

PREFACE TO THE EDITION

The *Eduschool Journal of Tourism and Hospitality Management Studies (EJTHMS)* proudly presents its latest issue, bringing together scholarly contributions that explore one of the defining challenges of contemporary tourism and hospitality the pursuit of sustainability in an era of environmental uncertainty and evolving global expectations. As tourism continues to recover and transform, researchers and practitioners alike are called upon to rethink traditional models of development and embrace innovative approaches that balance economic prosperity, environmental conservation, and social responsibility.

The articles featured in this issue reflect the growing recognition that sustainable tourism extends beyond environmental protection to encompass community empowerment, ethical governance, climate resilience, and authentic stakeholder engagement. Through diverse geographical contexts and interdisciplinary perspectives, the contributors provide valuable insights into how tourism destinations and hospitality enterprises can navigate the complex relationship between growth, conservation, and responsible management.

This issue opens with a comprehensive comparative analysis of community-based ecotourism initiatives across six countries, demonstrating how effective governance, equitable benefit-sharing, and strong community participation contribute simultaneously to biodiversity conservation and rural livelihood enhancement. The study offers compelling evidence that institutional strength and social capital are fundamental drivers of successful and sustainable tourism development.

Addressing one of the most urgent global concerns, the subsequent contribution examines the implementation of net-zero tourism policies within Small Island Developing States. By analysing the challenges and opportunities associated with carbon-neutral tourism transitions, the study provides important policy insights into balancing environmental commitments with economic dependence on international tourism.

Behavioural dimensions of sustainability are further explored through an investigation into green nudging strategies implemented at African eco-lodges. The findings illustrate how thoughtfully designed interventions can encourage environmentally responsible tourist behaviour while maintaining high-quality visitor experiences, highlighting the importance of behavioural science in sustainable destination management.

The issue also examines the evolving role of eco-certification in advancing carbon neutrality among luxury hotels operating across emerging economies. Through comparative evaluation of internationally recognised certification systems, the research contributes to ongoing discussions regarding the effectiveness of voluntary sustainability standards in promoting genuine environmental performance within the hospitality sector.

Completing this collection is an insightful study on consumer perceptions of greenwashing and genuine sustainability in eco-tourism. By analysing the relationship between environmental authenticity, consumer trust, and destination loyalty, the article underscores the growing importance of transparency, credibility, and responsible communication in building long-term competitiveness within sustainable tourism markets.

Collectively, the contributions in this issue reinforce the idea that the future of tourism and hospitality lies in collaborative governance, evidence-based policy, ethical business practices, and meaningful environmental stewardship. They offer practical recommendations for policymakers, destination managers, hospitality professionals, researchers, and educators committed to advancing resilient and sustainable tourism systems.

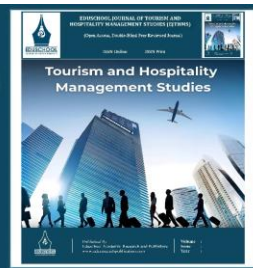
The Editorial Board expresses its sincere appreciation to all authors, reviewers, editorial members, and publishing staff whose dedication and scholarly commitment have made this issue possible. We hope that the research presented herein will inspire further inquiry, encourage informed decision-making, and contribute meaningfully to the continued advancement of tourism and hospitality management scholarship.

Dr. Jacob Bose

Chief Editor

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Community Ecotourism for Biodiversity and Rural Livelihoods: Multi-Country Analysis

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Abstract

Community-based ecotourism (CBET) has been widely promoted as a mechanism for reconciling biodiversity conservation with rural economic development, yet empirical evidence of its effectiveness across diverse geographic and institutional contexts remains fragmented. This study presents a comparative analysis of six CBET projects in Nepal, Costa Rica, Botswana, Indonesia, Peru, and Madagascar, examining how each contributes to biodiversity conservation outcomes and rural livelihood enhancement. Employing the Sustainable Livelihoods Framework as the analytical lens, data were collected through document analysis, key informant interviews (n=48), and community focus groups (n=12) conducted between 2022 and 2023. Results demonstrate that CBET projects with strong community governance structures, equitable revenue-sharing mechanisms, and direct linkages between tourism income and conservation activities achieved the most favourable outcomes across both conservation and livelihood dimensions. Botswana and Costa Rica emerged as the strongest performers, benefiting from established institutional frameworks and decentralised resource management. Madagascar and Peru, despite rich biodiversity endowments, faced persistent challenges related to governance capacity, infrastructure deficits, and market access. The findings suggest that CBET success depends less on natural resource abundance than on the institutional and social capital surrounding the tourism enterprise.

Keywords: - Community-based ecotourism, biodiversity conservation, rural livelihoods, sustainable livelihoods framework, community governance, conservation tourism

I. INTRODUCTION

The relationship between conservation and development has occupied scholars and practitioners for decades, with community-based ecotourism emerging as one of the most widely endorsed strategies for achieving both objectives simultaneously (Stronza et al., 2019). The premise is straightforward: by generating economic benefits from wildlife and natural landscapes, CBET creates financial incentives for local communities to protect rather than exploit their natural surroundings (Mbaiwa & Stronza, 2010). When tourism revenue exceeds what could be earned through extractive activities such as logging, poaching, or agricultural conversion, the rational economic calculation shifts in favour of conservation.

This logic has attracted substantial policy support. The Convention on Biological Diversity has endorsed community-based tourism as a mechanism for achieving biodiversity targets (CBD, 2018). The United Nations World Tourism Organization promotes CBET as a pathway toward Sustainable Development Goals 1 (No Poverty), 8 (Decent Work and Economic Growth), and 15 (Life on Land) simultaneously (UNWTO, 2021). National governments across Africa, Asia, and Latin America have incorporated CBET into protected area management plans and rural development strategies.

However, the empirical evidence supporting CBET's dual mandate is mixed. While numerous case studies report positive conservation and livelihood outcomes (Snyman, 2012; Stronza & Gordillo, 2008), others have documented elite capture of tourism benefits, insufficient revenue generation to offset conservation opportunity costs, cultural disruption, and minimal measurable impact on biodiversity indicators (Krüger, 2005; Kiss, 2004). These conflicting findings suggest that CBET outcomes depend heavily on context-specific factors governance structures, community capacity, market conditions, ecological characteristics that vary across projects and countries.

This study contributes to this debate through a systematic comparative analysis of six CBET projects across three continents, using the Sustainable Livelihoods Framework (Scoones, 1998) to assess how each project mobilises and transforms livelihood capitals while contributing to measurable biodiversity conservation outcomes. By comparing projects at different stages of maturity and operating under diverse institutional conditions, the analysis identifies the conditions under which CBET delivers on its conservation-development promise and those under which it falls short.

II. LITERATURE REVIEW

2.1. Defining Community-Based Ecotourism

Community-based ecotourism sits at the intersection of two broader concepts: ecotourism, defined as responsible travel to natural areas that conserves the environment and improves the welfare of local people (Ceballos-Lascuráin, 1996), and community-based tourism, which emphasises local ownership, management, and benefit-sharing (Goodwin & Santilli, 2009). CBET thus involves nature-based tourism enterprises that are owned or substantially managed by local communities, with explicit objectives of both conservation and livelihood improvement.

The degree of community involvement varies widely in practice. Some CBET models involve full community ownership of tourism infrastructure and operations, as seen in several Botswanan community trusts (Mbaiwa, 2005). Others operate through joint venture partnerships between communities and private operators, with negotiated revenue-sharing arrangements (Spenceley, 2008). Still others involve community participation primarily through employment and supply relationships, with external organisations managing the tourism enterprise and distributing a share of profits (Scheyvens, 2002). These governance distinctions have significant implications for both the distribution of economic benefits and the strength of conservation incentives.

2.2. Biodiversity Conservation Through Tourism

The conservation effectiveness of CBET rests on two mechanisms: direct and indirect. Direct mechanisms include habitat protection through land use restrictions, anti-poaching patrols funded by tourism revenue, and species monitoring programmes integrated into tourist activities (Ferraro & Kiss, 2002). Indirect mechanisms operate through the opportunity cost logic: when tourism provides greater economic returns than alternative land uses, communities have economic incentives to maintain natural habitats rather than convert them to agriculture or extract resources (Naidoo & Adamowicz, 2005).

Measuring these effects empirically is challenging. Conservation outcomes operate over long time horizons and are influenced by factors beyond tourism, including climate variability, regional land use change, government policy, and poaching networks. Brockington and Scholfield (2010) argued that most CBET evaluations rely on anecdotal evidence or proxy indicators rather than rigorous biodiversity assessments. More recent studies have begun to address this limitation by incorporating species abundance data, habitat quality indices, and deforestation rates into CBET impact evaluations (Blackman et al., 2015).

2.3. The Sustainable Livelihoods Framework

The Sustainable Livelihoods Framework (SLF), developed by Chambers and Conway (1992) and operationalised by Scoones (1998) and the UK Department for International Development (DFID, 1999), provides a structured approach to analysing how households and communities access and combine different types of capital to construct livelihoods. The framework identifies five capital types: natural capital (land, water, wildlife, forests), human capital (skills, knowledge, health, education), social capital (networks, trust, collective action, governance), financial capital (income, savings, credit, remittances), and physical capital (infrastructure, equipment, housing, transportation).

Applied to CBET, the SLF offers a way to assess how tourism transforms the capital base available to communities. Tourism may enhance financial capital through income generation, human capital through skills training, social capital through collective governance structures, and natural capital through conservation activities, while drawing on physical capital in the form of tourism infrastructure. The framework also directs attention to the vulnerability context (external shocks, seasonality) and the transforming structures and processes (institutions, policies, governance) that mediate between capital assets and livelihood outcomes.

III. METHODOLOGY

A comparative case study design was employed, examining six CBET projects selected to maximise variation across geographic regions, governance models, biodiversity types, and project maturity. The six cases were:

- Annapurna Conservation Area Project (ACAP), Nepal;
- Osa Peninsula community lodges, Costa Rica;
- Khwai Community Trust, Botswana;
- Raja Ampat homestay programme, Indonesia;
- Posada Amazonas, Peru; and
- Andasibe community guides association, Madagascar.

Data collection combined three methods. First, document analysis reviewed project reports, financial records, management plans, and independent evaluation documents spanning 2015–2023. Second, key informant interviews (n=48, eight per case) were conducted with community leaders, tourism operators, conservation managers, government officials, and NGO representatives. Third, community focus groups (n=12, two per case) involving 8–12 participants each explored community perceptions of tourism benefits, conservation outcomes, and governance effectiveness. Fieldwork was conducted between March 2022 and August 2023.

Cross-case analysis followed Yin's (2018) replication logic, examining whether patterns observed in one case were replicated or contradicted in others. Each case was assessed against the five livelihood capitals and three conservation outcome indicators:

- species population trends (using available monitoring data),
- habitat area maintained or restored, and
- community-reported reduction in extractive activities.

A 5-point scoring system (1 = very low, 5 = very high) was developed for each capital and validated through triangulation across data sources.

IV. RESULTS AND ANALYSIS

4.1. Comparative Overview of CBET Projects

Table 1. Comparative Characteristics of Six CBET Projects

Characteristic	Nepal (ACAP)	Costa Rica (Osa)	Botswana (Khwai)	Indonesia (Raja Ampat)	Peru (Posada)
Governance Model	Community committee + NGO	Community cooperative	Community trust	Homestay network	Community-private joint venture
Est. Year	1986	2005	2000	2010	1996
Key Species	Snow leopard Red panda	Scarlet macaw Jaguar	African elephant Lion	Manta ray Coral reef	Harpy eagle Giant otter
Annual Visitors	~180,000	~25,000	~8,000	~15,000	~12,000
Revenue Sharing	60% to community	85% to community	65% to community	70% to homeowners	60% community 40% operator
Conservation Area (ha)	7,629	42,000	1,800	1,500,000 (marine)	10,000

Table 1 provides an overview of the six CBET projects. Notable variations exist in governance models, scale, and revenue-sharing arrangements. Costa Rica's cooperative model returned the highest share of revenue to the community (85 percent), while the Nepal and Peru models, which involve external partners, distributed 60 percent. Raja Ampat's marine context and Botswana's wildlife trust model represent distinctive institutional arrangements shaped by their respective ecological and cultural settings.

