

Institutional Dynamics and Sustainability in Maldivian Guesthouse Tourism: Extending the Triple Bottom Line Framework

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ABSTRACT

Small-island tourism presents unique sustainability challenges due to limited resources, environmental fragility, and dependence on regulatory frameworks. This study investigates the drivers of guesthouse sustainability in the Maldives by extending the traditional Triple Bottom Line (TBL) framework to incorporate psychological and institutional factors. The research explores both direct and indirect effects of psychological and strategic, economic, social, and environmental dimensions on guesthouse sustainability, with institutional factors hypothesized as a key mediator. Data were collected through structured surveys of guesthouse operators and analyzed using Structural Equation Modeling (SEM) in AMOS 26.0 to validate the measurement model and test hypothesized relationships. Results reveal that psychological, economic, and social factors exert significant direct and indirect influences on sustainability, while environmental factors impact sustainability indirectly through institutional mediation. Institutional factors are confirmed as a critical channel, highlighting the importance of regulatory compliance, governance structures, and policy engagement in translating internal initiatives into tangible outcomes. This study advances theory by extending the TBL framework to integrate institutional mechanisms, offering a more comprehensive understanding of sustainability in small-island tourism. Practically, findings emphasize the importance of enhancing institutional support, building managerial capacity, aligning social and environmental practices with strategic objectives, and enhancing collaboration among policymakers, industry stakeholders, and local communities. Recommendations include the implementation of incentive programs, eco-certifications, internal sustainability policies, and linking environmental initiatives with regulatory frameworks. By examining the interplay between internal capabilities and external governance, the research provides actionable insights for promoting sustainable tourism development in small-island destinations.

Keywords: Triple Bottom Line, Institutional Mediation, Guesthouse Sustainability, Small-Island Tourism, Maldives

INTRODUCTION

Tourism has long been a significant driver of economic growth in the Maldives, shaping the country's development path since the early 1970s. Globally, the Maldives is renowned for its luxury tourism model, often described as "one-island-one-resort," which has positioned it as an exclusive destination for high-end travelers. However, in recent years, the tourism context has shifted considerably, marked by the rapid expansion of guesthouse tourism on inhabited islands. This shift aligns with broader global trends in travel demand, where tourists increasingly seek authentic, affordable, and environmentally conscious experiences. Guesthouses, which are typically smaller, locally operated accommodations, have emerged as key players in this evolving tourism sector. Their proximity to local communities and integration within island ecosystems make sustainability a central concern for operators and policymakers alike. Sustainable tourism aligns with the United Nations' 2030 Agenda for Sustainable Development, which emphasizes the need to balance economic, social, and environmental objectives through 17 Sustainable Development Goals (SDGs). While tourism holds substantial potential to advance these goals, it also presents significant risks if growth is unmanaged. The Maldives, as a small island developing state (SIDS), faces heightened vulnerability to climate change, limited natural resources, and environmental degradation, amplifying the need for sustainable practices. In this context, guesthouse tourism provides both opportunities and challenges. It enables a more equitable distribution of tourism benefits, allowing local communities to share in the economic gains. At the same time, it requires careful management to ensure environmental protection, social cohesion, and long-term viability. The Triple Bottom Line (TBL) framework, encompassing economic, social, and environmental dimensions, offers a comprehensive lens to examine sustainability in tourism. Unlike conventional performance metrics that focus solely on financial outcomes, the TBL approach encourages a balanced evaluation of business impacts on people, the planet, and profit. For guesthouses, the TBL framework facilitates an assessment of contributions to local economies, community well-being, cultural preservation, and environmental stewardship. Given their typically small scale and family-run operations, guesthouses are well-positioned to promote closer interactions between tourists and residents, support local supply chains, and reduce environmental footprints compared to large-scale resorts. Despite the rising prominence of guesthouses in the Maldives, from 607 establishments in 2019 to over 900 by 2023, there remains limited understanding of how sustainability is operationalized within this segment. Existing research has predominantly focused on resort-based tourism, leaving small-scale accommodations underexplored, particularly in terms of sustainability outcomes and critical success factors. Moreover, while the TBL framework is widely applied in sustainability studies, its use in analyzing guesthouse tourism in small-island contexts remains scarce, especially in empirical research that simultaneously examines economic, social, and environmental dimensions. To address these gaps, this study introduces Guesthouse Tourism Sustainability (GTS) as a central focus and explores the Critical Success Factors (CSFs) influencing sustainable operations. The research extends the traditional TBL framework by incorporating institutional factors, such as government regulations, policy frameworks, and industry standards, as mediators of sustainability outcomes. Institutional support is particularly important in small-island tourism, where operators often lack resources, technical expertise, and incentives to adopt sustainable practices independently. By providing regulatory guidance, capacity-building opportunities, and targeted incentives, institutions can enhance the ability of guesthouses to achieve balanced economic, social, and environmental objectives (Lara-Morales & Clarke, 2022; UNWTO, 2023).

