 Resilience Mechanisms of Ecotourism Stakeholders in Fringe Communities

Figure 2 illustrates how stakeholders in ecotourism ventures employed various resilient mechanisms to mitigate the adverse effects of the post-COVID-19 pandemic on tourism businesses. As the figure indicates, nearly 27% of the respondents reported that adopting digital infrastructure, including internet access and telecommunication services, facilitated business growth through social media promotion. In addition, 22% of the respondents mentioned that they widened the accessibility of health services to tourists to bolster security and confidence. Moreover, 17% of the respondents mentioned that ActionAid Ghana and the STAR Ghana Foundation provided financial assistance to sustain their business operations during and after the pandemic. In addition, 16% stated that community participatory engagement in tourism planning helped build ownership and preservation of heritage properties, thereby enhancing the continuation of business after the pandemic. Finally, 15% asserted that encouraging cultural pride helped attract tourists, thereby supporting tourist arrivals and revenue generation. The findings support key informants' assertions that:

"Things would have been terrible without the intervention of the NGO. The STAR Ghana Foundation supported me with a sum of GHS 3,521, which was used to purchase baskets, smocks, and other artefacts. This has gone a long way in boosting the business's resilience and sustainability strength (Head of Smock Weavers, SWOPA, 21st May 2023).

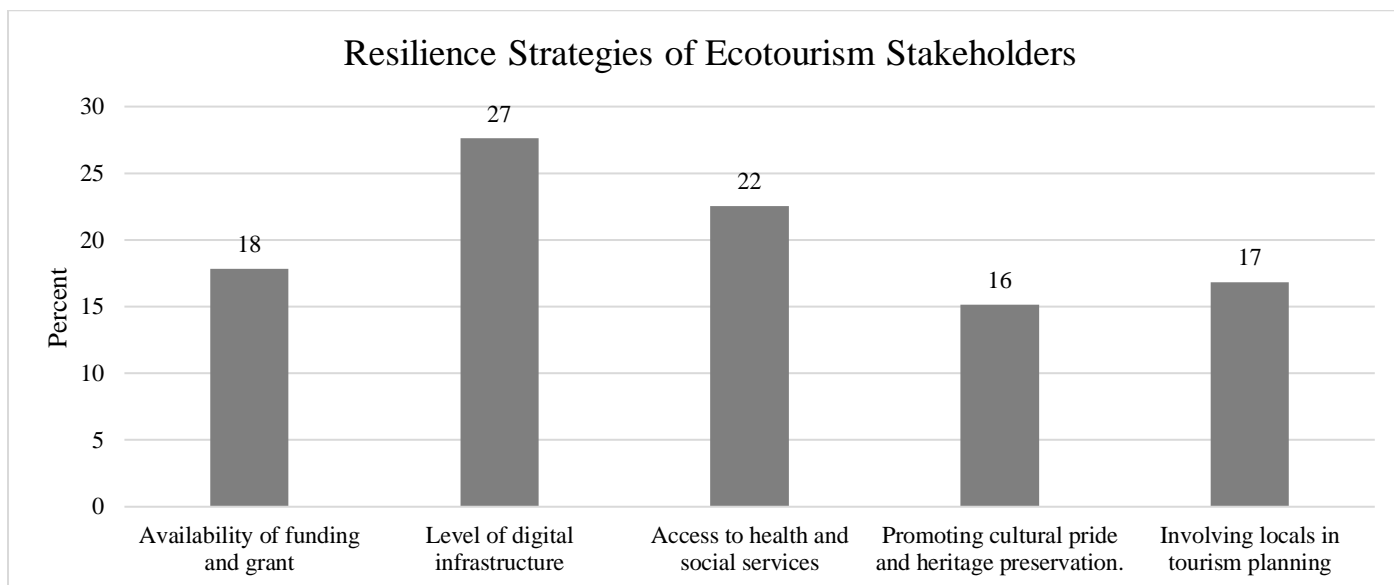


Figure 2
Resilience Strategies Adopted by Ecotourism Stakeholders

4.3 Effectiveness of post-COVID-19 Resilience Strategies on Ecological Management

Table 3 reveals that for the claim, *Tourists are well informed about the tourist site's ecological guidelines and sustainability values*. 112 respondents strongly agreed, 51 agreed, 54 were neutral, 50 disagreed, and 30 strongly disagreed. This results in a total agreement level of 163 and a disagreement level of 80, indicating moderate confidence in tourist awareness, with room for improvement. Regarding the assertion that *Environmental sustainability is a core principle in how ecotourism is managed in this community*, 88 strongly agreed, 92 agreed, 56 were neutral, 37 disagreed, and 24 strongly disagreed, leading to a strong agreement level of 180, which reinforces the perception of sustainability as a guiding principle.