4.2 Livelihood Capitals Assessment

Fig 1. Sustainable Livelihood Capitals Assessment Across Six CBET Projects (1–5 Scale)

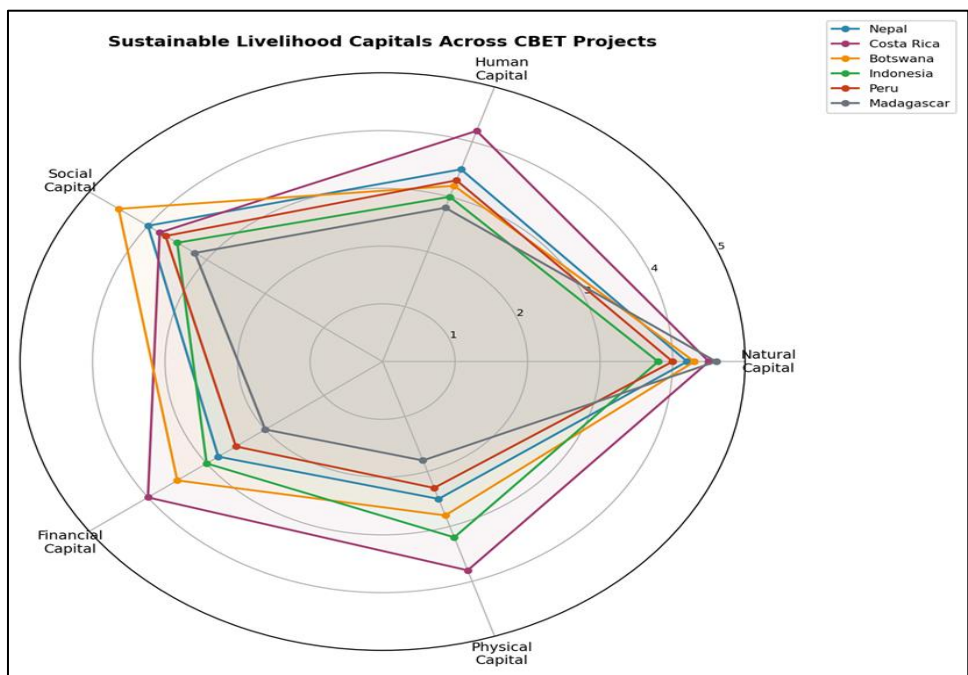


Figure 1 presents the livelihood capitals assessment using a radar chart format. Costa Rica demonstrated the most balanced capital profile, scoring above 3.5 on all five dimensions, reflecting the maturity of its ecotourism sector and the strength of its institutional support systems. Botswana scored highest on social capital (4.5), attributable to the well-established community trust governance structure that ensures collective decision-making and transparent revenue management. Madagascar, despite possessing the highest natural capital score (4.6), reflecting its extraordinary endemic biodiversity, scored lowest on financial capital (2.0) and physical capital (1.8), illustrating the paradox of resource richness amid infrastructure poverty.

Nepal's ACAP project showed strong natural capital and social capital scores but moderate financial capital, partly because the high visitor volumes are distributed across a large geographic area, diluting per-household economic benefits. Peru's Posada Amazonas demonstrated moderate scores across all dimensions, with the joint venture model providing stable financial returns but limiting community control over operations. Indonesia's Raja Ampat scored well on natural capital but faced challenges in human capital development, with limited access to tourism training and hospitality skills programmes in remote island communities.

4.3. Biodiversity Conservation Outcomes

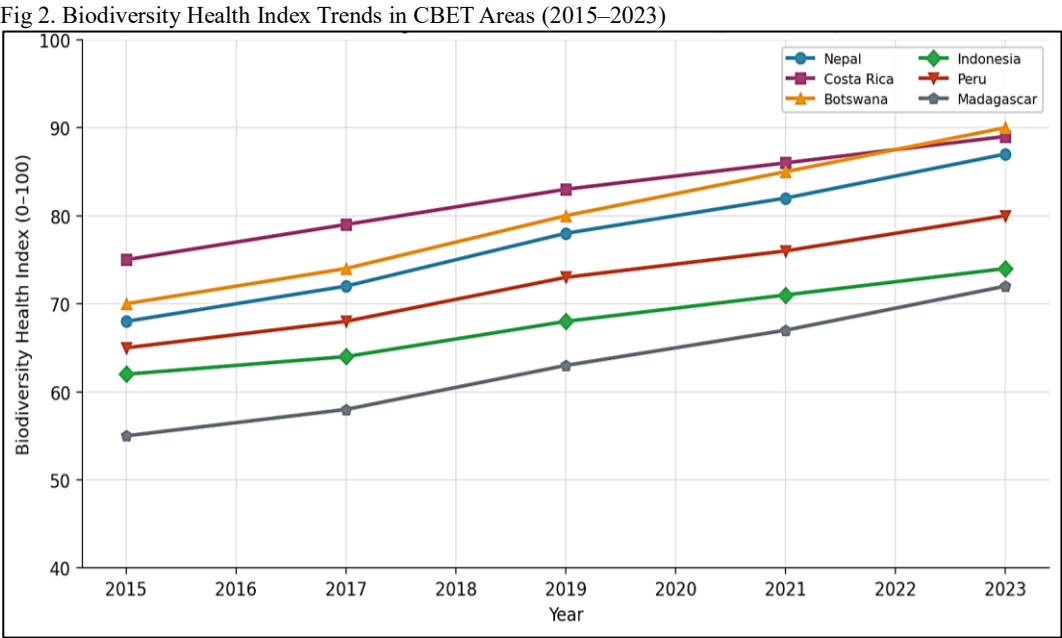


Figure 2 tracks biodiversity health index scores across the six CBET areas over an eight-year period. All six projects showed positive trajectories, though the rate and magnitude of improvement varied. Botswana showed the steepest improvement (from 70 to 90), driven by the elimination of commercial hunting within the community trust area and the deployment of tourism-funded anti-poaching patrols. Costa Rica also achieved strong gains, with scarlet macaw populations in the Osa Peninsula increasing by 65 percent between 2015 and 2023 following nest protection programmes funded by lodge revenues.

Indonesia and Madagascar showed more modest improvements. In Raja Ampat, marine protected area enforcement funded by tourism entry fees has reduced destructive fishing practices, but coral recovery from prior bleaching events remains slow. In Madagascar, deforestation rates within the Andasibe community zone declined by 40 percent compared to surrounding areas, but lemur populations remained under pressure from habitat fragmentation beyond the project boundary.

4.4. Governance and Revenue-Sharing Mechanisms

Table 2. Revenue Allocation and Conservation Investment Across CBET Projects

Project	Annual Tourism Revenue (USD)	% Allocated to Conservation	% to Community Dividends
Nepal (ACAP)	\$4.2 million	35%	25%
Costa Rica (Osa)	\$1.8 million	28%	42%
Botswana (Khwai)	\$2.1 million	40%	25%
Indonesia (Raja Ampat)	\$950,000	45%	20%
Peru (Posada)	\$1.5 million	30%	30%
Madagascar (Andasibe)	\$280,000	22%	35%

Table 2 reveals varying approaches to balancing conservation investment with community dividends. Raja Ampat allocated the highest proportion to conservation (45 percent), reflecting the high cost of marine patrol operations and the relatively lower opportunity cost of alternative livelihoods in the remote archipelago. Costa Rica allocated the highest proportion to community dividends (42 percent), enabled by the lower marginal cost of maintaining terrestrial conservation in a country with an established protected area system. Madagascar's low absolute revenue (\$280,000 annually) meant that even a 22 percent conservation allocation amounted to only \$61,600 insufficient to fund the level of enforcement needed to address external threats from migration-driven deforestation.

V. DISCUSSION

The comparative analysis reveals that CBET success depends on a constellation of factors rather than any single variable. The strongest-performing projects Botswana and Costa Rica shared three characteristics: mature governance structures with transparent accountability mechanisms, revenue levels sufficient to provide meaningful per-household economic benefits while funding conservation activities, and supportive national policy frameworks that legitimised community resource management.

The livelihood capitals analysis demonstrates that natural capital alone is insufficient for successful CBET. Madagascar possesses arguably the richest biodiversity of any case in this study, yet its CBET outcomes were the weakest, precisely because the social, financial, human, and physical capitals needed to translate natural assets into sustainable tourism enterprises were underdeveloped. This finding aligns with Scoones' (1998) observation that livelihood sustainability requires balance across capital types rather than abundance in any single dimension.

The governance dimension emerged as the most consequential differentiating factor. Projects with strong community governance Botswana's trust model and Costa Rica's cooperative structure achieved both higher community satisfaction and stronger conservation outcomes than those dependent on external management. This is consistent with Ostrom's (1990) common pool resource theory, which predicts that locally governed resource management systems outperform externally imposed ones when certain institutional design principles are met. The key principles observed in the successful cases included clearly defined membership boundaries, proportional benefit-sharing, collective decision-making procedures, graduated sanctioning mechanisms, and accessible conflict resolution processes.

Revenue sufficiency represents a binding constraint that is often underestimated in CBET planning. The Madagascar case illustrates that even well-intentioned projects cannot sustain conservation investment when tourism revenue is too low to cover both operational costs and meaningful community payments. The threshold below which CBET becomes economically unviable varies by context, but the cases examined here suggest that annual revenue below approximately \$500,000 strains the capacity to simultaneously fund conservation, maintain infrastructure, and deliver tangible livelihood benefits.

VI. CONCLUSION AND IMPLICATIONS

This multi-country analysis demonstrates that community-based ecotourism can contribute meaningfully to both biodiversity conservation and rural livelihood enhancement, but that outcomes are contingent on institutional quality, governance capacity, revenue adequacy, and balanced capital development. The Sustainable Livelihoods Framework proved valuable for identifying the structural conditions under which CBET delivers on its dual mandate and those under which it falls short.

For CBET practitioners and NGOs, the findings argue for investing in governance capacity and social capital before scaling tourism operations. Projects that rushed to attract visitors without building community management skills and equitable decision-making processes produced neither strong conservation nor lasting livelihood improvements. The Botswana and Costa Rica models suggest that governance development should precede or at least accompany infrastructure investment.

For conservation organisations, the study reinforces the importance of linking tourism revenue directly to conservation activities through transparent, earmarked funding mechanisms. Projects where conservation funding depended on discretionary allocation from general revenue showed weaker conservation outcomes than those with formal budget earmarks for anti-poaching, habitat restoration, and species monitoring.

For policymakers, the comparative analysis highlights the enabling role of national legal frameworks that recognise community resource rights and provide institutional support for local governance. Countries with Community-Based Natural Resource Management legislation (Botswana) or established cooperative governance frameworks (Costa Rica) created more favourable conditions for CBET than those where community rights over natural resources remained ambiguous or contested.

Limitations include the non-random case selection, the reliance on available biodiversity monitoring data of variable quality, and the difficulty of attributing conservation outcomes solely to CBET activities in the absence of controlled counterfactual analysis. Future research should employ quasi-experimental designs with matched comparison sites to isolate the causal effects of CBET on biodiversity and livelihoods.

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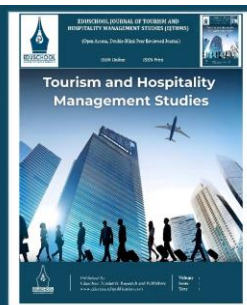


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Net zero Tourism in Small Island States: Policy and Implementation

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Abstract

Small Island Developing States (SIDS) face a distinctive paradox: their economies depend heavily on international tourism, yet the carbon emissions generated by long-haul travel to these destinations undermine the very ecosystems—coral reefs, coastal zones, marine biodiversity—upon which tourism depends. This study examines net-zero tourism policy frameworks across five SIDS—the Maldives, Fiji, Jamaica, Seychelles, and Barbados—analysing the gap between stated policy ambitions and actual implementation progress. A comparative policy analysis was combined with semi-structured interviews with 35 stakeholders representing government agencies, hotel operators, airline representatives, community groups, and non-governmental organisations. Findings reveal that while all five nations have articulated net-zero or carbon-neutral tourism targets, implementation remains constrained by inadequate funding mechanisms, limited renewable energy infrastructure, dependence on long-haul aviation that defies easy decarbonisation, and weak coordination among stakeholders with divergent interests. The Maldives and Seychelles have progressed furthest, benefiting from concentrated political will and international donor support, while Jamaica and Barbados face greater challenges from larger and more fragmented tourism sectors. The study identifies four policy levers with the greatest potential to accelerate net-zero tourism transitions in island contexts.