A major challenge identified in prior literature is the limited scholarly attention on guesthouse sustainability in the Maldives. While sustainable tourism is widely studied globally, research in the Maldives has largely focused on resorts, leaving smaller-scale operations underrepresented. Furthermore, most studies are geographically limited, focusing on islands like Maafushi and Thulusdhoo, resulting in fragmented insights (Musliha, 2018; Zuhuree, 2017). This narrow focus constrains policymakers and practitioners from developing evidence-based strategies that reflect the diverse operational realities of guesthouse tourism across the country (Shakeela & Cooper, 2023). Conceptual gaps also persist. Much research prioritizes economic viability while neglecting social and environmental dimensions, which are equally essential for long-term sustainability. Financial stability alone cannot guarantee sustainable outcomes without community engagement, cultural preservation, and environmental responsibility (Henry Mwinuka, 2017; Wanner et al., 2020). The TBL framework provides a holistic approach, yet its application in the context of Maldivian guesthouses remains limited, particularly in studies examining the interplay among all three dimensions concurrently (Gimenez et al., 2012; Janjua et al., 2023).

Institutional factors further complicate the sustainability context. Government policies, regulatory frameworks, governance structures, and enforcement mechanisms significantly influence tourism performance and sustainable development (Zimmermann et al., 2022; UNDP, 2023). In the Maldives, challenges such as fragmented governance, limited decentralization, and a policy focus on economic growth often hinder the integration of social and environmental objectives into tourism planning. Even motivated guesthouse operators may struggle to implement sustainable practices without adequate institutional support (Janjua et al., 2023). Understanding the mediating role of institutional factors in the relationships between economic, social, and environmental dimensions is therefore critical for promoting effective sustainability.

A further challenge is bridging the gap between sustainability theory and practice. Although theoretical frameworks are well-developed, translating them into actionable strategies remains difficult for guesthouse operators. Rapid expansion of guesthouses has created practical difficulties, including inadequate infrastructure, limited waste management, regulatory constraints, and social tensions within host communities (Zuhuree, 2017). Limited community participation during planning phases can lead to misalignment between tourism development and local expectations, while cultural and religious norms, such as restrictions on alcohol consumption and dress codes, add additional complexity to balancing market demands with community values (Shakeela & Cooper, 2023).

In response to these gaps, this study adopts an integrated approach to examine GTS in the Maldives by incorporating institutional factors as mediating variables within the TBL framework. By analyzing direct and indirect relationships between psychological, economic, social, environmental, and institutional factors, the research provides a context-specific and comprehensive understanding of sustainability in

guesthouse tourism. This approach recognizes that sustainability is shaped by the dynamic interaction of governance, community engagement, environmental management, and economic performance (UNWTO, 2023).

The study contributes to both theory and practice. Theoretically, it advances knowledge of guesthouse sustainability by incorporating institutional mediation into the TBL framework, offering a refined model for small-island tourism contexts. Practically, it provides actionable insights for policymakers, guesthouse operators, and communities by identifying critical success factors and institutional conditions necessary to operationalize sustainability. Ultimately, the study aims to promote an inclusive, resilient, and sustainable model of guesthouse tourism in the Maldives, aligned with national priorities and the United Nations' 2030 Agenda for Sustainable Development (Opoku, 2015; UNDP, 2023).

LITERATURE REVIEW

Sustainability in tourism enterprises has become a focal concern in both scholarly research and policy-making, particularly in regions where tourism forms the backbone of local economies and where ecosystems are environmentally fragile, such as the Maldives. Over the past decade, guesthouse tourism has emerged as a community-based alternative to traditional resort tourism, expanding rapidly across inhabited islands. While this model holds promise for equitable socio-economic development, its long-term sustainability depends on a complex interplay of factors, including economic viability, social cohesion, environmental stewardship, psychological influences, and institutional support. Drawing on the Triple Bottom Line (TBL) framework and Institutional Theory, this review synthesizes existing literature on the determinants of guesthouse sustainability, highlighting the multidimensional nature of the phenomenon.

