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Cotourism Implementation, Practices, and Sustainability

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Abstract- ***This study assessed the extent of ecotourism implementation, practices, and sustainability in the Province of Antique, Philippines, during 2024. Data were gathered from 135 ecotourism destination personnel in both northern and southern Antique through convenience sampling. A researcher-made questionnaire, adapted from existing literature and validated using the Good and Scates criteria, was employed, with reliability pilot-tested among ecotourism destinations personnel in the province of Iloilo. Statistical tools such as frequency count, percentage, mean, rank, Chi-Square, Mann–Whitney U, Kruskal–Wallis H, and Spearman's rho were applied, with computations processed through SPSS at the 0.05 level of significance. Findings revealed that most personnel were doctorate degree holders, engaged primarily in nature-based activities, concentrated in northern Antique, and supported by long-established enterprises. Ecotourism implementation was rated "To a Great Extent," with waste management, tourist participation, and enforcement of regulations as the strongest indicators. Practices were rated "Mostly Practiced," prioritizing conservation, habitat protection, and tree planting, while artisan support, eco-transport, and low-impact accommodations received less emphasis. Sustainability was rated "High," with reinvestment in conservation, waste disposal, and community awareness as the strongest measures. Significant differences in ecotourism implementation and sustainability were observed across educational attainment, type of tourism activity, and years of business operation, whereas differences in ecotourism practices appeared only when classified according to length of service. Correlation analysis confirmed that implementation, practices, and sustainability were positively interconnected, with implementation emerging as the strongest driver of sustainability.***

Keywords: Ecotourism Implementation, Practices, and Sustainability

I. INTRODUCTION

Background of the Study

Ecotourism has become a key pillar of sustainable development in the Philippines, combining environmental conservation with community welfare. It is defined as "ethical travel to natural areas that contributes to environmental conservation and the well-being of local communities" (Samal et al., 2022). National policies such as Executive Order 111, Republic Act 11365, and the 2013–2022 National Ecotourism Strategy and Action Plan, formulated by the Department of Environment and Natural Resources (DENR) and the Department of Tourism (DOT), reflect the government's commitment to promoting ecotourism as a pathway for inclusive growth and ecological protection.

Within this framework, three interconnected concepts- implementation, practices, and sustainability shape the success of ecotourism initiatives. Implementation, as defined by Rivera et al. (2022), emphasizes the application of national standards to prevent unsustainable operations and environmental degradation. Practices involve ethical approaches to supply chains, tourism offers, and education that strengthen sustainability across enterprises of varying sizes. Sustainability, often equated with "green business practices" (Mendoza, 2022), integrates ecological responsibility into business models to ensure long-term viability. Together, these elements form a cycle: effective implementation enforces standards, ethical practices operationalize them, and sustainability ensures their continuity.

The Province of Antique, with its rich biodiversity and sites like Sibalom Natural Park, Bugang River, and Mararison Island, holds strong ecotourism potential (Provincial Government of Antique, 2023). Yet issues such as limited funding, poor infrastructure, weak marketing, and low community involvement persist (Espiritu & Lawas, 2019;

Makiling, 2023), restricting effective implementation of national standards and sustainable practices.

While implementation, practices, and sustainability are emphasized nationally, local research in Antique remains scarce, leaving gaps in understanding how these dimensions operate at the provincial level. This study addresses these gaps by assessing ecotourism implementation, practices, and sustainability, offering insights to guide stakeholders in balancing economic growth, environmental protection, and community well-being.

Statement of the Problem

This study aimed to assess the implementation, practices, and sustainability of ecotourism in the Province of Antique, Philippines, for the year 2024.

Specifically, this study sought to answer the following questions:

1. What is the profile of respondents in terms of educational attainment, length of service, type of ecotourism, years of business operation, and location?
2. What is the extent of ecotourism implementation as assessed by the respondents when taken as a whole and when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
3. What are the ecotourism practices as assessed by the respondents when taken as a whole and when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
4. What is the level of ecotourism sustainability as assessed by the respondents when taken as a whole and when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
5. Are there significant differences in the level of ecotourism implementation as assessed by the respondents when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
6. Are there significant differences in ecotourism practices as assessed by the respondents when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
7. Are there significant differences in the level of ecotourism sustainability as assessed by the respondents when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
8. Are there significant relationships among the ecotourism implementation, practices and sustainability?

Hypotheses:

Based on the questions stated above, these hypotheses were advanced.

1. There are no significant differences in the extent of implementation of ecotourism as assessed by the respondents when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
2. There are no significant differences in the practices of ecotourism as assessed by the respondents when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
3. There are no significant differences in the level of ecotourism sustainability as assessed by the respondents when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
4. There are no significant relationships among implementation, practices and sustainability of ecotourism.

Theoretical Framework

This research was anchored on three interrelated theories that collectively provided a comprehensive lens for examining how implementation, practices, and sustainability shaped the development of ecotourism in the Province of Antique.

For Implementation, the study used the Systems Theory of Management by Ludwig von Bertalanffy

(1968), which views organizations as complex, interdependent systems. This theory emphasizes collaboration and synergy among subsystems to achieve overall effectiveness. In the context of ecotourism, Systems Theory supported the idea that successful destinations depend on the proper application of national standards, coordinated stakeholder efforts, and strict adherence to guidelines that prevent environmental degradation and unsustainable operations.

For Ecotourism Practices, the study was anchored on the Contingency Management Theory developed by Fred Fiedler and Joan Woodward in the mid-20th century. This theory posits that no single management strategy is universally effective, highlighting the need to adapt leadership and decision-making to specific circumstances. Applied to ecotourism, Contingency Theory supported the notion that practices vary depending on the needs of each destination, requiring flexible approaches to supply chains, tourism offers, and educational initiatives that strengthen sustainability.

For Sustainability, the study was linked to the Sustainability Theory (Waring et al., 2015), which underscores responsible environmental stewardship grounded in cooperation. This theory is particularly important to the study because it emphasizes the long-term viability of ecotourism destinations. By promoting ecological responsibility and integrating "green business practices" into tourism enterprises, Sustainability Theory ensures that Antique's natural resources are preserved for future generations while simultaneously supporting economic growth and community welfare.

As a legal basis, this study was further guided by the 2013–2022 National Ecotourism Strategy and Action Plan (DENR & DOT, 2014), which serves as the national policy framework for ecotourism implementation. This plan emphasizes the integration of standards, practices, and sustainability, reinforcing the theoretical foundations by providing concrete guidelines and strategies for responsible tourism development.

By integrating these theories with the national policy framework, the study constructed a conceptual foundation in which implementation enforces standards, practices adapt strategies to local needs, and sustainability ensures continuity. Collectively, these frameworks and legal bases offered a solid foundation for analyzing how Antique's ecotourism sector can balance economic growth, environmental protection, and community well-being.

Conceptual Framework

The aim of this study was to explain the relationship among variables using the conceptual framework presented in Figure 1. The independent variables included the respondents' profile, specifically educational attainment, length of service, type of ecotourism, years of business operation, and location, while the dependent variables were ecotourism implementation, practices, and sustainability.