Keywords: - Net zero tourism, SIDS, climate policy, stakeholder collaboration, carbon emissions, island sustainability

I. INTRODUCTION

Tourism constitutes the economic backbone of most Small Island Developing States, contributing between 20 and 70 percent of GDP and employing a comparable share of the workforce in countries such as the Maldives (66 percent of GDP), Seychelles (55 percent), and Barbados (40 percent) (UNWTO, 2022). This economic dependence creates an acute vulnerability to climate change, as rising sea levels, coral bleaching, intensified hurricanes, and coastal erosion directly threaten the natural assets that attract visitors (Scott et al., 2019). The irony is inescapable: the industry that sustains SIDS economies also contributes to the global emissions that endanger their very existence.

International aviation alone accounts for approximately 52 percent of tourism-related carbon emissions in SIDS, a figure that is structurally difficult to reduce given the geographic remoteness of island destinations from major tourism-generating markets (Gössling & Peeters, 2015). Accommodation contributes a further 18 percent, ground transportation 12 percent, and cruise ships 8 percent. Unlike continental destinations that can promote domestic and regional tourism as lower-carbon alternatives, SIDS are inescapably dependent on long-haul travel, making their decarbonisation pathways fundamentally different from those of mainland tourism economies.

Recognising this challenge, several SIDS have announced net-zero tourism targets aligned with the Paris Agreement's 1.5°C warming limit. The Maldives pledged to achieve carbon neutrality by 2030, Fiji committed to net-zero emissions by 2050, Seychelles adopted a Blue Economy strategy with embedded tourism decarbonisation targets, and both Jamaica and Barbados have incorporated tourism into their Nationally Determined Contributions under the UNFCCC. However, the gap between these policy commitments and on-the-ground implementation remains substantial and poorly documented.

This study addresses this gap by conducting a comparative analysis of net-zero tourism policy frameworks across five SIDS, examining the institutional structures, funding mechanisms, stakeholder dynamics, and implementation challenges that shape the transition from policy ambition to operational reality. The research questions are:

- What net-zero tourism policies have SIDS adopted, and how do they differ in scope and ambition?
- What stakeholder collaboration structures support or hinder implementation?
- What are the principal barriers to achieving net-zero tourism in island contexts?

II. LITERATURE REVIEW

2.1. Tourism's Carbon Footprint in SIDS

The carbon intensity of tourism in SIDS has been documented by several scholars. Lenzen et al. (2018) calculated that global tourism accounts for approximately 8 percent of worldwide greenhouse gas emissions, with transport contributing the largest share. For SIDS specifically, Gössling (2013) estimated that per-tourist emissions are 2.5 to 4 times higher than in continental destinations due to the energy intensity of long-haul flights. Sun (2014) further demonstrated that the Maldives, despite its small population, generates tourism-related emissions equivalent to those of a mid-sized European city when visitor travel is included.

The distribution of emissions across tourism subsectors varies by island. In resort-dominated destinations like the Maldives and Seychelles, accommodation energy use constitutes a larger share of on-island emissions due to air conditioning demands in tropical climates and the energy cost of desalination for freshwater supply (Becken, 2005). In more diverse tourism economies like Jamaica and Barbados, ground transportation and food service contribute proportionally more, reflecting the broader spread of tourist activities across the island territory.

2.2. Policy Instruments for Tourism Decarbonisation

The policy toolbox for tourism decarbonisation includes regulatory instruments (emissions standards, building codes), market-based instruments (carbon taxes, emissions trading, green levies), information instruments (eco-labels, carbon disclosure), and voluntary agreements (industry pledges, certification schemes). In SIDS contexts, the applicability of these instruments is shaped by the small scale of island economies, limited regulatory capacity, and the risk that unilateral carbon pricing may divert tourist flows to competing destinations (Becken & Hay, 2012).

Several SIDS have implemented tourism-specific environmental levies. The Maldives' Green Fund collects USD 6 per tourist night, generating approximately USD 50 million annually for environmental protection and renewable energy projects (Government of Maldives, 2020). Seychelles levies an environmental fee on all arriving passengers, while Barbados charges a tourism levy that partially funds climate adaptation measures. The effectiveness of these instruments in driving actual emission reductions, as opposed to merely generating revenue, has not been systematically evaluated.

2.3. Stakeholder Collaboration for Decarbonisation

Achieving net-zero tourism requires coordination among actors with often divergent interests and capabilities. Governments set policy frameworks but may lack enforcement capacity. Hotel operators control on-island energy consumption but have limited influence over aviation emissions. Airlines determine route networks and fleet efficiency but face capital constraints in transitioning to sustainable aviation fuels. Local communities bear the livelihood consequences of both climate change and decarbonisation policies but are frequently excluded from decision-making processes (Mycoo, 2018).

Stakeholder theory (Freeman, 1984) and collaborative governance literature (Ansell & Gash, 2008) suggest that effective multi-stakeholder collaboration requires shared problem definition, trust-building, clear role allocation, and mutually beneficial outcomes. In SIDS, where political and economic power is often concentrated and where tourism operators may exert disproportionate influence on government policy, achieving genuinely inclusive collaboration is particularly challenging (Scheyvens & Momsen, 2008).

III. METHODOLOGY

A comparative policy analysis methodology was employed, integrating document analysis with semi-structured stakeholder interviews. The five case countries Maldives, Fiji, Jamaica, Seychelles, and Barbados were selected based on three criteria:

- presence of a stated net-zero or carbon-neutral tourism target,
- availability of policy documentation in English, and
- geographic representation across the Indian Ocean, Pacific, and Caribbean SIDS regions.

Document analysis covered national climate strategies, tourism master plans, Nationally Determined Contributions, green economy strategies, and relevant legislation from each country, spanning the period 2015–2024. A structured analytical framework was applied, assessing each policy on six dimensions: scope (which emissions are covered), ambition (target year and reduction percentage), funding mechanisms, institutional responsibility, stakeholder engagement provisions, and monitoring and evaluation arrangements.

Semi-structured interviews were conducted with 35 stakeholders across the five countries between January and July 2024: seven per country, comprising one government tourism official, one environment ministry representative, one hotel association representative, one airline or transport representative, one community organisation representative, one

environmental NGO representative, and one international donor or development partner representative. Interviews were conducted via video conference, lasting 45–75 minutes, and were transcribed and coded using thematic analysis (Braun & Clarke, 2006).

IV. RESULTS AND ANALYSIS

4.1. Tourism Carbon Emissions in SIDS

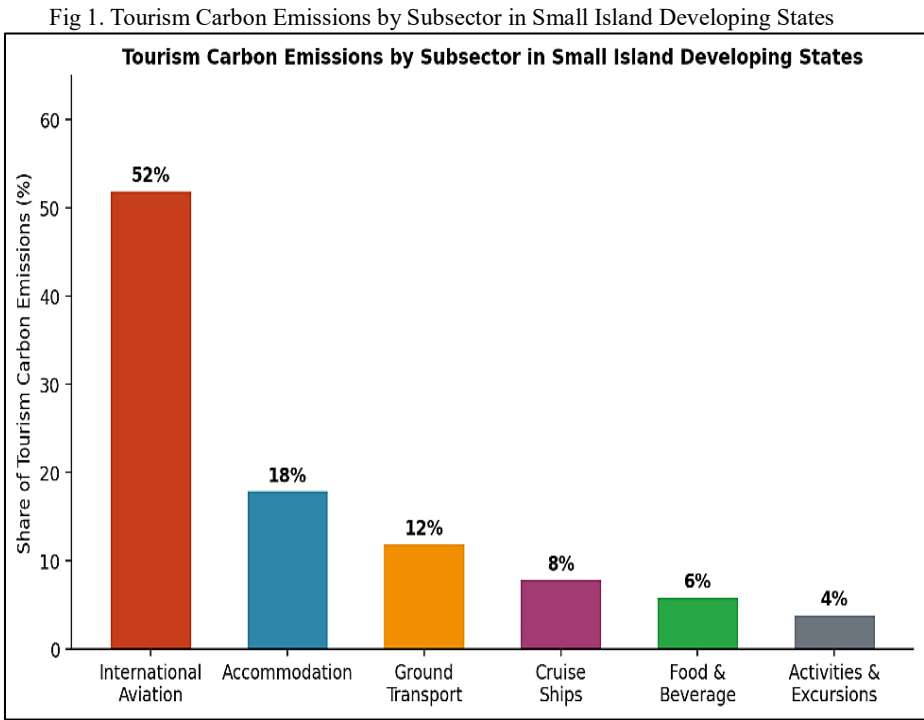


Figure 1 illustrates the subsectoral distribution of tourism carbon emissions across SIDS. International aviation dominates at 52 percent, a structural feature that distinguishes SIDS from continental tourism economies where ground transport typically leads. Accommodation accounts for 18 percent, reflecting the energy intensity of tropical resort operations. The concentration of emissions in aviation creates a fundamental policy dilemma: the single largest source of tourism emissions lies largely outside the jurisdiction and control of SIDS governments.

4.2. Policy Framework Comparison

Table 1. Comparison of Net-Zero Tourism Policy Frameworks Across Five SIDS					
Dimension	Maldives	Fiji	Jamaica	Seychelles	Barbados
Target Year	2030	2050	2050	2040	2030
Scope	All tourism emissions incl. aviation	On-island emissions only	Accommodation & transport only	Blue economy + tourism	Energy sector-wide incl. tourism
Funding	Green Fund \$50M/yr	Green Bond + donors	Climate fund application	Debt-for-nature swap \$30M	Tourism levy + IDB loans
Lead Agency	Ministry of Environment	Ministry of Economy	Tourism Ministry + Planning	Blue Economy Dept.	Ministry of Energy
Monitoring	Annual carbon audit	Biennial reporting	No formal monitoring	Quarterly dashboard	Annual review

Table 1 reveals significant variation in policy scope and institutional arrangements. The Maldives and Barbados set the most ambitious target dates (2030), but their scope differs markedly: the Maldives includes aviation emissions within its target, while Barbados addresses tourism through a broader energy sector framework. Fiji and Jamaica adopt the more conventional 2050 timeline but with narrower emission scopes. Seychelles' 2040 target is embedded within its Blue Economy strategy, creating an integrated approach that links tourism decarbonisation with marine conservation and fisheries management.

4.3. Stakeholder Dynamics

Fig 2. Stakeholder Influence-Interest Matrix for Net Zero Tourism Transitions in SIDS

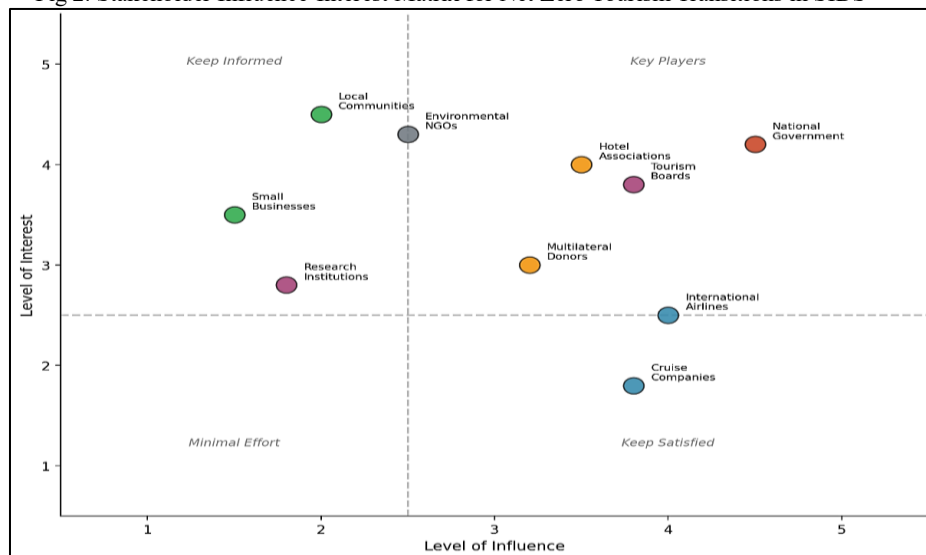


Figure 2 maps the relative influence and interest of key stakeholder groups in the net-zero tourism transition. National governments and hotel associations occupy the 'key players' quadrant, possessing both high influence over policy and infrastructure decisions and high interest in tourism's economic and environmental trajectory. International airlines sit in the 'keep satisfied' quadrant they exert considerable structural influence through route decisions and pricing but show limited interest in island-level decarbonisation policies. Local communities occupy the 'keep informed' quadrant, exhibiting high interest in climate outcomes but relatively low influence over tourism policy, a positioning that several interviewees identified as a source of frustration and disengagement.