Relative to the opinion, *Operators actively implement conservation practices*, 57 strongly agreed, 102 agreed, 56 were neutral, 77 disagreed, and 5 strongly disagreed. Although 159 respondents agreed, the relatively high disagreement count of 82 suggests concerns about the visibility or effectiveness of these practices. Regarding the



promotion of *Local ecotourism as a resilience strategy in sustaining tourism and biodiversity*, 85 strongly agreed, 79 agreed, 38 were neutral, 55 disagreed, and 40 strongly disagreed, indicating a total agreement of 164 but also the highest disagreement total of 95, revealing scepticism about the biodiversity benefits of ecotourism. Finally, for the statement, *Waste management practices at tourist sites are effective and environmentally sound*, 99 strongly agreed, 90 agreed, 34 were neutral, 53 disagreed, and 21 strongly disagreed, yielding the highest total agreement of 189, suggesting this aspect of sustainability is most widely acknowledged and appreciated. The results corroborate the findings of focus group discussants.

Ecological sustainability and the usage and protection of heritage sites are key in the implemented strategies. Resilience strategies were implemented with ecological sustainability at the core of planning (Sirigu focus group discussants, December 2023).

Table 3

Opinion of Stakeholders regarding the effectiveness of Implemented Resilience strategies on Ecotourism Management

Opinions of the respondent	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
<i>Tourists are well informed about the ecological guidelines and sustainability values of the area</i>	112	51	54	50	30
<i>Environmental sustainability is a core principle in how ecotourism is managed in this community</i>	88	92	56	37	24
<i>Operators actively implement conservation practices</i>	57	102	56	77	5
<i>Local ecotourism projects help to protect biodiversity in the</i>	85	79	38	55	40
<i>Waste management practices at tourist sites are effective and environmentally friendly</i>	99	90	34	53	21

4.4 Comparative Monthly Earnings from Tourism Activities: Pre- and Post-Pandemic Periods

Table 4 illustrates the fluctuations in monthly earnings of selected tourism sites across the pre-pandemic, peak pandemic, and post-pandemic periods.

Table 4

Revenues Generated from Tourism Activities per Month (Pre-Pandemic and Post-Pandemic)

	Pre-pandemic Earnings (P1)	Arrivals per month	Earnings During Pandemic (P2)	Arrivals per month	Differentials D1=(P1-P2) (GHS) LOSSES (D1)	Post-pandemic earnings (P3)	Arrivals per month	Differentials D2= (P3-D1) (GHS) GAINS (D2)
Sirigu Women's Pottery and Art (SWOPA)	4,567	459	1,452	92	3,115	6523	876	3,408
The Chiefs' crocodile pond	2,758	341	1,234	102	1,524	4,128	780	2,604
Craft village-Bolgatanga	7,342	1268	2,145	354	5,197	12,498	2579	7,301