In terms of educational attainment, respondents were classified as bachelor's, master's, and doctorate degree holders. It was presumed that personnel with higher educational qualifications were more knowledgeable and more focused on ecotourism implementation, practices, and sustainability.

In terms of length of service, respondents were grouped into "5 years and below" and "6 years and above." It was assumed that those with longer service had greater experience in managing ecotourism enterprises, thereby demonstrating stronger implementation, practices, and sustainability compared to those with fewer years of service.

In terms of type of ecotourism, respondents were categorized as nature-based, cultural, or adventure. It was presumed that nature-based ecotourism operated with stronger practices and higher levels of implementation and sustainability compared to other types of destinations.

In terms of years of business operation, respondents were classified into "less than 5 years" and "6 years and above." It was assumed that enterprises with longer years of operation had more established systems and strategies that enhanced sustainability.

In terms of location, respondents were grouped into "North" and "South." It was presumed that ecotourism enterprises located in the southern part of

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Antique demonstrated higher levels of implementation and sustainability, and were more socially responsible and environmentally friendly compared to those in the northern part.

Lastly, the researcher posited that strict implementation of ecotourism, coupled with correct practices and established strategies of sustainability, would help preserve the natural environment and improve community welfare, thereby ensuring that future generations can continue to enjoy the province's resources.

These concepts are illustrated in Figure 1.

Research Paradigm

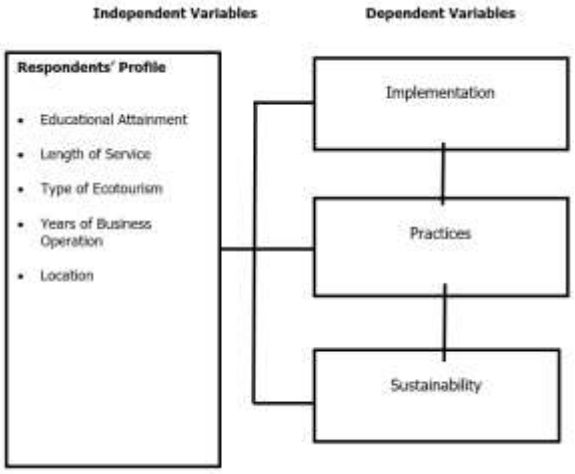

Figure 1. Schematic Diagram Showing the Relationship between the Independent and the Dependent Variables of the Study

Significance of the Study

The findings of this study hold importance for various stakeholders in the ecotourism sector of Antique:

Department of Tourism Officials. The results provide valuable insights into the current status of ecotourism implementation, practices, and sustainability. These findings may guide the Department in strengthening monitoring systems, enforcing environmental safeguards, and designing training programs that integrate cultural heritage preservation with ecological protection.

Department of Agriculture Officials. The study highlights the role of ecotourism in agricultural development. By emphasizing organic farming, biodiversity conservation, and sustainable food production, the findings may help officials craft policies and provide technical assistance that enhance agri tourism productivity, generate employment, and improve rural livelihoods.

Local Government Officials. The results serve as a reference for LGUs in recognizing the essential role of ecotourism in local development. The study provides guidance on how LGUs can collaborate with ecotourism enterprises to support artisan industries, eco transport, and low impact accommodations, thereby improving socio economic conditions in their communities.

Ecotourism Destination Operators. The study offers practical insights into strategies that secure long term business viability, minimize risks, and diversify income sources. Operators may use the findings to complement conservation efforts with cultural promotion and artisan support, strengthening competitiveness and broadening the benefits of ecotourism.

Ecotourism Personnel. The results provide useful information for personnel to better understand the current state of the industry. This knowledge may enhance their appreciation of delivering quality services while equipping them with strategies to manage risks and operational challenges more effectively.

Local Communities. The results highlight the importance of empowering communities to take active roles in ecotourism initiatives. By participating in conservation, cultural promotion, and sustainable livelihood programs, communities can ensure equitable benefits and strengthen ownership of ecotourism projects.

Tourists. The study contributes to improving tourist satisfaction by identifying practices that enhance services, accommodations, amenities, and attractions. Tourists may be encouraged to participate in conservation activities and support eco friendly

products, reinforcing ecological and community benefits.

Researchers. The findings enrich the existing body of knowledge on ecotourism implementation, practices, and sustainability. They provide a foundation for further inquiry into how institutional maturity and academic preparation influence sustainability outcomes.

Future Researchers. The study serves as a reference point for scholars undertaking related or expanded research. It contributes to the growing body of literature on ecotourism and encourages comparative studies across provinces or regions to assess long term impacts on livelihoods, cultural preservation, and ecological resilience.

Definition of Terms

The following terms are defined conceptually and operationally to ensure clear understanding of the study.

Ecotourism. Ecotourism is defined as "ethical travel to natural areas that contributes to environmental conservation and the well-being of local communities" (Samal et al., 2022).

In this study, ecotourism referred to the travel of tourists to natural areas in the province of Antique where they observed the implementation, practices, and sustainability of ecotourism destinations.

Implementation. Implementation refers to the application of national standards to prevent unsustainable operations and environmental degradation (Rivera et al., 2022).

In this study, implementation referred to the ecotourism plans and strategies applied in destination sites to prevent harm and unsustainable ventures. Respondents rated implementation using a five-point Likert scale, where 5 – Very Great Extent, 4 – Great Extent, 3 – Moderate Extent, 2 – Low Extent, and 1 – Very Low Extent served as the indicators.

Practices. Practices are defined as ethical approaches to supply chains, tourism offers, and education that strengthen sustainability across enterprises of varying sizes (Mendoza, 2022).

In this study, practices referred to responsible methods employed in supply chains, tourism services, and educational initiatives that supported sustainability across ecotourism enterprises in the Province of Antique for 2024. Respondents identified these practices through structured, close-ended questions, with answers categorized as "Yes" or "No."

Sustainability. Sustainability is often equated with "green business practices" integrated into business models to ensure long-term viability (Mendoza, 2022).

In this study, sustainability referred to the responsible use and preservation of natural attractions including the environment, flora, fauna, and local culture within Antique's ecotourism sites in the province of Antique for the year 2024. Respondents rated sustainability using a five-point Likert scale, where 5 – Very High, 4 – High, 3 – Moderate, 2 – Low, and 1 – Very Low served as the indicators.

Scope and Limitations of the Study

This study aimed to assess the ecotourism implementation, practices, and sustainability in the Province of Antique, Philippines, for the year 2024.

The researcher collected responses from 135 ecotourism destination personnel in both the northern and southern parts of Antique, who served as the respondents of the study. The sample was obtained through convenience sampling. According to Creswell (2012), convenience sampling involves selecting participants who are readily available and willing to be studied.

The independent variables included the respondents' demographic profile, specifically educational attainment, length of service, type of ecotourism, years of business operation, and location. The dependent variables were implementation, practices, and sustainability.

The survey instrument was modified to align with the objectives of the research. An adopted questionnaire

from literature was used to gather the necessary data. The instrument consisted of four parts: the first part was the profile sheet intended to collect personal data of the respondents; the second part measured the implementation of ecotourism; the third part assessed practices; and the fourth part evaluated sustainability. The content validity and reliability of the modified questionnaire on ecotourism implementation, practices, and sustainability were evaluated using the Good and Scates criteria. All suggestions for improvement were considered in preparing the final document, and copies were produced for administration.