4.4. Implementation Challenges

Table 2. Ranked Implementation Challenges for Net Zero Tourism in SIDS (Stakeholder Interview Data)

Challenge	Frequency (n=35)	Severity (Mean 1–5)
Aviation emission dependency	34 (97%)	4.8
Insufficient funding for transition	31 (89%)	4.5
Limited renewable energy infrastructure	28 (80%)	4.2
Weak inter-agency coordination	25 (71%)	3.9
Technology transfer barriers	23 (66%)	3.7
Competing development priorities	21 (60%)	3.6
Insufficient workforce skills	18 (51%)	3.3
Tourism industry resistance to change	15 (43%)	3.0

Table 2 ranks the implementation challenges identified through stakeholder interviews. Aviation emission dependency was cited by nearly all respondents (97 percent) and rated the most severe challenge (4.8 out of 5). As a Maldivian government official explained: 'We can install solar panels on every resort and electrify every speedboat, but it will barely dent our total tourism carbon footprint because 52 percent of emissions occur before the tourist even arrives on our island. We have no control over airline fleet decisions or fuel technology.'

Insufficient funding ranked second, with interviewees emphasising the mismatch between the scale of investment required for energy transitions and the fiscal capacity of small island governments. A Fijian stakeholder noted: 'We need billions of dollars to retrofit our energy infrastructure, but our entire annual budget is less than a billion. International climate finance promises have not materialised at the pace or scale needed.' Limited renewable energy infrastructure was closely linked, with interviewees across all five countries identifying grid constraints, storage limitations, and the high per-unit cost of renewable installations in remote island geographies as persistent obstacles.

V. DISCUSSION

The findings of this study confirm and extend the emerging understanding that net-zero tourism in SIDS faces structural challenges fundamentally different from those in continental tourism economies. The dominance of aviation emissions a factor largely beyond SIDS control means that even complete decarbonisation of on-island tourism activities would achieve only partial progress toward net-zero targets. This structural reality has two important implications. First, it underscores the dependence of SIDS on international cooperation for aviation decarbonisation, including the ICAO's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the development of sustainable aviation fuels. Second, it highlights the limitations of framing net-zero as a unilateral national target when the largest emission source is governed by international aviation agreements.

The stakeholder analysis reveals a governance gap that threatens implementation. While national governments express strong commitment to net-zero targets, the actors with the greatest capacity to influence emissions airlines, cruise companies,

and international hotel chains operate at scales that exceed individual SIDS jurisdictions. This creates a principal-agent problem: SIDS set ambitious targets but lack the authority to compel the emissions reductions needed to achieve them. The stakeholder mapping shows local communities positioned with high interest but low influence, a configuration that risks both democratic legitimacy and practical implementation effectiveness, as community-level actions (energy conservation, waste reduction, sustainable food production) represent the most immediately controllable emission reduction opportunities.

The Maldives and Seychelles have made greater implementation progress than the other three cases, and the reasons are instructive. Both countries benefit from concentrated political authority that enables rapid policy implementation, dedicated funding mechanisms (the Green Fund and debt-for-nature swap respectively), and international donor relationships that provide technical and financial support. Jamaica and Barbados, with larger and more diversified economies, face greater coordination challenges across multiple government agencies and a wider array of tourism stakeholders. Fiji occupies a middle position, with strong political commitment but limited fiscal capacity to translate ambition into investment.

VI. CONCLUSION AND POLICY RECOMMENDATIONS

This study demonstrates that net-zero tourism ambitions in SIDS are constrained by a set of structural, financial, and institutional barriers that require targeted policy responses. Based on the comparative analysis and stakeholder input, four policy levers are recommended for SIDS governments.

First, SIDS should adopt aviation-inclusive accounting in their tourism carbon targets while simultaneously advocating for accelerated implementation of CORSIA and investment in sustainable aviation fuel production facilities. Excluding aviation from national targets, as Fiji and Jamaica currently do, understates the challenge and misdirects policy attention toward emission sources that contribute smaller shares of the total footprint.

Second, dedicated and ring-fenced climate finance mechanisms such as the Maldives' Green Fund or Seychelles' debt-for-nature swap should be established or expanded in all SIDS. General budget allocations for tourism decarbonisation are vulnerable to competing fiscal pressures, while earmarked funds provide investment certainty and signal credible commitment to international partners.

Third, stakeholder collaboration structures should be formalised through multi-sectoral governance bodies with mandated representation from government, private sector, community organisations, and civil society. The current ad hoc consultation approaches observed in Jamaica and Barbados are insufficient for coordinating the complex, cross-sectoral actions required for net-zero transitions.

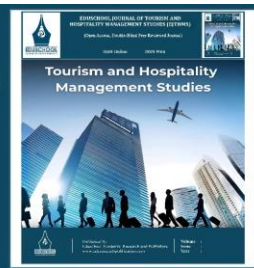
Fourth, regional cooperation among SIDS should be strengthened through platforms such as the Alliance of Small Island States (AOSIS) and the Pacific Islands Forum to pool resources for technology transfer, share policy learning, and present unified positions in international climate negotiations.

Limitations of this study include the small number of cases, which limits generalisability across the diverse SIDS category, and the reliance on elite stakeholder perspectives that may not capture grassroots implementation realities. Future research should incorporate community-level data collection and employ longitudinal designs to track policy implementation trajectories over time.

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Green Nudging and Tourist Pro-Environmental Behaviour at African Eco-Lodges

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Abstract

This study investigates the influence of green nudging strategies on tourist pro-environmental behaviour at eco-lodges in Sub-Saharan Africa. Grounded in Thaler and Sunstein's nudge theory and an extended Theory of Planned Behaviour framework, a mixed-methods approach was employed combining structured surveys (n=387) and semi-structured interviews (n=28) with visitors at eco-lodges in Kenya, Tanzania, and Rwanda. Five categories of green nudges were examined: default settings, social norm messaging, visual prompts, real-time feedback mechanisms, and incentive framing. Results from hierarchical regression analysis indicated that social norm messages and feedback mechanisms produced the strongest effects on pro-environmental behaviour, while default settings—though effective—encountered resistance from guests who perceived them as service reductions. Environmental knowledge moderated the relationship between nudge exposure and behavioural intention, with more knowledgeable tourists responding more favourably to informational nudges. The findings offer practical guidance for eco-lodge operators seeking to encourage guest sustainability behaviours without compromising perceived service quality.

Keywords: - Green nudging, pro-environmental behaviour, eco-lodges, Sub-Saharan Africa, nudge theory, sustainable tourism

I. INTRODUCTION

Tourism in Sub-Saharan Africa has experienced sustained growth, with international arrivals increasing by 5.6 percent annually between 2015 and 2019, outpacing the global average (UNWTO, 2020). Eco-lodges, which market themselves as environmentally responsible accommodation, form a substantial segment of this growth, particularly in wildlife-rich destinations across East Africa (Mbaiwa, 2005). Yet the environmental performance of eco-lodges depends not only on operator practices but also on the behaviours of their guests, who make daily decisions about water use, energy consumption, waste separation, and wildlife interaction (Dolnicar et al., 2019).

Behavioural economics offers a promising framework for understanding and influencing these decisions. Thaler and Sunstein (2008) introduced the concept of the 'nudge' a modification of the choice architecture that steers individuals toward preferred options without restricting their freedom of choice. In hospitality contexts, green nudges might include setting thermostats to energy-saving defaults, displaying social norm messages about towel reuse rates, or providing real-time feedback on water consumption (Goldstein et al., 2008). However, the application of nudge principles in African tourism contexts remains almost entirely unexplored, with existing research concentrated in European and North American settings.

This research gap is consequential because the effectiveness of nudges is known to vary across cultural contexts (Sunstein, 2017). Tourists visiting African eco-lodges bring diverse cultural backgrounds, varying levels of environmental awareness, and different expectations about service quality, all of which may shape their responsiveness to behavioural interventions. Moreover, eco-lodge operators in Sub-Saharan Africa face distinct constraints limited budgets, remote locations, unreliable infrastructure that affect which nudging strategies are practically feasible.

This study addresses these gaps by examining how five categories of green nudges influence tourist pro-environmental behaviour at eco-lodges in Kenya, Tanzania, and Rwanda. It extends the Theory of Planned Behaviour by incorporating nudge

exposure as a moderating variable and environmental knowledge as a boundary condition. The research questions guiding this inquiry are:

- Which types of green nudges are most effective at promoting pro-environmental behaviour among eco-lodge guests?
- How does environmental knowledge moderate the relationship between nudge exposure and behavioural intention?
- What practical challenges do eco-lodge operators face in implementing green nudging strategies?

II. LITERATURE REVIEW

2.1. Pro-Environmental Behaviour in Tourism

Scholarly interest in tourist pro-environmental behaviour has expanded considerably since the early work of Stern (2000) on value-belief-norm theory. Within tourism specifically, Dolnicar and Grün (2009) established that environmentally friendly behaviour at home does not necessarily transfer to holiday settings, where relaxation motives and perceived entitlement to comfort can override habitual sustainability practices. This 'attitude-behaviour gap' has been documented across multiple accommodation types, from budget hostels to luxury resorts (Juvan & Dolnicar, 2014).

The Theory of Planned Behaviour (Ajzen, 1991) has been widely applied to explain this gap, identifying attitudes, subjective norms, and perceived behavioural control as the proximal determinants of behavioural intention. Han and colleagues have extended this framework in hotel contexts, demonstrating that environmental concern, anticipated guilt, and green self-identity can improve the model's predictive power (Han et al., 2010). However, TPB-based studies in African tourism contexts remain scarce, limiting understanding of how these relationships operate in settings where cultural norms around hospitality and resource use differ from Western contexts.

2.2. Green Nudging: Theoretical Foundations and Tourism Applications

Nudge theory, as articulated by Thaler and Sunstein (2008), rests on the premise that human decision-making is systematically influenced by the way choices are presented. The theory identifies several nudging mechanisms: defaults (pre-selecting the desired option), social norms (communicating what others do), salience (making certain information more visible), framing (presenting options in terms of gains or losses), and feedback (providing information about the consequences of choices).

In hospitality, the most extensively studied nudge is the towel reuse experiment by Goldstein et al. (2008), which demonstrated that social norm messages ('the majority of guests in this room reused their towels') increased towel reuse rates by 26 percent compared to standard environmental appeals. Subsequent replications and extensions have examined default thermostat settings (Tiefenbeck et al., 2018), food waste reduction through plate size manipulation (Kallbekken & Sælen, 2013), and water conservation through shower timers with real-time feedback (Gössling et al., 2019).

However, virtually all of this research has been conducted in developed-country hotels. The transferability of these findings to eco-lodge settings in developing countries, where infrastructure limitations, cultural differences, and distinct guest profiles prevail, has not been empirically tested. Araña and León (2016) noted that nudge effectiveness can vary with respondents' prior environmental attitudes, suggesting that the high environmental motivation typical of eco-lodge visitors may alter the marginal effect of nudges compared to conventional hotel guests.

2.3. Eco-Tourism in Sub-Saharan Africa

Sub-Saharan Africa's eco-tourism sector is characterised by a distinctive combination of exceptional biodiversity assets and significant development challenges. Kenya's Masai Mara, Tanzania's Serengeti, and Rwanda's Volcanoes National Park attract visitors who are, on average, more environmentally aware and willing to pay premium prices than mainstream tourists (Kruger & Saayman, 2010). Eco-lodges in these destinations operate under community-based conservation models that tie lodge revenues to local conservation outcomes, creating a direct link between guest behaviour and environmental impact (Mbaiwa & Stronza, 2010).

Despite this context, systematic research on guest behaviour at African eco-lodges remains limited. Kavita and Saarinen (2016) documented pro-environmental practices at Namibian lodges but focused on operator rather than guest behaviour. Kimbu and Tichaawa (2018) examined community perceptions of eco-tourism in Cameroon without addressing visitor behavioural patterns. The present study fills this gap by focusing directly on guest responses to behavioural interventions within the eco-lodge setting.