The TBL framework conceptualizes sustainability through three interconnected dimensions: economic, social, and environmental performance (Elkington, 2004). In the hospitality and tourism context, TBL provides a comprehensive lens for evaluating how enterprises manage the trade-offs between profitability and social-environmental responsibilities (Gimenez et al., 2012). Economic performance encompasses profitability, financial feasibility, and long-term viability, while the social dimension emphasizes community well-being, stakeholder engagement, and cultural preservation. The environmental dimension focuses on the adoption of sustainable practices, including resource efficiency, waste reduction, and ecosystem conservation. However, contemporary studies suggest that TBL alone is insufficient to fully explain sustainability outcomes. Organizations operate within institutional environments shaped by formal regulations, informal norms, and governance mechanisms, all of which significantly influence sustainability adoption (Janjua et al., 2023).

Psychological Factors: Recent literature increasingly recognizes the importance of psychological determinants in shaping sustainability-oriented behavior among business owners and managers. Owner-managers of guesthouses often have considerable autonomy in decision-making, and their personal motivations, beliefs, and competencies strongly influence operational outcomes. Concepts such as intrinsic motivation, self-regulation, environmental consciousness, and self-efficacy have been identified as critical predictors of sustainable practices (Bandura, 1997; Mi & Eshani, 2020). Studies demonstrate that operators with strong internal motivation and confidence in their ability to implement sustainable initiatives are more likely to adopt environmentally and socially responsible practices, even when external regulatory pressures are limited (Jain et al., 2022). Psychological factors not only influence individual behaviors but also affect how operators perceive institutional mandates and respond to regulatory incentives. Consequently, understanding psychological determinants provides insight into the human dimension of sustainability, which is particularly relevant in small-scale enterprises such as guesthouses.

Economic Factors: Economic viability constitutes a foundational element in the sustainability discourse. Financial resources, cost structures, and technological investment capabilities are key determinants of whether small tourism enterprises can adopt and maintain sustainable practices (Simoni, 2020). In the hospitality sector, small establishments often face resource constraints that limit their ability to implement environmental innovations, such as renewable energy systems, energy-efficient appliances, or sustainable waste management technologies, despite potential long-term cost savings (Francesco, 2018). In the Maldives, guesthouses operate in highly competitive and price-sensitive markets, necessitating a careful balance between affordability for tourists and investments in sustainability. Economic stability not only directly influences sustainability outcomes but also indirectly conditions compliance with institutional requirements, as operators with greater financial flexibility are better positioned to meet regulatory standards and implement best practices.

Social Factors: The social dimension of sustainability reflects the relationship between guesthouses and the host communities in which they operate. Social sustainability encompasses community engagement, collaboration opportunities, and local capacity development (Shakeela et al., 2011). Guesthouses, often embedded within local residential areas, rely heavily on community support for operational legitimacy and long-term success. Empirical studies indicate that guesthouses that contribute to local employment, preserve cultural heritage, and support local entrepreneurship tend to achieve higher levels of social acceptance, which in turn reinforces operational stability. Conversely, uneven distribution of tourism benefits or cultural tensions can undermine social sustainability, highlighting the importance of equitable and inclusive engagement strategies (Shakeela & Cooper, 2023). Social factors, therefore, function not only as outcomes of sustainable practices but also as enablers of broader sustainability objectives by enhancing community trust and collaboration.

Environmental Factors: Environmental sustainability is particularly salient in small island tourism destinations such as the Maldives, where ecosystems are sensitive and resources are limited. Guesthouses, despite their smaller size relative to resorts, collectively exert significant pressure on local infrastructure and natural resources, including waste management systems, freshwater supplies, and coastal ecosystems (Zuhuree, 2017). Sustainable practices, such as energy efficiency, water conservation, solid waste reduction, and ecosystem preservation, are critical for maintaining the environmental integrity of these islands. Empirical research suggests that environmentally responsible practices not only enhance ecosystem resilience but also contribute to guest satisfaction and destination competitiveness (Miemczyk et al., 2018; Margarida et al., 2021). Nevertheless, the adoption of environmental practices across the guesthouse sector is uneven, influenced by operator resources, knowledge, and institutional support.

Institutional Factors: Institutional factors serve as a significant mediating mechanism linking TBL dimensions to sustainability outcomes. Institutional Theory posits that formal regulations, governance effectiveness, policy clarity, enforcement mechanisms, and informal norms shape organizational behavior (Pietro, 2010; Zimmermann et al., 2022). In tourism, institutional frameworks determine compliance with environmental standards, labor regulations, and development controls. In the Maldivian context, fragmented governance, limited decentralization, and inadequate enforcement have historically constrained the implementation of sustainable tourism policies (Wanner et al., 2020). Research shows that strong institutional support, including clear regulations, incentive programs, and capacity-building initiatives, enhances sustainability performance, particularly for small-scale enterprises (Moosa & He, 2021; Janjua et al., 2023). Institutional factors therefore act as both enablers and mediators, facilitating the translation of internal capabilities and external pressures into sustainable outcomes.