The reliability of the questionnaire for measuring implementation, practices, and sustainability was tested through a pilot study conducted among potential ecotourism destination personnel in the Province of Iloilo.

To interpret the gathered data, the statistical tools used included Frequency Count, Percentage, Mean, Rank, Chi-Square, Mann-Whitney U-Test, Kruskal-Wallis H-Test, and Spearman's rho. All statistical computations were processed using the Statistical Package for the Social Sciences (SPSS) software. The margin of error was set at a 0.05 alpha level.

II. REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents significant highlights of the review of related literature and other publications that are parallel to this research. The information, concepts and ideas were taken from news articles, abstract, and journals from both local and foreign sources and the interactive media.

Conceptual Literature

On Implementation of Ecotourism

Ecotourism has been widely defined by scholars, each emphasizing its dual role in conservation and community development. Samal and Dash (2022) describe it as nature-based tourism that simultaneously addresses biodiversity protection and livelihood improvement. They highlight ecotourism as a "coexistence model," particularly through community-based ecotourism (CBET), where conservation efforts and local economic benefits are integrated to enhance sustainability.

Building on this perspective, De Zoysa (2021) situates forest-based ecotourism in Sri Lanka within national parks, sanctuaries, rainforests, wetlands, and community managed ventures. His definition underscores sustainable forest management, livelihood enrichment, and biodiversity conservation, while stressing good governance, accountability, and transparency. Importantly, he emphasizes community participation and ethical practices as mechanisms to balance tourism development with forest protection.

From a broader disciplinary lens, Xu et al. (2022) frame ecotourism as an interdisciplinary subject that has evolved through three phases: human disturbance, ecosystem services, and sustainable development. Their scientometric review reveals how ecotourism research reflects growing global attention to ecological environments, positioning it within the wider framework of sustainable development and the evolution of scientific disciplines.

Complementing these views, Hussain (2022) defines ecotourism as responsible travel that benefits both the environment and local communities, distinguishing it from general nature-based tourism. He notes that ecotourism has been referred to as "soft tourism," "responsible tourism," "green tourism," and "alternative tourism." Despite its small scale and seasonal character, Hussain emphasizes its potential to deliver economic, cultural, and environmental advantages when practiced ethically, provided that indigenous host communities receive tangible benefits.

While definitions highlight the essence of ecotourism, scholars also stress the importance of implementation. Aladag et al. (2020) describe strategy implementation in hospitality and tourism as the critical process of executing formulated strategies to achieve organizational objectives. They argue that although strategic planning has received more scholarly attention, implementation remains essential for performance outcomes, requiring effective governance, accountability, and systematic management practices.

Similarly, Haid et al. (2021) define sustainability implementation in destination management as a nonlinear and non-synchronous process shaped by external drivers, stakeholder communication, and managerial discretion. They observe that destination managers often prioritize economic initiatives, but effective implementation requires balancing social, environmental, and governance dimensions to align with sustainable development goals.

At a conceptual level, Lutkevich and Ehrens (2022) define implementation as the execution or practice of a plan, method, design, idea, model, specification, standard, or policy. It is the action that follows preliminary thinking, ensuring that concepts move into reality. In the context of ecotourism, this means translating conservation strategies and tourism plans into tangible practices.

In line with this, Rivera et al. (2022) emphasize implementation as the application of national standards and conservation strategies to prevent unsustainable operations and environmental degradation. They argue that effective conservation must precede tourism development, asserting that without conservation, there can be no ecotourism.
Finally, the Department of Environment and Natural Resources – Biodiversity Management Bureau and Department of Tourism (2014), through the National Ecotourism Strategy and Action Plan 2013–2022, define ecotourism implementation as the process of applying national policies, standards, and conservation strategies to ensure that destinations operate sustainably. This framework highlights the balance between biodiversity protection, community participation, and tourism development, serving as the guiding policy for responsible ecotourism in the Philippines.

On Practices of Ecotourism
Ecotourism practices in the Philippines highlight sustainable travel that provides meaningful, nature based experiences while preserving the environment and uplifting local communities. Watanabe (2025) emphasizes eco friendly destinations such as marine sanctuaries and mountain villages, showcasing biodiversity while promoting conservation and responsible tourism.

At the global level, eco friendly travel has been framed as responsible practices attentive to environmental, social, and economic sustainability. Green (2022) explains that ecotourism, as a subset of green travel, specifically involves responsible travel to natural areas where conservation and community benefits are prioritized.

Regional applications demonstrate how ecotourism practices integrate conservation with livelihood support. Blanton et al. (2024) characterize mangrove ecotourism in Southeast Asia as conservation driven, combining biodiversity protection, climate resilience, and community livelihoods. Activities such as boat tours, mangrove planting, kayaking, and snorkeling serve both recreational and ecological purposes, while ensuring respect for indigenous land rights and equitable benefit sharing.

From a principles based perspective, Greene (2025) presents ecotourism practices as grounded in three pillars: environmental conservation, cultural sensitivity, and community involvement. These practices distinguish ecotourism from mass tourism by minimizing environmental footprints, respecting local traditions, and ensuring equitable benefits for host communities.

In sustainability research, Ramos and Byrne (2024) portray ecotourism practices as a testing ground for balancing economic, social, and environmental pillars. They argue that ecotourism serves both as a conceptual framework and a practical approach, where policy oriented practices, standardization, and benchmarking evaluate whether tourism achieves “strong” or “weak” sustainability.

Theoretical perspectives also enrich the understanding of tourism practices. Bargeman and Richards (2020) apply practice theory, emphasizing group interactions and emotional responses in shaping participation. Their work shows how individuals shift between practices, offering insights into the dynamics and complexity of tourism systems.

Similarly, Santiago and Dueñas (2022) describe tourism practices as behaviors and activities carried out in destinations, encompassing economic, cultural,

political, and technological aspects. They highlight the importance of recognizing sociocultural diversity and ensuring full participation of local actors to strengthen territorial consolidation through tourism.

Ren et al. (2018) further examine tourism practices through practice theory, presenting them as everyday activities that shape how tourism is enacted in specific contexts. They argue that tourism practices are "learnt" alongside other social practices, highlighting processes of change, learning, and innovation.

Finally, adaptive strategies illustrate how ecotourism practices evolve to meet sustainability challenges. Lukacs de Pereny, Guillén, and Young (2025) conceptualize sustainable practices in Peruvian Amazon ecolodges as balancing ecological protection with financial resilience. Managers employ cooperation, digital transformation, diversification, and scientific tourism to sustain operations, though high certification costs, weak infrastructure, and unregulated tourism remain barriers. They call for stronger public policies to reinforce environmental governance and embed sustainable tourism in national recovery strategies.