Table 4 shows that Sirigu Women's Pottery and Art (SWOPA), Chiefs Crocodile Pond, and Craft Village-Bolgatanga experienced significant income falls during the peak of the pandemic (P2) compared to the pre-pandemic period (P1), with SWOPA incurring a loss of GHS 3,115, Chiefs Crocodile Pond GHS 1,524, and Craft Village GHS 5,197. However, in the post-pandemic period (P3), each tourism site not only recovered but also surpassed its pre-pandemic earnings, leading to substantial gains. SWOPA recorded a profit of GHS 3,408, Chiefs Crocodile Pond GHS 2,604, and Craft Village-Bolgatanga GHS 7,301. This trend points to a strong post-pandemic recovery, with increased earnings possibly driven by renewed tourism interest, improved marketing efforts, or adaptive strategies adopted during the recovery phase. The data highlight both the vulnerability of these local tourism enterprises during crises and their resilience in seizing post-pandemic opportunities.

The findings corroborate the views of the key informants that:

“During the COVID-19 pandemic, I experienced a cessation in sales, primarily due to the decline in tourist arrivals and patronage. Previously, I generated approximately GHS 400 per month. However, I currently earn about GHS 1750 per month from the sale of my baskets to tourists, predominantly from countries such



as Canada, the United States, and the United Kingdom. I attribute this increase to the strategies we have implemented” (Leader of Market queens of chief’s crocodile pond, April, 2024)

4.5 Stakeholder Perception of the Effectiveness of Resilience Strategies on Employment

The assessment of stakeholder perceptions regarding the effectiveness of resilience strategies in job creation within the tourism sector revealed a range of views, mainly positive. A considerable proportion of respondents (50.2%) strongly agreed that these strategies helped create jobs and sustain businesses, with an overall mean score of 2.9226, indicating a fairly strong consensus on the usefulness of resilience measures in maintaining business continuity during and after disruptions. Concerning the improvement of tourism stakeholders' livelihoods, 42.4% strongly agreed and 21.5% disagreed, resulting in a mean of 2.7205. This reflects a moderately positive view; however, a significant segment (36%) disagreed, showing that not all groups saw tangible benefits to their livelihoods. About community members' participation in planning these strategies for job creation, only 36% strongly agreed and 21.2% disagreed, producing a lower mean score of 2.5320. This suggests that community involvement in the planning process was somewhat limited, highlighting the need for more inclusive and participatory approaches in future resilience initiatives. Overall, while the strategies were seen as effective in keeping businesses running, their impact on community engagement and broader livelihood improvements seems less significant (see Table 5).

Table 5

Tourism stakeholders’ perception regarding the effect of resilient strategies on job creation

Variables Measured	SA		A		D		D		Mean
	F	%	F	%	F	%	F	%	
Community members actively participated in planning resilience strategies.	107	36	63	21.2	70	23.6	57	19.2	2.5320
Resilience strategies aided in sustaining businesses.	149	50.2	85	28.6	18	6.1	45	15.2	2.9226
The livelihoods of tourism stakeholders have improved due to the resilient mechanisms.	126	42.4	64	21.5	31	10.4	76	25.6	2.7205

Note: Strongly agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)

The opinions of key informants were mixed relative to the findings, as they claimed.

“In my assessment, the resilient strategies we collectively implemented significantly influenced my business. During the peak of the pandemic, I was unable to generate sufficient income to support my household, pay for my children's school fees, and fulfil other domestic responsibilities. However, at present, I can meet these obligations due to the surplus earnings I derive from my business” (head of smock weavers at SWOPA, 2024)

“I have not made any improvements in sales after the COVID-19 pandemic. To me, the resilient strategies are not effective because the government funding was targeted at well-established wholesalers in the industry. Those of us engaged in retailing were not considered. Hence, the business is not effective post-COVID-19 because we lack the resources to invest in the business for expansion” (Leader of Tengzuk basket weavers’ association, September 2024)