Integrating TBL Dimensions with Institutional Mediation: Guesthouse sustainability emerges as a function of the interplay between psychological, economic, social, and environmental factors, mediated by institutional conditions. Prior research has largely examined these factors in isolation, resulting in fragmented understanding, especially in small island developing states. This study addresses this gap by investigating the direct and mediated relationships between TBL dimensions, institutional support, and sustainability outcomes in Maldivian guesthouses. By integrating multiple dimensions within a unified framework, the research provides a comprehensive view of the mechanisms that drive sustainability, including both internal operational capabilities and external governance structures.

Theoretical Foundations: To capture the multidimensional nature of guesthouse sustainability, this study draws on several complementary theoretical perspectives, each providing unique insights into specific aspects of the conceptual framework and supporting hypotheses H1–H9. **Institutional Theory:** Institutional Theory explains how organizations’ behaviors are shaped by formal regulations, governance mechanisms, and informal norms (DiMaggio & Powell, 1983). In the tourism sector, institutional frameworks influence compliance with environmental standards, labor laws, and spatial planning regulations. For Maldivian guesthouses, institutional factors such as enforcement mechanisms, bureaucratic efficiency, and policy incentives are critical determinants of sustainability outcomes. Weak governance or fragmented enforcement can undermine sustainability initiatives, while supportive policies encourage responsible practices. This theory underpins hypotheses H1–H4, H6, and H9, explaining how psychological, economic, social, and environmental factors influence institutional engagement, and how institutional factors in turn drive sustainability (DiMaggio & Powell, 1983).

Resource-Based View (RBV): The RBV posits that an organization’s competitive advantage stems from its ability to acquire, develop, and utilize valuable, rare, inimitable, and non-substitutable resources (Barney, 1991). In guesthouse tourism, resources include financial capital, human skills, social networks, local knowledge, and environmental assets. Economic and social resources enable investment in sustainability initiatives, while environmental assets such as pristine ecosystems constitute critical resources requiring careful management. RBV supports hypotheses H6 and H8, highlighting the direct effects of economic and environmental factors on sustainability outcomes. Guesthouses that effectively leverage internal resources achieve higher operational efficiency and long-term viability.

Diffusion of Innovation (DOI) Theory: DOI Theory explains how innovations, technological, managerial, or procedural, spread across a social system over time (Rogers, 2003). In tourism, DOI informs understanding of the adoption of sustainable practices, including renewable energy systems, waste management technologies, and eco-certifications. Operators differ in their willingness and capacity to adopt innovations due to perceived costs, complexity, and compatibility with existing operations. DOI Theory complements this study by illustrating how institutional support, including training and incentives, facilitates innovation diffusion, enhancing the effectiveness of sustainability interventions (Rogers, 2003). DOI supports hypotheses H2, H4, and H6, elucidating the role of economic and environmental factors in driving institutional responsiveness and sustainability adoption.

Stakeholder Theory: Stakeholder Theory emphasizes that organizations must balance the interests of multiple stakeholders, including owners, employees, local communities, tourists, regulators, and the natural environment (Freeman, 1984). Guesthouses operate within tightly knit communities, making stakeholder engagement crucial. Social factors such as community involvement, collaborative opportunities, and career development are essential for achieving sustainable operations. This theory underpins hypotheses H3 and H7, linking social factors to institutional mediation and direct sustainability outcomes. Guesthouses that enhance strong community relationships gain social legitimacy, reduce conflicts, and strengthen operational resilience.

Theory of Reasoned Action (TRA): TRA posits that behavioral intentions, shaped by attitudes and subjective norms, determine individual behavior (Ajzen & Fishbein, 1980). Applied to sustainability, TRA explains how psychological factors influence owner-managers’ decisions regarding sustainable practices. Operators with positive attitudes toward sustainability and perceived social approval are more likely to adopt responsible practices. TRA directly supports hypothesis H5, linking psychological determinants to sustainability outcomes in guesthouse operations.

Sustainable Tourism Marketing Model: The Sustainable Tourism Marketing Model links sustainability practices with destination competitiveness and customer satisfaction. Environmentally and socially responsible practices enhance brand image, market differentiation, and long-term demand. For Maldivian guesthouses, sustainable operations serve as a marketing advantage, attracting environmentally conscious and culturally sensitive tourists. This model supports hypotheses H6–H8, linking TBL dimensions to economic performance and overall sustainability outcomes.