On Sustainability of Ecotourism

Ecotourism has increasingly been framed as a form of sustainable tourism that integrates environmental conservation, economic growth, and cultural preservation. Patil and Pattanshetti (2024), through a systematic review of 250 studies, demonstrated that ecotourism contributes to conservation funding and awareness, supports local businesses, and preserves heritage. However, they cautioned that poor management can lead to risks such as wildlife disturbance, emphasizing that effective governance, community involvement, and robust monitoring systems are critical to ensuring ecotourism's positive role in sustainable development.

Building on this, Cossengue et al. (2025) portray ecotourism as a transformative force that generates economic, social, cultural, and environmental benefits while mobilizing community participation. Their review clarified that ecotourism enhances local development through added value in products and services, investment returns, and job creation, while also fostering cultural exchange and conservation. They argue that the degree of community involvement is decisive in determining the sustainability and long-term impact of ecotourism initiatives.

From an innovation perspective, Yan et al. (2025) conceptualize ecotourism as a driver of economic sustainability in local communities, strengthened through technological innovation. Their study shows that ecotourism directly enhances community sustainability while also stimulating innovation. The development of green industry systems and the accumulation of social capital amplify ecotourism's positive impact, particularly in regions with robust digital infrastructure, stable ecological environments, and higher human capital.

At the disciplinary level, Xu et al. (2023) characterize ecotourism as a rapidly evolving interdisciplinary field situated within sustainable development research. Their scientometric review traced its progression through three phases human disturbance, ecosystem services, and sustainable development positioning ecotourism within Shneider's third stage of scientific discipline evolution. They highlight that ecotourism spans multiple disciplines and require ongoing research to address environmental challenges while advancing conservation and sustainability goals.

The broader concept of sustainability itself has been clarified by scholars. Ruggerio (2021) defines sustainability as an evolving framework for scientific inquiry and environmental governance, distinct from the more contested notion of sustainable development. While sustainable development has been criticized for its imprecise meaning, sustainability has consolidated as a guiding paradigm in environmental sciences. Ruggerio also acknowledges alternative approaches such as degrowth and buen vivir that challenge conventional development models.

In the tourism sector, sustainability practices have been linked to social responsibility. Baena and Cerviño (2024) define tourism in the era of sustainability as a dual process that fosters economic growth while mitigating environmental impacts.

They clarify that destination choices depend on factors such as host country image, quality of life, purchasing power parity, and distance, framed within Stakeholder Theory.

Environmental responsibility is also central to tourism sustainability. Dolnicar and Greene (2024) define environmentally sustainable tourism as a sectoral responsibility to reduce carbon emissions, noting that tourism contributes around 8% of global emissions and continues to grow. Despite extensive research, they argue that practical action remains limited, stressing the urgent need to change stakeholder behavior to achieve meaningful sustainability outcomes.

In the Philippine context, Rivera et al. (2022) emphasize that effective conservation must precede tourism development, arguing that without safeguarding the natural environment, ecotourism cannot exist. They highlight that the National Ecotourism Strategy requires clear definitions, regional planning, and adherence to national standards to prevent unsustainable practices. Biodiversity protection, they argue, is not only a prerequisite for tourism growth but also a cornerstone for community development and long-term sustainability.

Legislation further reinforces sustainability in ecotourism. Republic Act No. 11365 (2019), known as the Balanga Wetland and Nature Park Responsible Ecotourism Act, declares the Balanga Wetland and Nature Park in Bataan as a responsible, community based ecotourism zone. It ensures biodiversity conservation, livelihood generation, and sustainable tourism practices, embedding sustainability into local governance.

Finally, sustainability in tourism is shaped by policy frameworks. Tunçel et al. (2025) define the relationship between tourism and environmental sustainability as a bidirectional process in which green policies influence tourism demand and expenditures. Indicators such as carbon emissions, ecological footprint, and policy stringency affect tourist arrivals and spending, underscoring the role of tailored environmental policies in promoting sustainable tourism development. Similarly, Baloch et al. (2022) define sustainable ecotourism as a framework balancing business growth with environmental conservation, moderated by government support and policy interventions. Their model emphasizes policy driven conservation to ensure ecological protection without compromising local economic viability and social wellbeing.

Related Literature

Foreign Studies

In developing economies, ecotourism has been studied as both a driver of growth and a challenge for sustainability. Shang et al. (2023) investigated the relationship between ecotourism, climate change, and environmental policies across 40 countries from 2010 to 2021. Their study confirmed that improvements in green governance and globalization indices significantly increase ecotourism growth, while carbon emissions and geopolitical risks pose challenges to sustainability. They recommended practical strategies such as green financing markets, virtual tourism, and government incentives to strengthen ecotourism development and resilience in developing nations.

In Pakistan, Baloch et al. (2022) examined the relationship between tourism development and environmental sustainability to propose a framework for sustainable ecotourism. Their findings revealed that while tourism generated socio economic benefits such as employment, business opportunities, and infrastructure growth, it also led to environmental degradation through pollution, land overuse, and cultural intrusion. They suggested a policy driven model that balances economic viability with ecological protection and social well being, highlighting the importance of governance in ecotourism implementation.

In Southern Europe, Cossengue et al. (2025) conducted a comprehensive review of ecotourism in Spain and Portugal, analyzing its economic, social, cultural, and environmental impacts. Their study emphasized that ecotourism mobilizes added value in products and services, generates investment returns, and creates jobs, while also fostering cultural exchange and conservation. They highlighted the indispensable role of community participation in ensuring the success of ecotourism practices, noting

that the degree of local involvement determines sustainability and long term benefits.

In Slovenia, Sweden, and Costa Rica, Đorđević et al. (2024) examined eco friendly tourism destinations by analyzing strategies for implementing sustainable practices. Their study highlighted Ljubljana and Gothenburg as successful urban models of sustainability, while Costa Rica was presented as a global case of nature based tourism. The findings emphasized that sustainable tourism requires collaboration among residents, public and private sectors, and other stakeholders. They concluded that environmentally friendly strategies are not only ethical but also a strategic imperative for competitiveness and resilience worldwide.

In Ecuador, Vergara Romero, Durán Román et al. (2025) analyzed the role of sustainable destination management in fostering ecotourism entrepreneurship as a response to overtourism. Surveying 325 entrepreneurs, they found that integrating economic, social, and environmental pillars of sustainability strengthens business success, community development, and environmental stewardship. They emphasized that collaborative innovation and adaptive strategies enable entrepreneurs to harmonize growth with responsible tourism, producing lasting positive impacts for destinations and local communities.

In India, Patil and Pattanshetti (2025) conducted a systematic review on the role of ecotourism in sustainable development, analyzing 250 peer reviewed studies published over two decades. Their findings showed that ecotourism contributes significantly to environmental conservation, economic growth, and cultural preservation, while also posing risks such as wildlife disturbance and habitat degradation if poorly managed. They stressed the importance of effective governance, community involvement, and policy development in maximizing ecotourism's positive impacts.

In Central Asia, Shalamaiuly Asqarbek et al. (2023) reviewed the problems and prospects of sustainable ecotourism development in Kazakhstan. Their study, aligned with the state program for tourism development (2019–2025), identified challenges such as weak government support, inadequate infrastructure, limited local knowledge, and a shortage of specialists in ecotourism services. Despite these constraints, they emphasized that ecotourism contributes positively to economic, ecological, and sociological development, directly supporting sustainability goals.