4.6 Discussion

4.6.1 Resilience Strategies of Ecotourism Stakeholders in Fringe Communities

The findings indicate that ecotourism stakeholders employed various resilience strategies to adapt to the COVID-19 pandemic's hardships and achieve operational sustainability (Gössling et al., 2021). These included diversification of digital infrastructure, which enhanced the visibility of ecotourism products. Digital platforms enabled stakeholders to share information on services and procedures, as well as manage tourists' expectations (Sigala, 2020). Stakeholders have improved the provision of primary healthcare in tourist destinations by supplying trained nurses to address minor illnesses, such as malaria, catarrh, and diarrhoea (Lew et al., 2020). Efforts increased visitors' confidence and tourist arrivals, increasing family incomes (Goodwin et al., 2020). Post-pandemic recovery was significantly enhanced by NGO funding, which enabled tourism stakeholders to invest in their enterprises following the resumption of tourist arrivals (Citaristi, 2022; Gössling et al., 2021). The involvement of locals in planning and executing recovery efforts brought ownership and accountability, which were necessary for the smooth implementation (Scheyvens & Biddulph, 2018; Telfer & Sharpley, 2015). Preservation of culture was an essential aspect through local crafts and cultural performances (Richards, 2018). Culture-enhanced destination uniqueness while inculcating values among locals (Lew et al., 2020), making it more desirable and generating revenue in the post-pandemic era (Citaristi, 2022).



4.6.2 Post-COVID-19 Resilience Strategies Implemented on Ecological Sustainability Effects

Ecologically focused resilient strategies have been instrumental in helping ecotourism recover from the impact of the COVID-19 pandemic. The strategies, with their root in ecological consciousness, sustainability, conservation, and reduction of waste, have acted as a pivotal force in restoring tourists' confidence and raising awareness of the attractiveness of ecotourism destinations. Promoting environmental consciousness among tourists was central to recovery since educating tourists on environmental regulations rendered ecotourism a safe and sustainable option. Locations that focused on sustainability recovered rapidly, with tourists seeking ethical and nature-based experiences (Citaristi, 2022; Gössling & Higham, 2021). Following the inclusion of environmental sustainability as a core guiding principle, recovery was not reactive but transformational and aligned with the 'build back better' policy that is centred on sustainability in an attempt to promote long-term resilience (Liu & Zhang, 2025; Saarinen & Rogerson, 2021).

Recovery efforts minimised space in more resilient environmental aspects. Conservation efforts enhanced sector resilience and were evidence of a commitment to environmental stewardship. Post-pandemic success provided the opportunity to redefine conservation goals and further consolidate community partnerships (Scheyvens & Biddulph, 2018; Stronza et al., 2019). Local ecotourism support mitigated international travel restriction impacts and promoted domestic nature tourism. Localisation re-stimulated rural town revenues and reduced ecosystem pressure through dispersing tourists (Fletcher et al., 2020). Enhanced waste management in destinations displayed environmental responsibility and security. Through the backing of green waste systems, managers guaranteed tourists while upholding ecological principles, which supported recuperation at a quicker rate (Becken & Hay, 2012; Simpson et al., 2023).

4.6.3 Pre and Post-COVID-19 Pandemic Comparison of Tourism Activity Earnings

The experience attests to a strategic shift of local tourism enterprises in Ghana's Upper East Region. The SWOPA, Chiefs Crocodile Pond, and Craft Village experiences are a testimony to the benefits of grassroots tourism for regional economic renaissance and long-term stability. The Sirigu Women's Pottery and Arts (SWOPA), Chiefs Crocodile Pond, and the Centre for Art and Culture-Bolgatanga were initially vulnerable to COVID-19 but had a strong financial recovery after the shutdown, although they experienced immense revenue loss due to travel restrictions and public health uncertainty. Post-pandemic was characterised by immense revenue turnover for domestic tourism, which bounced back in excess of pre-pandemic levels (Hall et al., 2020). Evidence of their resilience and ability to weather crisis conditions (Citaristi, 2022). Enabling factors include the re-opening of the market, which increases demand for nature-based, culturally endowed destinations, and mitigation strategies such as enhanced marketing, e-promotion, and safety (Guo et al., 2022). Collaborative efforts with NGOs or local governments also helped restore visitor confidence. Evidence is that local tourism enterprises of Ghana's Upper East region have bounced back financially and strategically repositioned in the emerging tourist scenario. The sector has utilised the crisis as a business upgrading opportunity, diversification of products to be offered, and increased community engagement. Such enterprises prove the worthiness of community-based tourism as a richer cultural and economically viable system for development in times of uncertainty (Ruiz-Ballesteros & del Campo Tejedor, 2020)