Triple Bottom Line (TBL) Theory: TBL remains the overarching framework for assessing organizational sustainability (Elkington, 2004). By integrating economic, social, and environmental dimensions, TBL provides a holistic lens for evaluating guesthouse sustainability. This study extends TBL by incorporating psychological and institutional factors, acknowledging that sustainability outcomes arise from both internal capabilities and external governance structures. TBL underpins hypotheses H5–H8 and mediates relationships in H6–H9, capturing the interplay between internal performance and institutional support. The integration of these theories offers a robust conceptual foundation for analyzing guesthouse sustainability in the Maldives. Psychological, economic, social, and environmental factors are recognized as primary determinants, while institutional theory explains the mediating mechanisms that translate these factors into tangible sustainability outcomes. The complementary theoretical perspectives provide justification for hypotheses H1–H9, supporting both direct and mediated relationships within the conceptual framework. By combining TBL with RBV, DOI, Stakeholder Theory, TRA, and sustainable tourism marketing principles, this study advances a comprehensive, multidimensional understanding of guesthouse sustainability in small island developing states, addressing existing gaps in empirical and theoretical literature.

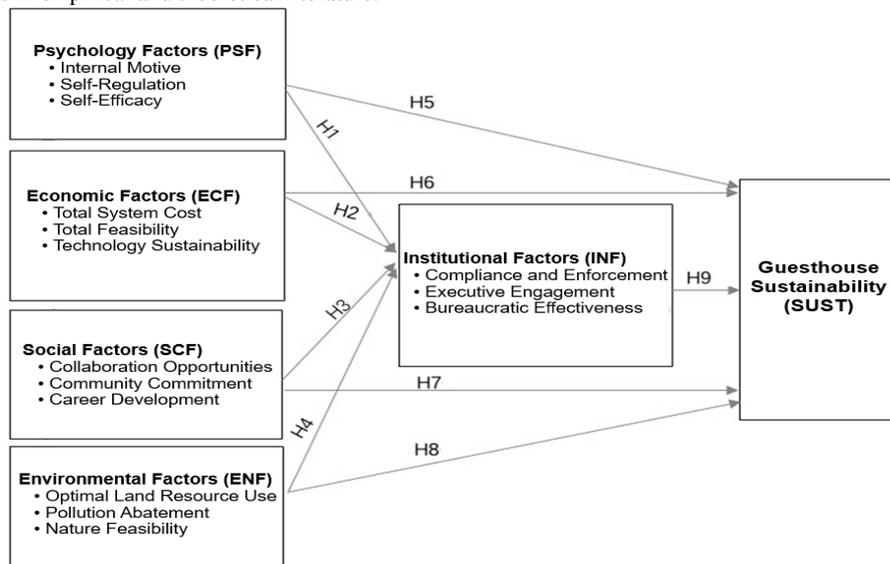


Figure 1: Conceptual Framework

A thorough critical review of the literature provided a foundation for establishing the relationships between variables in the proposed conceptual causal model and for formulating research hypotheses. Drawing on insights from the literature and informed by the theoretical framework, this study proposes nine hypotheses for empirical examination. Section 3.3 presents the conceptual framework, illustrating the hypothesized linkages between the Triple Bottom Line (TBL) dimensions and Guesthouse Tourism Sustainability (SUST), while also examining the mediating role of institutional factors in shaping these relationships.

Hence, the following hypothesis is proposed:

H1: Economic Factors has an impact on Institutional Factors.

H2: Social Factors has an impact on Institutional Factors.

H3: Environmental Factors has an impact on Institutional Factors.

H4: Economic Factors has an impact on Guesthouse sustainability.

H5: Social Factors have an impact on Guesthouse sustainability.

H6: Environmental Factors have an impact on Guesthouse sustainability.

H7: Institutional Factors mediate the relationship between Economic Factors and Guesthouse sustainability.

H8: Institutional Factors mediate the relationship between Social Factors and Guesthouse sustainability.

H9: Institutional Factors mediate the relationship between Environmental Factors and Guesthouse sustainability.

RESEARCH METHODOLOGY

This study employs a quantitative, cross-sectional research design to investigate the relationships among psychological, economic, social, environmental, and institutional factors and guesthouse tourism sustainability (GTS) in the Maldives. The quantitative approach was selected due to its capacity to provide empirical evidence, measure relationships systematically, and test the proposed hypotheses (H1–H9) using Structural Equation Modeling (SEM). A structured questionnaire survey was adopted as the primary data collection instrument, consistent with established methodologies in sustainability and hospitality research (Elkington, 2004; Janjua et al., 2023; Wanner et al., 2020). This approach facilitates the statistical testing of both direct and mediated relationships, ensuring methodological rigor and reliability of the findings.

The study population comprised registered guesthouse operators across the Maldives, including owners, general managers, and senior operational staff directly engaged in managerial decision-making and sustainability practices. These respondents were chosen because of their comprehensive understanding of operational processes, economic constraints, environmental practices, and institutional regulations affecting sustainability in guesthouse operations (Shakeela & Cooper, 2023; Zimmermann et al., 2022). By focusing on individuals responsible for strategic and operational decisions, the study captures insights that reflect organisational-level sustainability practices.