Also in India, Kumar et al. (2024) conducted a holistic assessment of ecotourism's environmental and socioeconomic effects toward sustainable development. Their study revealed positive impacts such as biodiversity conservation, local economic development, and community empowerment, but also risks including environmental degradation, economic leakage, and social disruption. They emphasized that careful planning, community involvement, environmental education, and long term monitoring are essential strategies to minimize negative effects and maximize sustainability outcomes.

In Africa, Xaba and Adanlawo (2024) reviewed the potential role of ecotourism in South Africa's sustainable development. Their study revealed that limited community access to ecotourism opportunities restricts its contribution to sustainability. They concluded that reducing social inequality and motivating local communities to protect their environment and culture are essential for ecotourism to succeed. They emphasized that ecotourism initiatives can only benefit local communities if they are actively involved in the planning, execution, and control of projects.

Local Studies

In the Philippines, ecotourism implementation has been examined through national strategies and policy frameworks. Rivera et al. (2022) stressed that biodiversity conservation must precede tourism development, arguing that without conservation, ecotourism cannot exist. They highlighted the importance of regional planning, adherence to national standards, and stakeholder engagement to prevent unsustainable practices. Their study concluded that effective conservation is essential for sustainable tourism, ensuring ecotourism supports economic growth, environmental protection, and community empowerment.

At the destination level, Belarmino and Janaban (2023) examined marketing strategies, competitiveness, and sustainability practices of tourist sites in Tangalan, Aklan. Their study found that most destinations applied effective marketing, showed high competitiveness, and practiced sustainability measures. Results emphasized that aligning strategies with tourist needs enhances services, preserves natural and cultural environments, and boosts profitability. They concluded that marketing, sustainability, and competitiveness collectively drive customer satisfaction, business success, and community growth.

Community perspectives have also been explored. Ruiz (2025) examined barriers and opportunities in leveraging ecotourism for sustainable community development at Mount Daraitan and Wawa Dam. Using data from 96 respondents, the study identified operational, resource, and marketing constraints, emphasizing the need for site-based assessments and stakeholder engagement. Ruiz concluded that adaptive, evidence-based strategies and further research are vital to strengthen ecotourism management and ensure sustainable outcomes.

National case studies highlight both successes and challenges. Mendoza, Tan, and Hood (2024) showed that ecotourism fosters environmental awareness, responsible behavior, and community conservation in sites like Tubbataha Reefs. However, issues in Boracay displacement, degradation, and weak compliance undermine sustainability. They concluded that local engagement, minimizing impacts, and promoting awareness are vital for long-term benefits.

Resident engagement has been another focus. Aguilar and Domasian (2023) investigated ecotourism perception and engagement among residents of a nature city in the Philippines. Using the Shallow–Deep Model of Ecotourism and the Classification Framework on Ecotourism, they found that residents demonstrated strong positive perspectives and deep engagement, reflecting their role as advocates for ecotourism given their proximity to rich natural resources. The authors concluded that these insights can guide managers and educators in designing effective environmental education programs that strengthen sustainable tourism practices.

Local government initiatives have also been assessed. Sarinas, Andrada, and Bagarinao (2023) conducted a gap analysis of sustainable tourism in the LGU managed TANAW de Rizal Park. Findings revealed that while the park generally conforms to ecotourism attributes, gaps remain in community involvement, capacity building, and environmental education. They concluded that addressing these gaps will provide clearer direction for developing TANAW Park into a sustainable ecotourism destination that balances socio economic development with environmental conservation.

Regional development strategies were explored by Blanza (2022), who studied emerging ecotourism destinations in Western Visayas, including Bakhawan Ecopark, Tibiao, Capiz Ecopark, Taklong Island, and Mariit Ecopark. Findings revealed varying levels of implementation of the National Ecotourism Strategy and highlighted operational challenges such as resource limitations, management gaps, and marketing constraints. The study proposed a five year roadmap to strengthen planning strategies, enhance stakeholder collaboration, and ensure sustainable development in the region.

Case studies of LGU managed projects further illustrate sustainability challenges. Brillo and Simondac-Peria (2021) examined the Tayak Adventure, Nature and Wildlife (TANAW) Park in Rizal, Laguna. Their study found that while the initiative began as a top-down project, long-term sustainability relied on bottom-up community participation. Financial sustainability emerged as a major challenge, requiring continued government support and diversified programming. They concluded that TANAW Park contributes to local governance and community development, but its success depends on adaptive strategies and stronger community engagement.

Coastal destinations have also been studied. Templo et al. (2024) studied community-based coastal tourism in Aklan, highlighting initiatives such as mangrove planting, marine sanctuary conservation, and clean-up drives. Their findings showed diversified livelihood opportunities through

fishermen's employment, resort collaboration, and cultural events. Despite challenges like deforestation and declining fish catch, proactive interventions by LGUs and communities demonstrated resilience. The authors concluded that sustained collaboration and adaptive strategies are vital for the long-term sustainability of coastal ecotourism.

Finally, Masa et al. (2024) assessed the tourism carrying capacity of the Olo Olo Mangrove Forest and Eco Park in Batangas. Using Boullon's Model and the Limits of Acceptable Change framework, they found that the site remains well within sustainable limits, with current visitor numbers far below ecological thresholds. The study emphasized the importance of continuous monitoring and adaptive management to balance ecological integrity with tourism growth. `

Relevance of the Review of Related Literature

The conceptual literature and previous studies reviewed in this research were highly relevant and aligned with the present investigation, as they emphasized ecotourism implementation, practices, and sustainability. These themes were explored in the works of Aladag (2020), who highlighted governance and accountability in tourism strategy implementation; Greene (2025), who identified conservation, cultural sensitivity, and community involvement as pillars of ecotourism practices; and Patil and Pattanshetti (2024), who stressed the importance of governance and community participation in sustaining ecotourism development.

Foreign studies further contextualized these issues. Shang et al. (2023) examined ecotourism in developing economies, showing how green governance and globalization drive growth while carbon emissions and geopolitical risks hinder sustainability. Cossengue et al. (2025) analyzed Spain and Portugal, emphasizing community participation as key to long term ecotourism benefits. Đorđević et al. (2024) studied Slovenia, Sweden, and Costa Rica, concluding that collaboration among stakeholders is essential for sustainable tourism competitiveness.

Local studies provided insights into the Philippine context. Rivera et al. (2022) emphasized that biodiversity conservation must precede tourism development, linking implementation to sustainability outcomes. Belarmino and Janaban (2023) investigated marketing strategies and sustainability practices in Tangalan, Aklan, showing their collective impact on competitiveness and community growth. Mendoza, Tan, and Hood (2024) highlighted both successes, such as Tubbataha Reefs, and challenges, such as Boracay, underscoring the need for local engagement and environmental awareness in ecotourism practices.