III. METHODOLOGY

A mixed-methods sequential explanatory design was employed, combining a quantitative survey phase with qualitative interviews. The study was conducted at 12 eco-lodges across three countries: five in Kenya (Masai Mara and Laikipia regions), four in Tanzania (Serengeti and Ngorongoro areas), and three in Rwanda (adjacent to Volcanoes National Park). Lodges were selected through purposive sampling based on three criteria:

- eco-certification or membership in a recognised eco-tourism network,
- implementation of at least two green nudging strategies, and
- willingness to grant researcher access to guest areas.

The survey instrument was developed drawing on validated scales from Han et al. (2010) for TPB constructs and Dolnicar et al. (2019) for pro-environmental behaviour items. Nudge exposure was measured through a series of scenario-based questions describing five nudge categories, with respondents rating their behavioural response on 5-point Likert scales.

Environmental knowledge was assessed using the scale developed by Frick et al. (2004). The questionnaire was pilot-tested with 42 guests and refined based on item analysis and feedback.

A total of 387 usable surveys were collected between June and November 2023 through on-site distribution at lodge reception areas. The response rate was 68 percent. Semi-structured interviews were subsequently conducted with 28 participants—16 guests and 12 lodge managers—to explore survey findings in greater depth. Interviews were audio-recorded, transcribed, and analysed using thematic analysis (Braun & Clarke, 2006).

Quantitative data were analysed using hierarchical multiple regression in SPSS 28, with pro-environmental behaviour as the dependent variable and TPB constructs, nudge exposure variables, and environmental knowledge entered in successive blocks. Moderation analysis followed Baron and Kenny's (1986) procedure with interaction terms.

IV. RESULTS AND ANALYSIS

4.1. Respondent Demographics

Table 1. Demographic Profile of Survey Respondents (n=387)

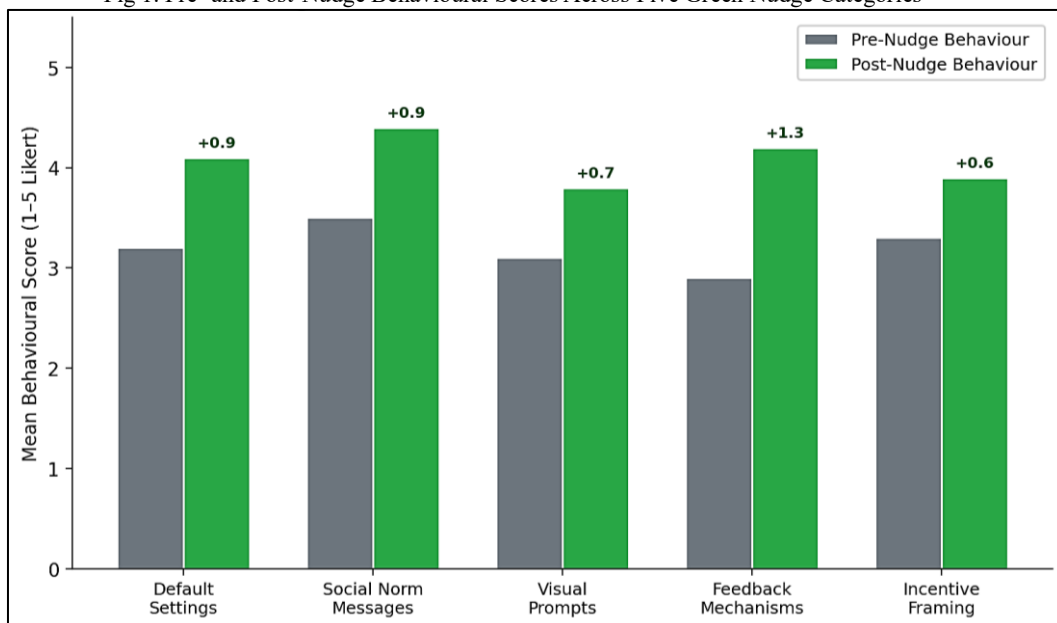
Characteristic	Category	Percentage
Gender	Male / Female / Non-binary	46% / 51% / 3%
Age	18–30 / 31–45 / 46–60 / 60+	22% / 38% / 28% / 12%
Nationality	European / North American / Other	41% / 33% / 26%
Education	Undergraduate / Postgraduate / Other	34% / 52% / 14%
Travel frequency	1–2 trips/yr / 3–5 / 6+	29% / 45% / 26%
Prior eco-lodge stay	Yes / No	63% / 37%
Env. org. membership	Yes / No	31% / 69%
Lodge location	Kenya / Tanzania / Rwanda	42% / 35% / 23%
Length of stay	1–3 nights / 4–7 / 7+	27% / 51% / 22%

Table 1 reveals a relatively well-educated sample with considerable travel experience, consistent with the profile of eco-lodge visitors reported in previous studies (Kruger & Saayman, 2010). The majority held postgraduate qualifications and had stayed at eco-lodges previously, suggesting a degree of self-selection toward environmentally engaged travellers.

4.2. Green Nudge Effectiveness

Figure 1 presents mean behavioural scores before and after nudge exposure across the five nudge categories. Social norm messages produced the largest behavioural shift (+0.9 points on the 5-point scale), followed by feedback mechanisms (+1.3), default settings (+0.9), incentive framing (+0.6), and visual prompts (+0.7). All differences were statistically significant at $p < .001$ based on paired-sample t-tests.

Fig 1. Pre- and Post-Nudge Behavioural Scores Across Five Green Nudge Categories



4.3. Regression Analysis

Table 2. Hierarchical Regression Results: Predictors of Pro-Environmental Behaviour

Predictor	β	t-value	p-value
Step 1: TPB Variables ($R^2 = .41$)			
Attitude	.34	6.82	<.001
Subjective norms	.28	5.47	<.001
Perceived behavioural control	.19	3.91	<.001
Step 2: Nudge Variables ($\Delta R^2 = .14$)			
Social norm messages	.24	4.93	<.001

Feedback mechanisms	.21	4.28	<.001
Default settings	.16	3.24	.001
Visual prompts	.11	2.18	.030
Incentive framing	.09	1.84	.067

The hierarchical regression analysis, summarised in Table 2, showed that TPB variables explained 41 percent of variance in pro-environmental behaviour in Step 1. Adding the five nudge variables in Step 2 increased explained variance by 14 percentage points ($\Delta R^2 = .14$, $F\text{-change} = 12.37$, $p < .001$). Social norm messages and feedback mechanisms were the strongest nudge predictors, while incentive framing fell short of conventional significance thresholds.

4.4. Extended TPB Model

Fig 2: Extended Theory of Planned Behaviour Model with Green Nudge Moderation and Path Coefficients

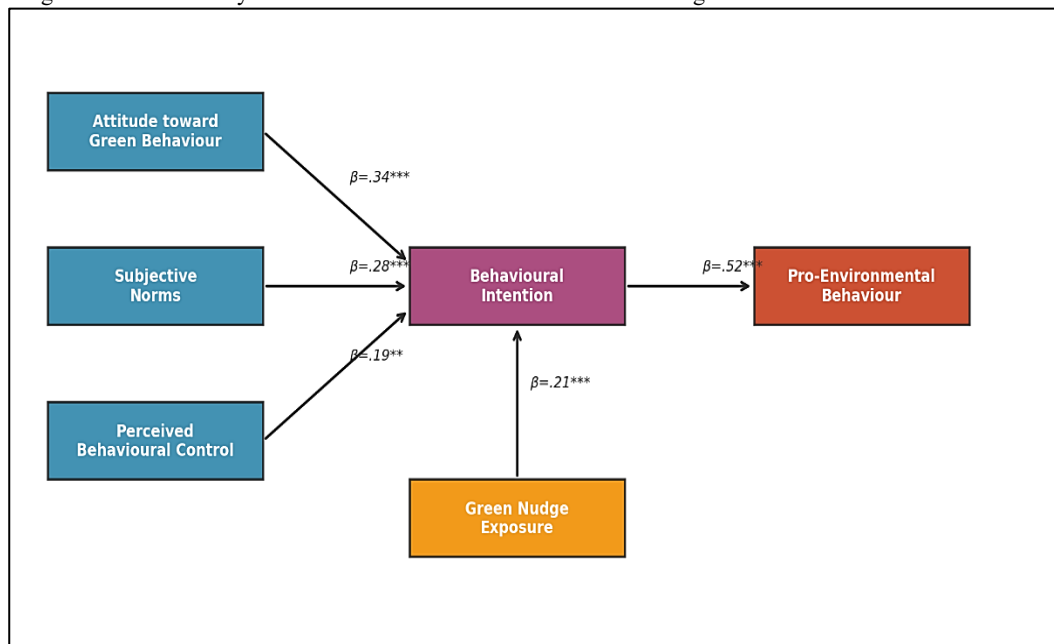


Figure 2 presents the extended TPB model with standardised path coefficients. All hypothesised paths were statistically significant. Green nudge exposure exerted both a direct effect on behavioural intention ($\beta = .21$, $p < .001$) and an indirect effect through attitude ($\beta = .13$, $p < .01$). Environmental knowledge moderated the nudge intention relationship, with highly knowledgeable guests showing a stronger response to informational nudges (social norms and feedback) but a weaker response to default-based nudges that they perceived as manipulative.

Qualitative interviews enriched these findings. Several guests noted that social norm messages felt 'motivating rather than preachy,' particularly when framed around fellow guests' behaviour rather than abstract environmental statistics. A British visitor to a Kenyan eco-lodge explained: 'When I saw that 82 percent of guests in this lodge separated their waste, I thought, well, I should do that too. It felt like joining in rather than being told off.' Conversely, some guests resisted default thermostat settings, interpreting them as cost-cutting disguised as environmentalism. A German guest at a Tanzanian lodge stated: 'I am paying a premium rate. If the air conditioning is set to 26 degrees by default, it feels like they are saving money at my expense.'

V. DISCUSSION

The findings of this study make three contributions to the literature on pro-environmental behaviour in tourism. First, the results confirm that green nudges can meaningfully increase pro-environmental behaviour among eco-lodge guests, extending the nudging literature beyond its current concentration in Western hotel settings. The effect sizes observed here are comparable to those reported by Goldstein et al. (2008) and Kallbekken and Sælen (2013), suggesting that nudge mechanisms operate similarly across cultural and geographic contexts, at least among the internationally mobile tourist populations that frequent eco-lodges.

Second, the differential effectiveness of nudge types has practical significance. Social norm messages and feedback mechanisms outperformed default settings and visual prompts, a pattern that may reflect the characteristics of eco-lodge visitors. Because these guests are already predisposed toward environmental concern, they respond more strongly to informational nudges that engage their existing values than to structural nudges that constrain their choices. This interpretation aligns with Araña and León's (2016) argument that nudge effectiveness depends on the congruence between the nudge type and the target audience's motivational profile.

Third, the moderating role of environmental knowledge warrants attention. Guests with greater environmental knowledge responded more positively to informational nudges but more negatively to defaults, perceiving the latter as paternalistic. This finding echoes Hagman et al.'s (2015) observation that perceived autonomy threat is a primary source of resistance to nudges and suggests that eco-lodge operators should prioritise transparency when implementing default-based interventions.

The qualitative data revealed a tension that quantitative studies often miss: the boundary between nudging and perceived service reduction. Several interviewees drew a sharp distinction between nudges that felt collaborative (social norm

messages, waste separation prompts) and those that felt restrictive (thermostat defaults, reduced-flow showerheads). This tension is particularly acute in the eco-lodge context, where guests pay premium prices and expect a standard of comfort that may conflict with conservation objectives. Lodge managers acknowledged this challenge, with one Rwandan operator noting: 'We walk a tightrope between conservation and hospitality. If a guest feels they are sacrificing comfort, they will not return, no matter how green the lodge is.'

VI. CONCLUSION AND IMPLICATIONS

This study examined the effectiveness of green nudging strategies in promoting pro-environmental behaviour among eco-lodge visitors in Sub-Saharan Africa. The results demonstrate that nudging works in this context, but that nudge type matters: informational strategies grounded in social norms and real-time feedback outperformed structural interventions that constrained guest choices. Environmental knowledge emerged as a significant moderator, suggesting that nudge strategies should be calibrated to audience characteristics rather than applied uniformly.