4.6.4 Perception of Tourism Stakeholders towards the Success of Resilience Strategies

The findings conclude that overall, stakeholders viewed the resilience actions within the tourism industry as successful, particularly in safeguarding employment and business continuity during and after the COVID-19 pandemic. These actions were seen as crucial for maintaining the sustainability of tourist enterprises and avoiding widespread closures during a period of significant disruption. Most respondents believed that these interventions were necessary to keep companies afloat in response to the pandemic shock and to recover more quickly once lockdowns were eased. However, perceptions of the overall impact of these interventions on household and individual livelihoods were mixed (Guo et al., 2022). While many stakeholders reported some benefits to livelihoods, a considerable proportion remained sceptical about whether the actual improvements were meaningful. This suggests potential gaps between the intended outcomes of resilience efforts and the actual results, leading to unequal distribution of benefits across different groups within the sector. Participation in local decision-making was not universal, revealing a deficiency in inclusive planning processes. This disengagement may have affected the success of certain strategies and diminished local ownership and long-term sustainability (Wang et al., 2021). The study highlights the importance of establishing participatory strategies that are adaptable enough to incorporate local input into resilience planning, thereby enhancing both the legitimacy and the effectiveness of recovery efforts.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study aimed to examine the effectiveness of adopted resilience interventions in the tourism industry during post-pandemic COVID-19 recovery. Overall, stakeholders viewed these resilience measures as effective, particularly in safeguarding business continuity during and after the COVID-19 pandemic. The interventions were seen as vital for

promoting the sustainability of tourist businesses and preventing large-scale redundancies during a period of significant interruption. Most interviewees stated that the policies were crucial for helping tourism businesses survive the pandemic's shock and recover more quickly once the lockdown ended. However, opinions on the overall impact of the policies on family and household livelihoods were more complex. While many stakeholders reported some improvement in livelihoods, a group expressed scepticism about the tangible benefits they had experienced. This highlights a potential gap between the coverage and benefit distribution of the resilience interventions and the real-world outcomes on the ground, indicating that different groups within the industry may experience varying levels of coverage and benefits.

Participation of the community members in decision-making didn't extend far enough, indicating a deficiency in inclusive planning practice. This isolation would have affected the success of some of the strategies and reduced local ownership and long-term sustainability. The study concludes that while resilience interventions across the tourism sector tended to be successful in securing jobs and business continuity in the COVID-19 pandemic, their net contribution to household livelihoods remains uncertain. While a majority of stakeholders were impressed with some change in livelihoods, others questioned the benefits realised because they felt there was no alignment between the intended impact and everyday practices. The peripheral participation of local communities in the decision-making process also detracted from the inclusiveness and long-term sustainability of such interventions. The evidence points to the need for more inclusive and participatory approaches to future resilience planning that make the benefits more inclusively enjoyed and responsive to local conditions.

5.2 Recommendations

It is recommended that fringe communities be involved directly in post-COVID-19 resilience planning in order to enhance the importance, ownership, and duration of such intervention. Additionally, there is a need to track systematically the actual impacts of resilience strategies on local livelihoods to capture and fill gaps between planned aims and resulting outcomes. All such a process needs to be done by multi-stakeholder interaction between community people, policymakers, and industry actors. Policies too need to be constructed inclusively in the same interaction to ensure benefits accrued are shared in proportion among all groups, with particular emphasis on vulnerable members in society in the ecotourism venture. Finally, the Government of Ghana needs to pay attention to skills upgrading of local players for capacity building and improvement of future resilience.

Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding this research.

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