Together, these conceptual, foreign, and local studies provided essential insights and empirical evidence that informed the present study's framework. They identified key variables such as governance, community participation, marketing strategies, and environmental conservation, all of which shaped ecotourism implementation, practices, and sustainability. Ultimately, this body of literature offered a strong foundation that enabled the researcher to refine the research problem, strengthen the analytical framework, and ensure that the investigation into ecotourism in the Philippines was grounded in credible and contextually relevant scholarship.

III. METHODOLOGY

This section includes and discusses the research design, respondents of the study, reliability testing, validity of the instrument, data gathering instrument, data gathering procedure and statistical tools used.

Research Design

Quantitative method of research was applied in this study employing descriptive – correlational research design. Quantitative research is characterized by deductive approaches to the research process aimed at proving, disproving, or lending credence to existing theories. This type of research involves measuring variables and testing relationships between variables in order to reveal patterns, correlations, or causal relationships. The values underlying quantitative research include neutrality, objectivity, and the acquisition of a sizeable scope of knowledge. This approach is generally appropriate when the primary purpose is to explain or evaluate (Leavy, 2017).

According to Saunders, Lewis, and Thornhill (2019), the purpose of descriptive research is to gain an accurate profile of events, persons or situations. Descriptive research may be an extension of a piece of exploratory research or a forerunner to a piece of explanatory research. It is necessary to have a clear picture of the phenomenon on which you wish to collect data prior to the collection of the data. This design is appropriate for this study since the study wanted to determine the ecotourism implementation, practices and sustainability in the province of Antique.

Respondents of the Study

The researcher gathered responses from a total of 135 personnel working in ecotourism destinations located in both the northern and southern parts of Antique for the year 2024. These personnel served as the respondents of the study and provided valuable insights into the research objectives. The researcher employed convenience sampling, which allowed for the inclusion of respondents who were readily accessible and willing to take part in the survey. The details of the respondents are presented in Table 1.

Table 1. The Distribution of Respondents

Location	N	%
North	95	70.4
South	40	29.6
Total	135	100.00%

Data Gathering Instrument

A modified researcher made questionnaire, adapted from existing literature, was employed as the primary data gathering instrument. The questionnaire consisted of four (4) parts, each designed to address specific aspects of the study. Part I asked for the profile of the respondents and contained items related to their personal information. Part II was intended to assess the extent of ecotourism implementation within the province. Part III examined the prevailing ecotourism practices, while Part IV was designed to measure the level of ecotourism sustainability.

For ecotourism practices, the researcher utilized a questionnaire consisting of fifteen (15) items that were answerable by "Yes" or "No" and were subsequently ranked from first to fifteenth based on the frequency of responses. In addition, the levels of ecotourism implementation and sustainability were described using a standardized scale, with each numerical value accompanied by its corresponding description to ensure clarity and consistency in interpretation.

Ecotourism Implementation

Scale of Means	Description	Interpretation
4.21 – 5.00	To a Very Great Extent	All ecotourism destinations in the province of Antique enforce environmental safeguards, manage resources sustainably, preserve cultural heritage, and comply with government tourism policies.
3.41 – 4.20	To a Great Extent	Most ecotourism destinations in the province of Antique enforce environmental safeguards, manage resources sustainably, preserve cultural heritage, and comply with government tourism policies.
2.61 – 3.40	To a Moderate Extent	Some ecotourism destinations in the province of Antique enforce environmental safeguards, manage resources sustainably, preserve cultural heritage, and comply with government tourism policies.
1.81 – 2.60	To a Low Extent	Few ecotourism destinations in the province of Antique enforce environmental safeguards, manage resources sustainably, preserve cultural heritage, and comply with government tourism policies.
1.00 – 1.80	To a Very Low Extent	Very few ecotourism destinations in the province of Antique enforce environmental safeguards, manage resources sustainably, preserve cultural heritage, and comply with government tourism policies.

On the other hand, the level of ecotourism sustainability was described using the following scale with its corresponding description.

Scale of Means	Description	Interpretation
4.21 – 5.00	Very High	All ecotourism destinations in the province of Antique operate to secure long-term business viability, minimize operational risks, manage resources responsibly, and protect social and cultural assets.
3.41 – 4.20	High	Most ecotourism destinations in the province of Antique operate to secure long-term business viability, minimize operational risks, manage resources responsibly, and protect social and cultural assets.
2.61 – 3.40	Moderate	Some ecotourism destinations in the province of Antique operate to secure long-term business viability, minimize operational risks, manage resources responsibly, and protect social and cultural assets.
1.81 – 2.60	Low	Few ecotourism destinations in the province of Antique operate to secure long-term business viability, minimize operational risks, manage resources responsibly, and protect social and cultural assets.
1.00 – 1.80	Very Low	Very few ecotourism destinations in the province of Antique operate to secure long-term business viability, minimize operational risks, manage resources responsibly, and protect social and cultural assets.

Validity of the Research Instrument

The instrument used for gathering data on ecotourism implementation, practices, and sustainability was a modified researcher made questionnaire adopted from literature submitted for expert validation with the assistance of research specialists and a statistician. The validation process followed the Good and Scates Criteria, which emphasized clarity, relevance, substance, appropriateness, and comprehensiveness.

Panel validation was employed to establish the instrument's validity. Three subject matter experts reviewed each item to determine whether it was appropriate or required revision. Their comments, suggestions, and recommendations were solicited, collated, and systematically incorporated to refine question wording, improve structural consistency, and strengthen the instrument's ability to generate accurate, reliable, and meaningful data. These revisions ensured that the tool effectively supported the study's objectives by capturing valid insights into ecotourism implementation, practices, and sustainability in the Province of Antique.

Reliability of the Research Instrument

To determine the reliability of the questionnaire designed to measure ecotourism implementation, practices, and sustainability, the instrument was pilot tested among thirty (30) respondents from the Province of Iloilo who were not part of the actual study population. The pilot test refined the questionnaire for clarity, ease of completion, and accurate recording of responses during the main data collection.

The data from the pilot test were tallied and analyzed using Cronbach's alpha, a statistical method that evaluates internal consistency across related items. According to Saunders, Lewis, and Thornhill (2019), alpha values range from 0 to 1, with 0.80 or higher considered acceptable. George and Mallery (2003) further suggest that values above 0.90 indicate excellent reliability.

The results demonstrated high internal consistency across all constructs. The Ecotourism Implementation scale yielded a Cronbach's alpha of 0.90, the Practices scale registered 0.92, and the Sustainability scale produced 0.94. These findings confirmed that the questionnaire was a highly reliable tool for assessing the intended dimensions of the study. Hence, the instrument used in this research was

consistent and dependable for evaluating ecotourism implementation, practices, and sustainability in the Province of Antique.

Data Gathering Procedure

After the validity and reliability of the questionnaire were established, the instrument was reproduced and prepared for distribution. Formal permission was secured from the appropriate authorities to conduct the study among the target respondents. A list of ecotourism personnel was obtained and properly profiled to determine and reach the required number of respondents from destinations in the Province of Antique.

The researcher personally administered the questionnaire to ensure proper conduct throughout the research process. The instrument was distributed to gather the necessary data and information on ecotourism implementation, practices, and sustainability. Respondents' names were not recorded in any part of the study, and participants were assured that their privacy and confidentiality would be protected and that the information collected would be used solely for research purposes.