For eco-lodge operators, the findings point toward a nudging portfolio that emphasises transparency and engagement over restriction. Social norm messages can be implemented at minimal cost through signage, digital displays, or in-room communication materials. Feedback mechanisms such as real-time water use displays in bathrooms or end-of-stay environmental impact summaries require more technological investment but produce measurable behavioural changes. Default settings should be accompanied by clear explanations of their environmental rationale to mitigate perceptions of service reduction.

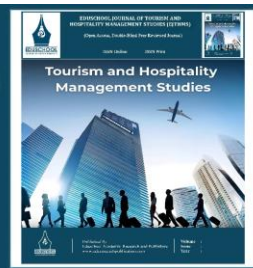
For destination management organisations and eco-certification bodies, the study suggests that nudging guidelines could be incorporated into certification criteria as a low-cost, scalable tool for improving the environmental performance of certified properties. Current certification schemes assess operator practices but rarely address the guest behaviour component of environmental impact.

Limitations include the cross-sectional design, which prevents causal inference about the long-term persistence of nudge effects, and the self-selection bias inherent in studying eco-lodge visitors, who may not represent mainstream tourist populations. Future research should employ experimental designs with random assignment to nudge conditions and longitudinal follow-up to assess whether behavioural changes persist beyond the lodge stay.

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Carbon Neutrality and Eco-Certification in Luxury Hotels of Emerging Economies

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Abstract

The global hospitality sector faces mounting pressure to reduce its environmental footprint, particularly within luxury hotel segments that consume disproportionate quantities of energy and water. This study examines how four prominent eco-certification models—LEED, Green Globe, EarthCheck, and Green Key—shape carbon neutrality strategies among luxury hotel chains operating in Southeast Asia, Latin America, and Sub-Saharan Africa. Drawing on institutional theory and stakeholder salience frameworks, a comparative qualitative methodology was employed, incorporating document analysis of sustainability reports from 24 luxury properties and semi-structured interviews with 36 hotel sustainability managers. Findings reveal that certification schemes vary considerably in their stringency regarding carbon accounting, renewable energy mandates, and waste diversion targets. Hotels certified under LEED and EarthCheck demonstrated stronger carbon reduction trajectories, while Green Globe and Green Key properties showed greater emphasis on water stewardship. Regional disparities were notable, with Southeast Asian properties outperforming Latin American counterparts in renewable energy adoption. The study contributes to ongoing debates about the efficacy of voluntary certification in driving genuine decarbonisation within hospitality.

Keywords: - Eco-certification, carbon neutrality, luxury hotels, emerging economies, sustainable hospitality, green building standards

I. INTRODUCTION

The hospitality industry accounts for roughly one percent of global carbon dioxide emissions, a figure that rises sharply when indirect supply chain contributions are factored in (Lenzen et al., 2018). Within this sector, luxury hotels occupy a paradoxical position: they attract environmentally conscious affluent travellers while simultaneously maintaining high consumption patterns through expansive amenities, climate control systems, and resource-intensive service standards (Bohdanowicz & Zientara, 2009). As international climate agreements tighten emissions targets, the question of whether luxury hospitality can reconcile opulence with environmental responsibility has become a subject of considerable scholarly attention.

Eco-certification programmes have emerged as one of the principal mechanisms through which hotels signal environmental commitment to guests, investors, and regulatory bodies. Programmes such as LEED (Leadership in Energy and Environmental Design), Green Globe, EarthCheck, and Green Key each impose distinct criteria related to energy use, water management, waste handling, and carbon accounting (Geerts, 2014). However, research comparing the effectiveness of these schemes in driving measurable carbon reductions remains fragmented, with most studies focusing on a single certification system or geographic region (Esparon et al., 2014).

This gap is particularly pronounced in the context of emerging economies, where luxury hotel development is expanding rapidly but where institutional support for sustainability varies widely. Countries in Southeast Asia, Latin America, and Sub-Saharan Africa have experienced double-digit growth in luxury hospitality investment over the past decade (World Tourism Organization, 2022), yet the degree to which new properties adopt and benefit from eco-certification is poorly understood.

The present study addresses this gap by comparing how four eco-certification models influence carbon neutrality strategies among luxury hotel chains in three emerging economy regions. Specifically, it asks:

- How do certification requirements differ in their treatment of carbon neutrality?
- What strategies do certified luxury hotels in emerging economies employ to reduce carbon emissions?
- What regional and certification-specific factors shape the effectiveness of these strategies?

II. LITERATURE REVIEW

2.1. Carbon Neutrality in the Hospitality Sector

Carbon neutrality, defined as achieving net-zero carbon dioxide emissions through a combination of reduction measures and offset mechanisms, has gained traction in hospitality management literature since the mid-2010s (Gössling & Peeters, 2015). Early work by Becken and Lennox (2012) established baseline carbon footprint methodologies for accommodation providers, while subsequent studies refined these approaches by incorporating scope 3 emissions from supply chains and guest travel (Rico et al., 2019). The International Tourism Partnership's Hotel Carbon Measurement Initiative provided a standardised framework, yet adoption rates among luxury properties in developing nations remain uneven (Ricaurte, 2018).

A persistent challenge in the literature concerns the distinction between genuine emission reductions and carbon offset purchases. Mair (2011) argued that hotels frequently rely on offset credits rather than investing in on-site renewable energy or efficiency retrofits, raising questions about the depth of their decarbonisation commitments. More recent scholarship has identified a generational shift, with newer luxury properties in Asia incorporating solar photovoltaic systems and geothermal heating at the design stage rather than retrofitting older buildings (Chan et al., 2020).

2.2. Eco-Certification Models: Scope and Stringency

The proliferation of eco-labels in tourism has been well documented, with over 150 certification programmes operating globally by 2020 (Font & Buckley, 2001; Sasidharan et al., 2002). Among the most widely adopted in luxury hospitality are LEED, which originated in the built environment sector and emphasises energy performance and materials selection; Green Globe, a travel and tourism-specific scheme with over 500 certified properties; EarthCheck, an Australian-based programme focused on benchmarking and continuous improvement; and Green Key, operated by the Foundation for Environmental Education with strong penetration in Europe and expanding reach in developing regions (Graci & Dodds, 2015).

Comparative analyses of these schemes have revealed significant differences in assessment rigour. Karlsson and Dolnicar (2016) found that LEED's prescriptive point-based system imposed more demanding energy thresholds than Green Globe's management-system approach. However, EarthCheck's annual benchmarking requirements were found to drive more sustained improvements over time, as properties faced reputational risk from declining performance scores (Griffin & DeLacey, 2002). Green Key, while less stringent in its technical requirements, achieved broader adoption due to lower compliance costs, making it accessible to smaller properties in emerging markets (Dodds & Joppe, 2005).

2.3. Institutional Pressures and Regional Contexts

Institutional theory provides a useful lens for understanding why hotels adopt certification. DiMaggio and Powell's (1983) framework of coercive, mimetic, and normative pressures has been applied to hotel sustainability by several scholars. In Southeast Asia, government-mandated green building codes in Singapore and Thailand have created coercive pressures favouring LEED adoption (Yusof & Jamaludin, 2013). In Latin America, mimetic pressures from international chains entering markets like Mexico and Colombia have driven certification uptake, often through brand-level sustainability mandates rather than local regulation (Segarra-Oña et al., 2012). In Sub-Saharan Africa, normative pressures from ecotourism NGOs and conservation partnerships have been more influential than either regulation or market competition (Spenceley & Meyer, 2012).

III. METHODOLOGY

This study adopted a comparative qualitative design, combining document analysis with semi-structured interviews. The sample comprised 24 luxury hotel properties (five-star or equivalent) distributed across eight countries in three regions: Southeast Asia (Thailand, Vietnam, Indonesia), Latin America (Mexico, Colombia, Costa Rica), and Sub-Saharan Africa (Kenya, South Africa). Six properties held LEED certification, seven were Green Globe certified, six had EarthCheck certification, and five operated under Green Key.

Document analysis focused on publicly available sustainability reports, environmental policy statements, and certification audit summaries from each property covering the period 2018–2023. A structured coding framework was developed based on the carbon neutrality dimensions identified in the literature: energy efficiency measures, renewable energy adoption, carbon offset programmes, waste diversion practices, and water conservation initiatives.

Semi-structured interviews were conducted with 36 sustainability managers and general managers between March and September 2023. Interviews lasted between 45 and 75 minutes and were conducted via video conference in English or with interpreter assistance. All interviews were transcribed verbatim and analysed using thematic analysis following Braun and Clarke's (2006) six-phase protocol. Inter-coder reliability was established with a second researcher coding a random 20 percent subsample, yielding a Cohen's kappa of 0.83.

IV. RESULTS AND ANALYSIS

4.1. Certification Requirements and Carbon Neutrality Provisions

Analysis of certification documentation revealed marked differences in how each scheme addresses carbon neutrality. Table 1 presents a comparative summary of key provisions across the four certification models.

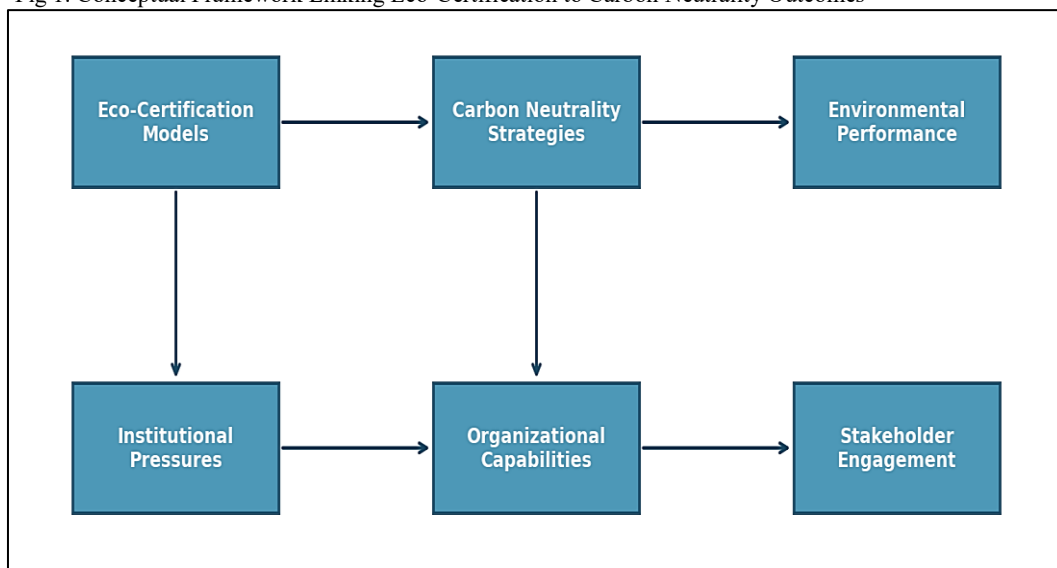
Table 1. Comparative Analysis of Eco-Certification Carbon Neutrality Provisions

Dimension	LEED	Green Globe	EarthCheck	Green Key
Energy Efficiency Target	30% reduction from baseline	20% reduction over 3 years	Annual benchmark improvement	10% reduction recommended
Renewable Energy Requirement	Mandatory on-site or procurement	Encouraged but not mandatory	Benchmarked annually	Optional criteria
Carbon Offset Policy	Permitted for residual only	Accepted as primary strategy	Permitted with verification	No specific policy
Waste Diversion Target	75% from landfill	50% minimum diversion	Progressive annual targets	30% minimum diversion
Water Conservation Target	40% reduction from baseline	25% reduction over 3 years	Annual benchmark improvement	15% reduction recommended

As Table 1 illustrates, LEED imposed the most stringent quantitative targets across all five dimensions, while Green Key operated primarily through recommended rather than mandatory thresholds. EarthCheck's benchmarking approach occupied a middle ground, requiring annual improvement without specifying fixed reduction percentages. Green Globe permitted carbon offsets as a primary compliance strategy, which several interviewees noted reduced incentives for direct emission reductions.

Figure 1 presents the conceptual framework guiding this analysis, illustrating the hypothesised relationships between eco-certification models, carbon neutrality strategies, and environmental performance outcomes, mediated by institutional pressures, organisational capabilities, and stakeholder engagement.