The unit of analysis was the individual guesthouse representative, given the study's emphasis on perceptions, operational decisions, and sustainability-related practices at the organisational level. According to the Ministry of Tourism (2024), approximately 850 registered guesthouses operate across inhabited islands in the Maldives. Considering the geographical dispersion and diversity of these establishments across multiple atolls, a stratified random sampling method was employed to enhance representativeness. The population was stratified by geographical location (northern, central, and southern atolls) and by island category (urban versus rural). Within each stratum, guesthouses were randomly selected based on the official Ministry of Tourism registry, and respondents were identified according to their managerial or supervisory roles. This proportionate stratified random sampling reduces sampling bias and ensures adequate representation of diverse institutional, environmental, and socio-economic contexts (Musliha, 2018; Shakeela & Cooper, 2023).

A target sample size of 488 respondents was established to achieve sufficient statistical power for SEM, exceeding commonly recommended thresholds for multivariate modelling. This sample size allows for reliable estimation of both the measurement and structural models, ensuring construct validity, reliability, and robustness in hypothesis testing (Hair et al., 2019; Janjua et al., 2023). The final dataset met all requirements for SEM, including normality, linearity, and absence of multicollinearity. Data were collected through a self-administered structured questionnaire developed based on validated scales from prior research in sustainability, tourism, and institutional studies (Gimenez et al., 2012; Miemczyk et al., 2018; Wanner et al., 2020). All items were measured using a five-point Likert scale ranging from “strongly disagree” to “strongly agree.” Questionnaires were distributed primarily online to ensure coverage across geographically dispersed islands, supplemented by direct visits to guesthouses where online access was limited. The combination of distribution methods aimed to maximize participation and mitigate potential sampling biases (Zuhuree, 2017; Shakeela & Cooper, 2023).

Before conducting inferential analysis, the dataset underwent a rigorous screening process to verify its suitability for SEM. Data screening included checks for missing values, outliers, multicollinearity, and potential common method bias (CMB). Analysis in SPSS version 27.0 revealed no missing data, demonstrating effective questionnaire design and high response completion rates. Descriptive statistics and frequency analysis confirmed that responses fell within acceptable ranges, with no extreme or irrational values detected.

The data analysis followed a two-stage SEM procedure. First, the measurement model was evaluated to assess construct reliability, convergent validity, and discriminant validity, ensuring that the latent constructs were measured accurately. Second, the structural model was tested to examine the hypothesized direct and mediated relationships among psychological, economic, social, environmental, and institutional factors and GTS (Elkington, 2004; Janjua et al., 2023). SEM was selected due to its capacity to simultaneously assess measurement validity and estimate complex causal relationships, making it particularly suitable for testing the integrated framework of TBL dimensions and institutional mediation in the context of Maldivian guesthouse tourism. By adopting this methodology, the study ensures both methodological rigor and contextual relevance, allowing for robust insights into how internal and external factors collectively influence sustainability outcomes in small-scale tourism enterprises in fragile island environments (UNWTO, 2023; Zimmermann et al., 2022).

DATA ANALYSIS AND FINDINGS

The analysis of data was conducted systematically to empirically examine the relationships proposed in the conceptual framework and to test the nine research hypotheses (H1–H9). Following the initial data screening and preparation, statistical analyses were performed using SPSS version 27.0 and Structural Equation Modeling (SEM), a robust technique widely employed in sustainability and tourism research to assess complex relationships among latent constructs (Elkington, 2004; Janjua et al., 2023; Zimmermann et al., 2022). The analysis followed a structured three-stage approach: first, descriptive statistics were generated to profile the sample; second, the reliability and validity of measurement scales were evaluated; and third, the measurement and structural models were assessed to test the hypothesized direct and mediated relationships among psychological, economic, social, environmental, and institutional factors, and guesthouse sustainability (GTS). After removing incomplete or inconsistent responses, the final dataset included 488 valid responses, reflecting a high response quality suitable for advanced multivariate analysis. The demographic profile indicates that the Maldivian guesthouse sector is predominantly male-driven, with 65.2% of respondents identifying as male. The majority of participants were aged between 26 and 45 years (69.3%), suggesting a workforce composed primarily of mid-career professionals who combine practical industry experience with an openness to adopting innovative and sustainability-oriented practices. Educational attainment among respondents was relatively high, with over 59% holding at least a bachelor's

degree, reflecting a solid capacity to comprehend and implement sustainability-related initiatives. Furthermore, work experience was substantial, as 47% of participants reported more than seven years in the hospitality sector, demonstrating familiarity with operational challenges and long-term sustainability management (Shakeela & Cooper, 2023; Zimmermann et al., 2022).