The collected responses were carefully documented, tallied, tabulated, analyzed, and statistically treated using appropriate tools such as SPSS and Microsoft Excel. Proper documentation of dates and materials used in the study was maintained to ensure transparency and avoid issues of plagiarism or misrepresentation. A communication letter was also presented to individuals who assisted in the validation and verification of the questionnaire items, ensuring that the final instrument was well organized, ethically sound, and suitable for the study's objectives.

Statistical Tools Used

This study employed frequency count, percentage, mean, Chi Square, Mann Whitney U test, Kruskal Wallis H test, and Spearman's rho to analyze the data.

Frequency Count. This was used to determine the distribution of respondents based on educational attainment, length of service, type of ecotourism, years of business operation, and location. It also identified the frequency of responses for each item in the questionnaire.

Percentage. This was applied to present the proportion of respondents within each category, offering a comparative view of the sample composition and the rate index of the given variables.
Mean. This was employed to determine the overall assessment of the respondents' perspectives when taken as a whole and when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location.
Chi Square. This was used to test associations between categorical variables such as educational attainment, type of ecotourism, and location, and to identify significant differences in responses.

Mann Whitney U test. This was used to determine whether there were significant differences in the respondents' assessments when classified according to categories with two groups, such as educational attainment or length of service.

Kruskal Wallis H test. This was applied to assess significant differences in the respondents' assessments when classified according to categories with more than two groups, such as type of ecotourism or years of business operation.

Spearman's rho. This was utilized to measure the significant relationships among the study's key variables, specifically ecotourism implementation, practices, and sustainability.

All statistical analyses were conducted at the 0.05 level of significance to ensure statistical reliability.

IV. RESULTS AND DISCUSSIONS

This part presents the results summary, discussions of conclusions and recommendations of this study.

Summary

The study assessed ecotourism implementation, practices, and sustainability in the province of Antique, Antique, Philippines for the year 2024.
Specifically, this study sought to answer the following questions:

1. What is the profile of respondents in terms of educational attainment, length of service, type of ecotourism, years of business operation, and location?
2. What is the extent of ecotourism implementation as assessed by the respondents when taken as a whole and when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
3. What are the ecotourism practices as assessed by the respondents when taken as a whole and when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
4. What is the level of ecotourism sustainability as assessed by the respondents when taken as a whole and when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
5. Are there significant differences in the level of ecotourism implementation as assessed by the respondents when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
6. Are there significant differences in ecotourism practices as assessed by the respondents when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
7. Are there significant differences in the level of ecotourism sustainability as assessed by the respondents when classified according to educational attainment, length of service, type of ecotourism, years of business operation, and location?
8. Are there significant relationships among the ecotourism implementation, practices and sustainability?

Data were gathered in September 2024 from ecotourism destinations located in both the southern and northern parts of Antique. The respondents were selected through convenience sampling. A researcher made questionnaire, modified from existing literature and validated using the Good and Scates criteria, was employed to collect the data. The reliability of the instrument was pilot tested among ecotourism personnel in the province of Iloilo. Statistical tools such as frequency, percentage, mean, rank, chi square, Mann–Whitney U, Kruskal–Wallis H, and Spearman's rho were applied, with computations processed through SPSS at the 0.05 level of significance.

V. FINDINGS

1. The profile of the 135 ecotourism personnel showed that most were doctorate degree holders (75.6%), followed by bachelor's graduates (23.7%) and a small proportion with master's degrees (0.7%). In terms of service, two thirds (66.7%) had five years and below, while one third (33.3%) had six years and above. Nearly all respondents (96.3%) were engaged in nature based ecotourism, with only 3.0% in cultural and 0.7% in adventure activities. By business operation, the majority (80.0%) reported six years and above, while 20.0% had five years and below. Geographically, most were concentrated in the northern part of Antique (70.4%), with 29.6% in the south.
2. The extent of ecotourism implementation was rated "To a Great Extent" with an overall mean of 4.19. The highest indicators included formal waste management plans (M = 4.54), tourist participation in environmental activities (M = 4.47), and enforcement of waste regulations (M = 4.36). By classification, master's degree holders (M = 4.67) and bachelor's graduates (M = 4.36) rated implementation "To a Very Great Extent," while doctorate holders rated it lower (M = 4.13). Longer-serving personnel (M = 4.21) assessed implementation more positively than newer ones (M = 4.18). Cultural tourism respondents posted the highest mean (M = 4.80), followed by nature-based (M = 4.18) and adventure tourism (M = 3.73). Newer enterprises (M = 4.41) rated implementation more strongly than longer-established ones (M = 4.13). By location, southern destinations (M = 4.35) were rated higher than northern ones (M = 4.12).
3. Ecotourism practices were rated "Mostly Practiced" overall, with conservation of natural resources ranked 1st (135; 100%), habitat protection 2nd (133; 98.5%), and tree planting 3rd

(132; 97.8%). Coastal clean ups and plastic free tourism ranked 4th (130; 96.3%), while water management and eco events tied at 5th (126; 93.3%). Waste management ranked 7th (125; 92.6%), "Leave No Trace" 8th (123; 91.1%), and biodiversity education/local food support tied at 9th (119; 88.1%). Cultural festivals ranked 11th (118; 87.4%), respect for local integrity 12th (117; 86.7%), eco transport and low impact accommodations tied at 13.5th (107; 79.3%), and support for artisans ranked lowest at 15th (106; 78.5%). By educational attainment, bachelor's holders rated conservation, tree planting, and habitat protection highest (32; 100%), while low impact accommodations (23; 71.9%) were lowest; master's holders recorded full compliance in several practices (1; 100%) but none in artisan support (0; 0%); doctorate holders rated conservation highest (102; 100%) but artisan support lowest (77; 75.5%). By length of service, those with ≤5 years rated conservation at 90 (100%) and tree planting at 87 (96.7%), while artisan support was lowest (67; 74.4%); those with ≥6 years rated conservation and tree planting at 45 (100%) but artisan support lower at 39 (86.7%). By type, nature based respondents rated conservation at 130 (100%) and tree planting at 127 (97.7%), cultural respondents rated most practices at 4 (100%) except eco transport and accommodations at 3 (75%), while adventure respondents fully adopted all practices (100%). By years of business operation, newer enterprises rated conservation and tree planting at 27 (100%) but low impact accommodations at 20 (74.1%), while older enterprises rated conservation at 108 (100%) but artisan support lower at 83 (76.9%). By location, northern Antique respondents rated conservation and tree planting at 95 (100%) but artisan support at 70 (73.7%), while southern Antique respondents rated conservation and endemic species protection at 40 (100%) but cultural festivals lower at 33 (82.5%).