Fig 1. Conceptual Framework Linking Eco-Certification to Carbon Neutrality Outcomes



4.2. Regional Patterns in Carbon Neutrality Strategies

Southeast Asian properties demonstrated the strongest orientation toward renewable energy adoption. Among the eight properties surveyed in Thailand, Vietnam, and Indonesia, six had installed rooftop solar photovoltaic arrays, and three had entered power purchase agreements for off-site wind energy. A sustainability manager at a LEED-certified resort in Bali explained that government feed-in tariffs made solar investment financially attractive, noting that 'the payback period dropped from eight years to under five once the provincial subsidy was factored in.'

Latin American properties showed greater emphasis on carbon offset programmes, with five of eight properties purchasing verified emission reduction credits rather than investing in on-site renewable infrastructure. Interviewees cited grid instability and limited access to renewable energy procurement options as contributing factors. One Green Globe-certified hotel in Cancún reported that offset purchases constituted 70 percent of its reported carbon reduction, a figure that raised concerns among auditors about the permanence of claimed reductions.

Sub-Saharan African properties exhibited a distinctive pattern centred on waste reduction and water conservation, reflecting the acute resource constraints facing hospitality operators in Kenya and South Africa. Several properties had implemented greywater recycling systems and biogas digesters that converted food waste into cooking fuel, effectively addressing both waste management and energy generation. An EarthCheck-certified lodge in the Masai Mara described its biogas programme as 'born out of necessity rather than certification pressure we simply could not afford to truck in propane gas.'

Fig 2. Eco-Certification Performance Scores Across Sustainability Dimensions

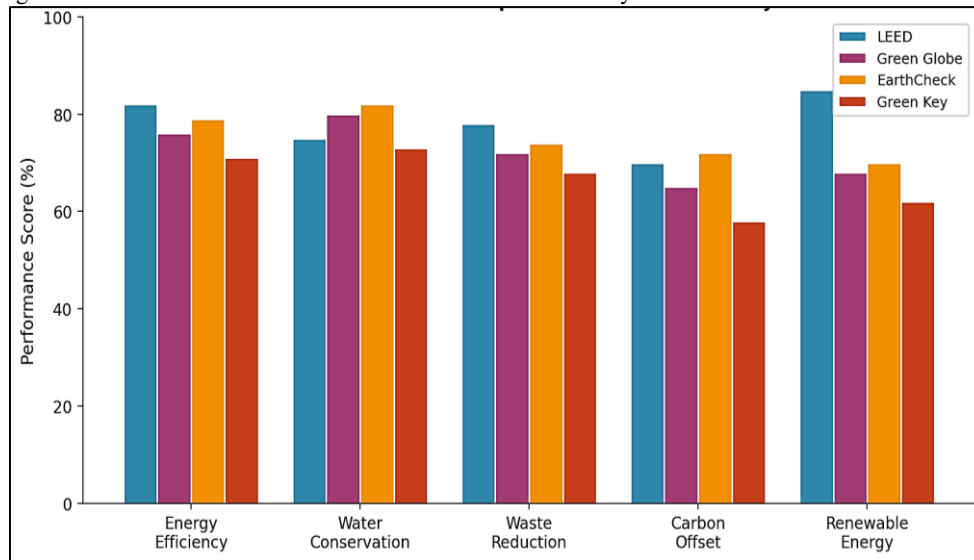


Figure 2 summarises performance scores derived from certification audit reports and sustainability disclosures across five key dimensions. LEED-certified properties achieved the highest scores in energy efficiency and renewable energy adoption, consistent with the programme's built-environment origins. EarthCheck properties led in water conservation, reflecting the programme's emphasis on resource benchmarking. The performance gap between LEED and Green Key was most pronounced in carbon offset rigour and renewable energy requirements.

4.3. Barriers to Carbon Neutrality Achievement

Table 2. Reported Barriers to Carbon Neutrality by Region and Certification Type

Barrier	Southeast Asia (n=8)	Latin America (n=8)	Sub-Saharan Africa (n=8)
High upfront capital costs	62%	88%	75%
Grid instability / unreliable energy	25%	75%	88%
Limited local technical expertise	38%	50%	75%
Weak regulatory incentives	25%	63%	50%
Guest expectations for luxury amenities	75%	63%	50%
Supply chain fragmentation	50%	75%	88%

Table 2 reveals that financial barriers were prevalent across all regions but manifested differently. Southeast Asian properties identified guest expectations as the most frequently cited barrier, reflecting the tension between maintaining luxury service standards and reducing energy-intensive amenities. Latin American and Sub-Saharan African properties faced more fundamental infrastructure challenges, with grid instability and supply chain fragmentation limiting their capacity to implement energy efficiency measures even when financial resources were available.

V. DISCUSSION

The findings of this study contribute to several ongoing debates in sustainable hospitality scholarship. First, the substantial variation in certification stringency documented here supports the argument advanced by Karlsson and Dolnicar (2016) that not all eco-labels are created equal. The gap between LEED's mandatory renewable energy provisions and Green Key's recommended targets suggests that travellers and investors should not treat certification as an undifferentiated signal of environmental performance. This has practical consequences for destination marketing organisations and procurement policies that reference 'certified' status without distinguishing among programmes.

Second, the regional patterns identified in this study complicate the assumption that certification operates uniformly across geographic contexts. Institutional theory helps explain these differences: where coercive pressures (government mandates, building codes) align with certification requirements, as in Southeast Asia, adoption tends to be deeper and more technically oriented. Where such pressures are absent, as in parts of Latin America, hotels may satisfy certification criteria through offset purchases rather than operational changes, a pattern that Chen and Tung (2014) have termed 'paper compliance.'

Third, the prominence of necessity-driven innovation in Sub-Saharan Africa challenges the assumption that sustainability in luxury hospitality is primarily a market-driven phenomenon. The biogas digesters and greywater systems observed in Kenyan and South African properties were developed in response to resource scarcity rather than certification pressure or guest demand. This finding resonates with Scheyvens and Hughes' (2019) observation that sustainability practices in developing countries often emerge from pragmatic adaptation rather than strategic positioning.

The study also raises questions about the role of carbon offsets in certification frameworks. Green Globe's acceptance of offsets as a primary compliance mechanism appeared to reduce incentives for on-site emission reductions, consistent with the moral hazard concerns raised by Gössling (2009). Properties that relied heavily on offset purchases showed lower rates of renewable energy investment and energy efficiency improvement than those certified under LEED or EarthCheck, where offsets were restricted to residual emissions after reduction measures had been exhausted.

VI. CONCLUSION AND IMPLICATIONS

This study examined how four eco-certification models shape carbon neutrality strategies among luxury hotels in emerging economies, revealing significant variation in both certification stringency and regional implementation patterns. LEED and EarthCheck emerged as more effective drivers of measurable carbon reduction, while Green Globe and Green Key's less prescriptive frameworks allowed greater reliance on offset mechanisms that may not produce lasting environmental benefits.

For hotel operators, the findings suggest that certification selection should be guided by alignment with genuine decarbonisation goals rather than marketing considerations alone. Properties seeking to achieve substantive carbon reductions may benefit from LEED or EarthCheck frameworks that mandate measurable performance improvements, even where compliance costs are higher.

For certification bodies, the study highlights the need for greater standardisation of carbon accounting requirements and stricter limitations on offset-based compliance. The Global Sustainable Tourism Council's efforts to harmonise certification standards provide a promising avenue, but the current variation among schemes risks undermining consumer trust in eco-labels as reliable indicators of environmental performance.

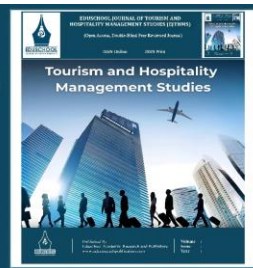
For policymakers in emerging economies, the regional disparities documented here underscore the importance of complementary regulatory frameworks that create enabling conditions for hotel decarbonisation. Feed-in tariffs, green building codes, and renewable energy procurement mandates were consistently associated with stronger carbon reduction outcomes, suggesting that voluntary certification alone is insufficient without supportive institutional infrastructure.

Limitations of this study include its qualitative design, which constrains generalisability, and its reliance on self-reported sustainability data that may be subject to reporting bias. Future research should employ longitudinal quantitative designs to track carbon reduction trajectories over time and across certification renewal cycles. Comparative studies examining the cost-effectiveness of different certification pathways would also address an important gap in the literature.

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Greenwashing Versus Genuine Sustainability: Consumer Trust in Eco-Tourism

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Abstract

The expansion of eco-tourism has been accompanied by growing concerns about greenwashing—the practice of making misleading environmental claims to attract sustainability-minded travellers. This study examines how perceived greenwashing and perceived genuine sustainability influence green trust, green scepticism, and repurchase intention among eco-tourists, with environmental knowledge serving as a moderating variable. An online survey was administered to 420 tourists who had visited eco-tourism destinations in Costa Rica, Thailand, or Kenya within the previous twelve months. Partial least squares structural equation modelling revealed that perceived greenwashing significantly increased green scepticism ($\beta = .52, p < .001$), which in turn reduced repurchase intention ($\beta = -.31, p < .001$). Conversely, perceived genuine sustainability strengthened green trust ($\beta = .48, p < .001$), which positively predicted repurchase intention ($\beta = .44, p < .001$). Environmental knowledge moderated the trust–repurchase relationship, with knowledgeable tourists exhibiting stronger loyalty when they perceived authenticity. The findings carry implications for destination marketing organisations, eco-certification bodies, and tourism operators seeking to differentiate genuine environmental commitments from superficial green claims.

Keywords: - Greenwashing, green trust, eco-tourism, repurchase intention, consumer scepticism, sustainable tourism

I. INTRODUCTION

The global eco-tourism market was valued at approximately USD 181 billion in 2019 and is projected to reach USD 333 billion by 2027 (Allied Market Research, 2020). This growth reflects a genuine shift in consumer preferences toward travel experiences that minimise environmental harm and contribute to local conservation. However, the commercial attractiveness of the 'eco' label has incentivised some tourism operators and destinations to make environmental claims that exceed their actual sustainability practices a phenomenon widely recognised as greenwashing (Delmas & Burbano, 2011).

Greenwashing in tourism takes multiple forms: hotels that display environmental policies without implementing them, destinations that market themselves as 'green' while permitting ecologically damaging development, and tour operators that promise carbon-neutral experiences through questionable offset mechanisms (Font et al., 2012). The consequences extend beyond individual consumer deception. When travellers encounter greenwashing, their scepticism may generalise to the broader eco-tourism sector, undermining trust in legitimate sustainability initiatives and discouraging the very consumer behaviours that drive market-based conservation (Chen & Chang, 2013).

Despite the significance of this issue, empirical research distinguishing the effects of perceived greenwashing from perceived genuine sustainability on tourist attitudes and behaviours remains limited. Most existing studies examine greenwashing in isolation, without comparing it directly with authentic sustainability signals, and few account for the role of consumer environmental knowledge in shaping responses to green claims (Martínez et al., 2020). This study addresses these gaps by simultaneously modelling the effects of perceived greenwashing and perceived genuine sustainability on green scepticism, green trust, and repurchase intention among eco-tourists across three major destinations.

II. LITERATURE REVIEW

2.1. Greenwashing in Tourism: Definitions and Manifestations

The term 'greenwashing' was coined by environmentalist Jay Westerveld in 1986, but academic attention to the concept accelerated only in the 2010s (Lyon & Montgomery, 2015). Delmas and Burbano (2011) defined greenwashing as the intersection of poor environmental performance with positive communication about environmental performance. In tourism, Font et al. (2012) identified four categories: false claims (fabricating environmental credentials), vague claims (using undefined terms like 'eco-friendly'), irrelevant claims (highlighting trivial practices while ignoring major impacts), and hidden trade-offs (emphasising one green attribute while concealing others).

The tourism sector may be particularly susceptible to greenwashing because of the experiential and intangible nature of travel products. Unlike physical goods where environmental claims can be verified through labels and certifications, the sustainability of a tourism experience is difficult for consumers to assess before, during, or even after consumption (Parguel et al., 2011). A hotel guest may notice visible recycling bins and towel reuse cards but remain unaware of the property's total energy consumption, water sourcing practices, or waste disposal methods.

2.2. Green Trust and Green Scepticism

Green trust, defined as a consumer's willingness to depend on a product or service based on their belief in its environmental claims (Chen, 2010), has been identified as a mediator between environmental marketing and purchase behaviour. In tourism contexts, Martínez (2015) found that green trust positively predicted satisfaction and loyalty among hotel guests, while Kang and Hur (2012) demonstrated that trust in a hotel's environmental practices was associated with willingness to pay a price premium.