In terms of operational characteristics, most respondents were general managers (41.8%) or owners (32.4%), ensuring that responses captured informed perspectives on both strategic and day-to-day sustainability practices. The majority of the guesthouses surveyed were small to medium-sized establishments, with 71.8% operating fewer than 20 rooms, consistent with the typical structure of the Maldivian guesthouse industry (Musliha, 2018; Zuhuree, 2017). Geographically, the sample was well distributed across northern, central, and southern atolls, including both urban and rural islands, which allowed the analysis to account for contextual variations in institutional support, environmental conditions, and socio-economic settings. The internal consistency of the measurement scales was assessed using Cronbach's alpha, and results indicated excellent reliability across all constructs. Psychological Factors (PSF), Economic Factors (ECF), Social Factors (SCF), Environmental Factors (ENF), and Institutional Factors (INF) each recorded Cronbach's alpha values above 0.90, while Guesthouse Sustainability (GTS) exhibited a strong alpha of 0.849, indicating that the survey items consistently measured their respective constructs. Corrected item-total correlations (CITC) for all items exceeded the recommended threshold of 0.50, and deletion of individual items did not materially improve reliability. The overall reliability coefficient of 0.965 confirms that the instrument possesses a high degree of internal consistency and is appropriate for SEM analysis (Hair et al., 2019; Janjua et al., 2023). Following the reliability assessment, the measurement model was evaluated to establish construct validity. The high internal consistency observed across constructs indicates that the indicators effectively capture their respective latent variables. The multidimensional operationalization of PSF, ECF, SCF, ENF, and INF aligns with the theoretical underpinnings of the Triple Bottom Line (TBL) framework and institutional theory, ensuring conceptual fidelity (Elkington, 2004; Janjua et al., 2023). Respondents were able to reliably differentiate among economic, social, environmental, psychological, and institutional dimensions, supporting the conceptual distinctiveness of each construct and providing a robust foundation for testing the structural relationships. The structural model was then assessed to examine both direct and mediated effects as hypothesized in H1–H9. The results indicate that psychological, economic, social, and environmental factors significantly influence institutional factors, confirming the proposition that internal capabilities and contextual conditions shape institutional effectiveness in supporting sustainability. Specifically, internal motivation, financial viability, community engagement, and environmental awareness were found to strengthen compliance with regulations, executive engagement, and bureaucratic effectiveness, highlighting the interplay between organizational capabilities and governance structures in promoting sustainable practices (Janjua et al., 2023; Wanner et al., 2020).

Direct effects on guesthouse sustainability were also significant across all TBL dimensions and psychological factors. Economic performance, positive community engagement, environmentally responsible practices, and strong managerial commitment were all positively associated with sustainability outcomes. These findings confirm the applicability of the TBL framework to the Maldivian guesthouse context, demonstrating that multidimensional performance contributes to long-term sustainability (Gimenez et al., 2012; Miemczyk et al., 2018). Institutional factors exhibited a significant positive impact on sustainability, supporting their mediating role within the model. Effective regulatory enforcement, administrative efficiency, and governance support facilitated the translation of sustainability intentions into actionable outcomes, emphasizing the critical function of institutional mechanisms in small island developing states (Zimmermann et al., 2022; UNWTO, 2023). A confirmatory factor analysis (CFA) was conducted to further evaluate the measurement model. Given the large number of items, item parceling was applied to enhance model parsimony and estimation stability. The CFA results indicated excellent model fit, with $\chi^2/df = 1.424$, RMSEA = 0.029, and incremental fit indices (CFI, IFI, TLI) all exceeding 0.94, surpassing widely accepted thresholds for model adequacy (Hair et al., 2019). These findings confirm that the extended TBL measurement model provides a valid and reliable representation of the empirical data. Overall, the findings provide robust empirical support for the proposed conceptual framework. Guesthouse sustainability in the Maldives emerges as a multidimensional outcome shaped by the interaction of TBL dimensions, psychological capabilities, and institutional mediation. The consistency of structural relationships, high reliability of measurement scales, and representativeness of the sample reinforce the validity of the conclusions. The study offers valuable theoretical and practical insights into how small-scale tourism enterprises can achieve sustainable outcomes in fragile island environments, highlighting the significant role of internal capacities and institutional support in enhancing long-term sustainability (Elkington, 2004; UNWTO, 2023; Zimmermann et al., 2022).