4. The level of ecotourism sustainability was rated "High" overall with a mean of 4.08. The strongest practices included reinvesting revenue into local conservation projects (M = 4.30, "Very High"), responsible waste disposal programs (M = 4.27, "Very High"), and providing tourists with information on community contributions (M = 4.25, "Very High"). Moderately rated items were the use of locally produced goods (M = 4.19), organic farming (M = 4.16), heritage site conservation (M = 4.15), and support to local businesses (M = 4.14). Lower ratings were noted for reducing disposable plastics and employee training (M = 4.07), energy consumption (M = 4.00), eco-friendly souvenirs (M = 3.99), environmental education programs (M = 3.93), and digital tickets and educational materials (M = 3.90). By classification, bachelor's degree holders rated sustainability "Very High" (M = 4.31), while master's (M = 4.20) and doctorate holders (M = 4.01) rated it "High." Both shorter (M = 4.08) and longer service groups (M = 4.08) rated sustainability "High." Cultural tourism respondents posted the highest mean (M = 4.80, "Very High"), while nature-based (M = 4.06) and adventure tourism (M = 4.00) rated it "High." Newer enterprises rated sustainability "Very High" (M = 4.34), while longer-established ones rated it "High" (M = 4.02). By location, southern destinations (M = 4.11) and northern destinations (M = 4.07) both rated sustainability "High."
5. There were significant differences in the level of ecotourism implementation when classified according to educational attainment, type of ecotourism, years of business operation, and location, but no significant difference by length of service. By educational attainment, bachelor's holders (mean rank = 51.97), master's holders (25.00), and doctorate holders (73.45) differed significantly (H = 8.613, p = 0.013), with doctorate holders evaluating implementation more strongly. By type of ecotourism, adventure respondents (116.00) assessed implementation highest compared to nature based (69.31) and cultural respondents (13.38), showing a significant difference (H = 9.506, p = 0.009). By years of business operation, longer established enterprises (73.40) rated implementation more strongly than newer ones (48.38), with a significant difference (U = 2750.000, p = 0.015). By location, northern respondents (72.48) evaluated implementation more strongly than southern respondents (57.35), also significant (U = 2326.000, p = 0.040). Meanwhile, length of service showed no significant difference (U = 2069.000, p = 0.837).

6. There were no significant differences in ecotourism practices when classified according to educational attainment ($x^2 = 5.12$, $p = 0.077$), type of ecotourism ($x^2 = 1.82$, $p = 0.401$), years in business operation ($x^2 = 0.82$, $p = 0.843$), and location ($x^2 = 1.75$, $p = 0.536$). However, a significant difference was observed when classified according to length of service ($x^2 = 6.50$, $p = 0.005$).
7. There were significant differences in the level of ecotourism sustainability when classified according to educational attainment, type of ecotourism, and years of business operation, but no significant differences by length of service or location. By educational attainment, bachelor's holders (mean rank = 47.22), master's holders (48.50), and doctorate holders (74.71) differed significantly ($H = 12.36$, $p = 0.002$), with doctorate holders evaluating sustainability more strongly. By type of ecotourism, adventure respondents (80.50) assessed sustainability highest compared to nature based (69.65) and cultural respondents (11.13), showing a significant difference ($H = 8.84$, $p = 0.012$). By years of business operation, longer established enterprises (74.31) rated sustainability more strongly than newer ones (42.77), with a significant difference ($H = 15.452$, $p = 0.001$). Meanwhile, length of service ($U = 2130.000$, $p = 0.623$) and location ($U = 1950.000$, $p = 0.809$) showed no significant differences.
8. There were significant relationships among ecotourism implementation, practices, and sustainability. Implementation and practices showed a moderate positive correlation ($\rho = .309$, $p = .000$), indicating that stronger implementation is linked with more consistent practices. Implementation and sustainability revealed a strong positive correlation ($\rho = .813$, $p = .000$), showing that effective implementation is closely associated with higher sustainability outcomes. Practices and sustainability also showed a moderate positive correlation ($\rho = .304$, $p = .000$).

VI. CONCLUSIONS

Based on the findings, the following conclusions are drawn:

1. Ecotourism personnel in Antique are highly educated, primarily engaged in nature-based activities, concentrated in northern destinations, and supported by long established enterprises, reflecting a workforce with strong academic and professional foundations.
2. Ecotourism destinations consistently enforce environmental safeguards, manage resources responsibly, preserve cultural heritage, and comply with government tourism policies, showing strong alignment with sustainability standards.
3. Conservation, habitat protection, and reforestation are strongly prioritized, while artisan support, eco transport, and low impact accommodations receive less emphasis, indicating that environmental concerns dominate over cultural and lifestyle practices.
4. Ecotourism destinations operate with a focus on long term business viability, risk reduction, responsible resource management, and protection of social and cultural assets, ensuring resilience and sustainability.
5. Assessments of ecotourism implementation depend more on education, type of tourism activity, business maturity, and location than on length of service, indicating that institutional and contextual factors shape implementation more strongly than individual tenure.
6. Length of service significantly influences engagement in ecotourism practices, with longer serving personnel applying practices more consistently, while education, type of tourism, business maturity, and location do not create differences.
7. Assessments of sustainability are shaped by educational background, type of tourism activity, and business maturity, indicating that academic preparation and institutional experience strengthen sustainability outcomes, while service tenure and geographic location do not affect evaluations.
8. Ecotourism implementation, practices, and sustainability are positively interconnected, with implementation serving as the strongest driver of sustainability, while consistent practices moderately reinforce ecological protection and community benefits.

VII. RECOMMENDATION

The following recommendations are formulated based on the findings and conclusions of the study.

1. Department of Tourism Officials may strengthen monitoring and evaluation systems to ensure destinations consistently enforce waste management, resource conservation, and compliance with tourism policies. They may also expand training programs that integrate cultural heritage preservation with environmental safeguards to balance ecological and cultural priorities.
2. Department of Agriculture Officials may promote organic farming, biodiversity conservation, and sustainable food production within ecotourism destinations. They may provide technical assistance and incentives to farmers and operators to integrate ecofriendly agricultural practices into tourism activities.
3. Local Government Officials may facilitate municipal level initiatives that support artisan industries, eco transport, and low impact accommodations. Since environmental practices are already prioritized, LGUs can focus on strengthening cultural and lifestyle practices to ensure holistic sustainability.
4. Ecotourism Destination Operators may adopt adaptive strategies that secure long term business viability, minimize risks, and diversify income sources. They may invest in programs that complement conservation, such as artisan support and cultural promotion, to broaden the benefits of ecotourism.
5. Tourists may actively participate in conservation activities, respect local integrity, and support ecofriendly products and services. They may be encouraged to choose destinations that reinvest revenue into community projects and adopt sustainable practices, thereby reinforcing ecological and social benefits.
6. Researchers may continue to study the linkages among implementation, practices, and sustainability, focusing on how institutional maturity and academic preparation influence outcomes. They may also explore innovative strategies that integrate cultural and environmental priorities to strengthen ecotourism models.
7. Future Researchers may expand the scope of studies to include comparative analyses across provinces or regions. They may investigate the long-term impacts of ecotourism on community livelihoods, cultural preservation, and ecological resilience, providing deeper insights for policy and practice.
8. Local Communities may be empowered to take active roles in ecotourism initiatives by participating in conservation, cultural promotion, and sustainable livelihood programs. They may form cooperatives or partnerships with operators to ensure equitable benefits and stronger community ownership of ecotourism projects.

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