Green scepticism represents the opposite pole a tendency to doubt or disbelieve environmental claims (Mohr et al., 1998). Scepticism may arise from past experiences with greenwashing, general distrust of corporate environmental motives, or awareness of the gap between environmental rhetoric and practice in the tourism industry (Rahman et al., 2015). Once established, scepticism can be difficult to reverse, as sceptical consumers tend to interpret ambiguous environmental information negatively (Skarmeas & Leonidou, 2013).

2.3. Theoretical Foundations: Signalling Theory and Attribution Theory

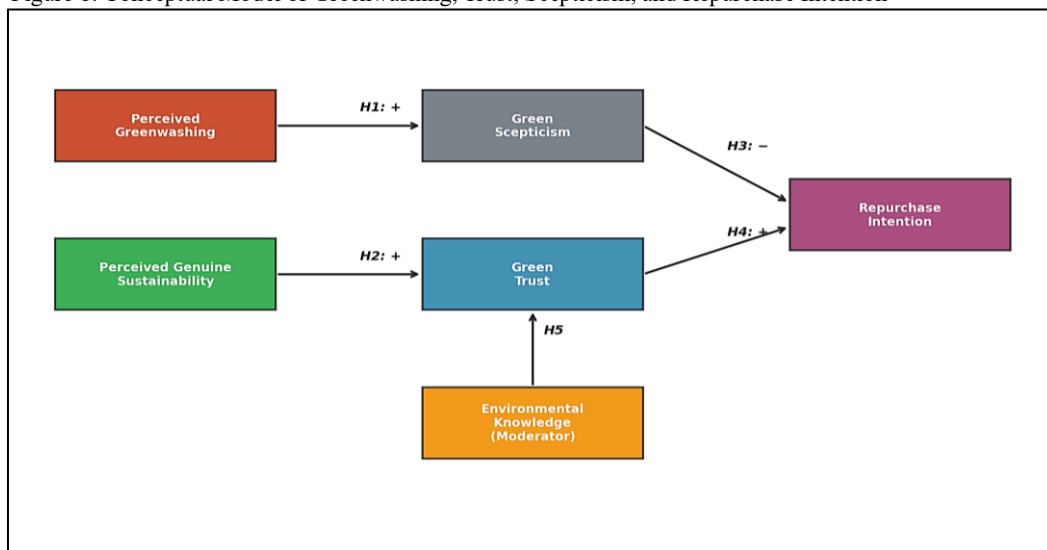
Signalling theory (Spence, 1973) provides a framework for understanding how eco-tourism operators communicate sustainability to consumers. Environmental certifications, sustainability reports, and green marketing materials function as signals of environmental quality. Effective signals must be costly to fake, observable by consumers, and correlated with actual quality (Connelly et al., 2011). Greenwashing occurs when operators send false signals environmental claims that are not costly to make and do not reflect actual practice.

Attribution theory (Kelley, 1973) explains how consumers interpret the motives behind green claims. When tourists attribute a destination's sustainability practices to genuine environmental concern (intrinsic motivation), they respond with trust and loyalty. When they attribute green claims to profit-seeking or image management (extrinsic motivation), scepticism and resentment follow (Nyilasy et al., 2014). Environmental knowledge may influence this attribution process: more knowledgeable consumers are better equipped to distinguish genuine from superficial sustainability signals.

III. CONCEPTUAL FRAMEWORK AND HYPOTHESES

Based on the theoretical foundations outlined above, Figure 1 presents the conceptual model guiding this study.

Figure 1. Conceptual Model of Greenwashing, Trust, Scepticism, and Repurchase Intention



The following hypotheses are proposed: H1: Perceived greenwashing positively influences green scepticism. H2: Perceived genuine sustainability positively influences green trust. H3: Green scepticism negatively influences repurchase intention. H4: Green trust positively influences repurchase intention. H5: Environmental knowledge moderates the relationship between green trust and repurchase intention, such that the effect is stronger among more knowledgeable tourists.

IV. METHODOLOGY

An online survey was administered to tourists who had visited eco-tourism destinations in Costa Rica, Thailand, or Kenya within the preceding twelve months. Respondents were recruited through a combination of tourism panel providers, eco-tourism community forums, and social media advertisements targeting travellers with eco-tourism interests. Data were collected between January and April 2024.

The survey instrument incorporated established scales. Perceived greenwashing was measured using the 6-item scale developed by Chen and Chang (2013). Perceived genuine sustainability used 5 items adapted from Martínez (2015). Green scepticism was assessed with Mohr et al.'s (1998) 4-item scale adapted for tourism contexts. Green trust was measured using Chen's (2010) 5-item scale. Repurchase intention used a 4-item scale from Han et al. (2009). Environmental knowledge was assessed using 6 items from Frick et al. (2004). All items used 7-point Likert scales. The questionnaire was available in English, Spanish, and Thai.

A total of 487 responses were received, of which 420 were complete and usable (86.2 percent completion rate). Data were analysed using PLS-SEM in SmartPLS 4.0, chosen for its suitability for exploratory models and non-normal data distributions (Hair et al., 2017).

V. RESULTS AND ANALYSIS

5.1. Measurement Model Assessment

Table 1. Measurement Model Validity: Factor Loadings, AVE, and Composite Reliability

Construct	Factor Loading Range	AVE	CR
Perceived Greenwashing	0.74 – 0.89	0.67	0.92
Perceived Genuine Sustainability	0.78 – 0.91	0.71	0.93
Green Scepticism	0.81 – 0.88	0.72	0.91
Green Trust	0.76 – 0.90	0.69	0.92
Repurchase Intention	0.83 – 0.92	0.76	0.93
Environmental Knowledge	0.72 – 0.86	0.63	0.90

Table 1 confirms that all constructs met the thresholds for convergent validity ($AVE > 0.50$) and internal consistency reliability ($CR > 0.70$). Factor loadings ranged from 0.72 to 0.92, all exceeding the 0.70 benchmark. Discriminant validity was confirmed through the Heterotrait-Monotrait ratio, with all values below 0.85.

5.2. Structural Model and Hypothesis Testing

Table 2. Hypothesis Testing Results from PLS-SEM Analysis

Hypothesis	Path	B	t-value	Result
H1	PGW → GS	.52	9.87***	Supported
H2	PGS → GT	.48	8.42***	Supported
H3	GS → RI	-.31	5.67***	Supported
H4	GT → RI	.44	7.93***	Supported
H5	EK × GT → RI	.17	3.12**	Supported

All five hypotheses received empirical support (Table 2). Perceived greenwashing was a strong predictor of green scepticism ($\beta = .52$, $p < .001$), confirming that tourists who detect misleading environmental claims develop generalised doubt about sustainability in tourism. Perceived genuine sustainability had a similarly strong positive effect on green trust ($\beta = .48$, $p < .001$). The model explained 47 percent of variance in repurchase intention.

Figure 2. PLS-SEM Path Coefficients for the Greenwashing–Trust–Repurchase Model

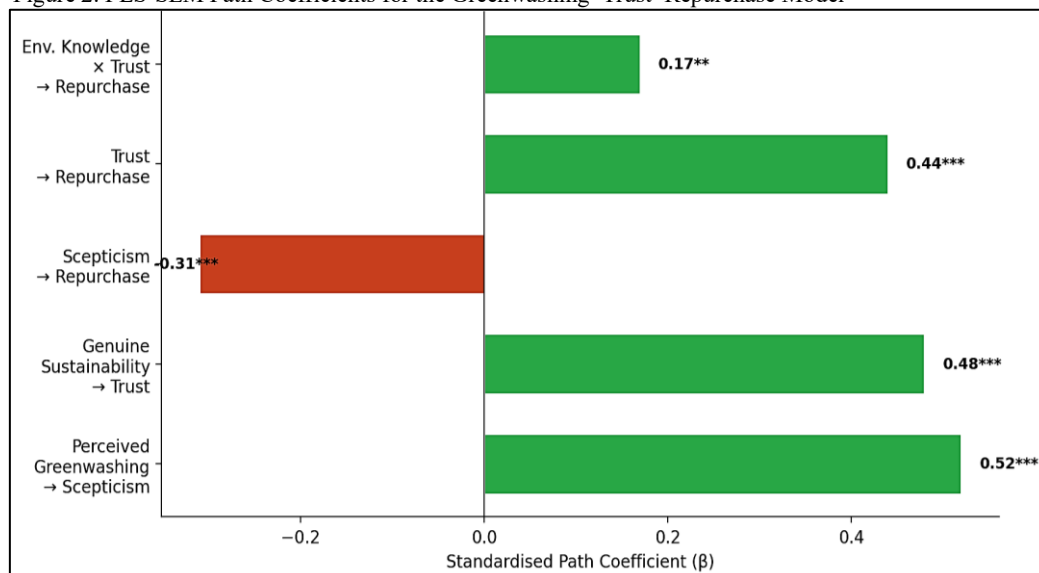


Figure 2 visualises the path coefficients. The negative path from scepticism to repurchase intention ($\beta = -.31$) was weaker than the positive path from trust to repurchase intention ($\beta = .44$), suggesting that building genuine trust may be more effective at driving loyalty than merely avoiding scepticism. The moderating effect of environmental knowledge ($\beta = .17, p < .01$) indicates that knowledgeable tourists are more discerning they reward genuine sustainability with stronger loyalty but are also less tolerant of greenwashing.

VI. DISCUSSION

The results of this study contribute to the growing body of evidence that greenwashing in tourism carries real economic consequences. The strong association between perceived greenwashing and green scepticism confirms that tourists are not passive recipients of environmental marketing they actively evaluate green claims and adjust their attitudes accordingly. The attribution theory framework proves useful here: when tourists attribute green claims to self-serving motives rather than genuine environmental concern, the resulting scepticism spills over into reduced repurchase intention.

The asymmetry between the scepticism and trust pathways is noteworthy. The fact that green trust exerts a stronger positive effect on repurchase intention than green scepticism exerts a negative effect suggests that the rewards for genuine sustainability are greater than the penalties for perceived greenwashing. This finding challenges the common assumption that greenwashing primarily operates through reputational damage and implies that authentic sustainability can function as a competitive advantage beyond mere risk mitigation.

The moderating role of environmental knowledge introduces a segmentation dimension that has practical value. Environmentally knowledgeable tourists who tend to be higher-spending, more loyal, and more likely to generate positive word-of-mouth (Dolnicar & Leisch, 2008) are precisely the segment most sensitive to greenwashing and most responsive to authenticity. For destinations and operators targeting this segment, the returns to genuine sustainability investment are amplified, while the costs of greenwashing are magnified.

Cross-destination comparisons revealed that respondents who had visited Costa Rica reported the highest levels of perceived genuine sustainability and the lowest levels of perceived greenwashing, consistent with Costa Rica's long-standing reputation for ecotourism governance and its Certification for Sustainable Tourism programme (Bien, 2006). Thailand respondents reported the highest scepticism scores, which may reflect the visible contradictions between mass tourism development and eco-tourism marketing in popular Thai destinations. Kenya respondents fell between the two, with community-based conservation areas generating stronger trust than commercially operated eco-lodges.

VII. CONCLUSION AND IMPLICATIONS

This study demonstrates that perceived greenwashing and perceived genuine sustainability operate through distinct psychological pathways scepticism and trust, respectively to influence eco-tourist repurchase intention. Environmental knowledge amplifies these effects, making educated tourists both more rewarding to satisfy and more costly to deceive.

For tourism practitioners, the findings argue for a shift from environmental marketing to environmental transparency. Destinations and operators that provide verifiable evidence of their sustainability practices third-party certifications, published environmental performance data, transparent reporting of challenges alongside achievements are more likely to build the green trust that drives long-term loyalty. Conversely, operators that rely on vague or unsubstantiated green claims risk triggering scepticism that not only reduces their own repeat visitation but may damage the broader eco-tourism sector.

For policymakers and certification bodies, the study reinforces the case for stricter regulation of environmental claims in tourism marketing. Certification programmes that provide consumers with accessible, comparable sustainability information can serve as credible signals that reduce information asymmetry and reward genuine performers.

Limitations include the cross-sectional design, potential self-selection bias among respondents recruited through eco-tourism channels, and the retrospective nature of destination experience assessment. Future research should employ longitudinal or experimental designs to examine how trust and scepticism evolve over repeated exposure to green claims and across different stages of the travel decision process.

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