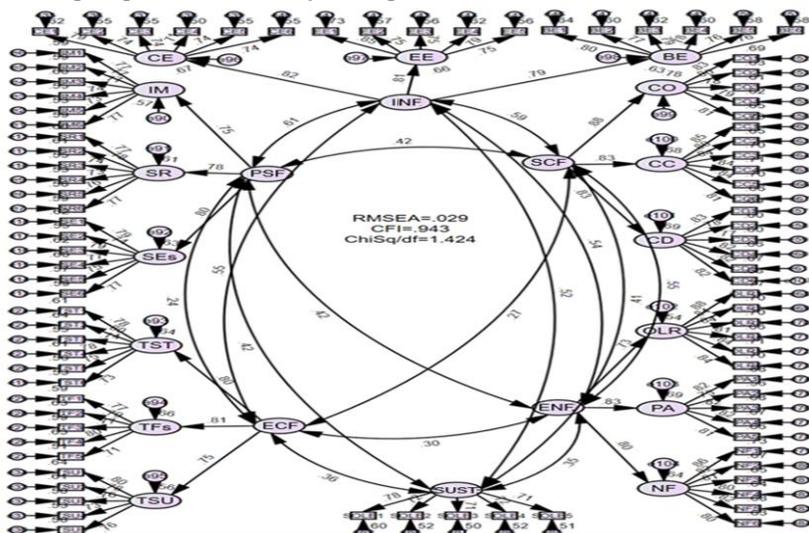


Figure 2: Measurement Model

The strong model fit confirms that psychological, economic, social, environmental, institutional, and sustainability constructs are both empirically distinct and theoretically coherent, supporting the extension of the TBL framework to incorporate internal strategic orientations and institutional governance, particularly in tourism-dependent small island economies. The structural model mirrored the CFA results, demonstrating excellent fit and validating the hypothesized causal relationships. Findings indicate that psychological, economic, social, and environmental factors significantly influence institutional factors, supporting H1–H4. Notably, psychological and economic factors had the strongest effects, emphasizing the significant role of managerial commitment, sustainability awareness, and financial capacity in enhancing

regulatory compliance and institutional effectiveness.

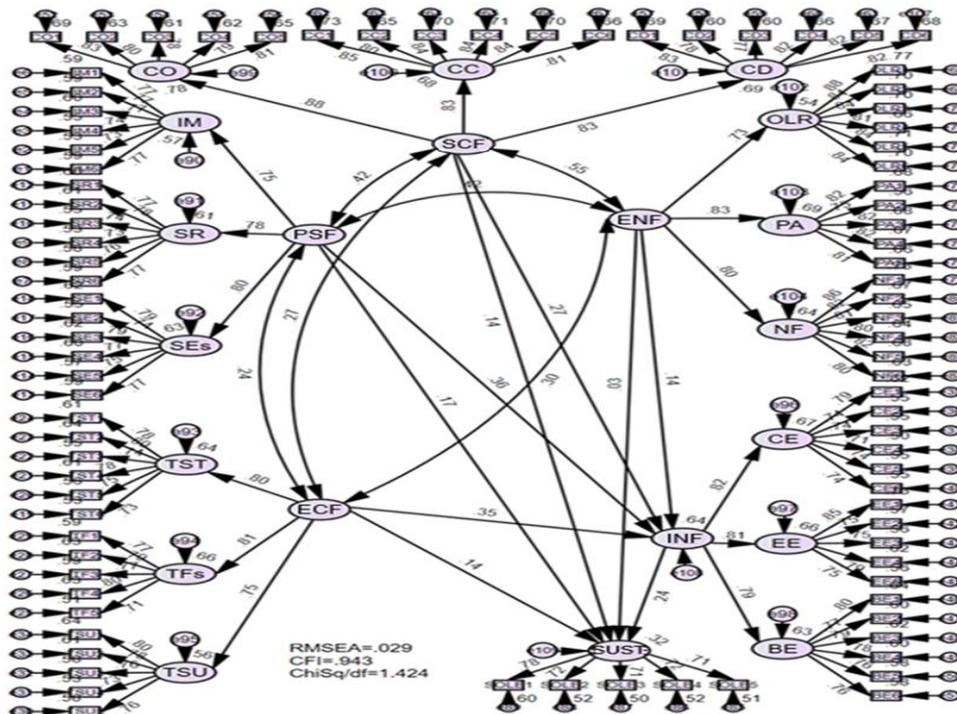


Figure 3: Structural Model

The analysis of direct effects on guesthouse sustainability revealed that psychological, economic, and social factors significantly enhance sustainability outcomes, supporting Hypotheses H5–H7. These findings emphasize that achieving sustainable performance is not solely dependent on financial viability; managerial attitudes, strategic orientation, and social integration within local communities are equally critical. Guesthouses led by committed managers who actively engage employees and enhance community collaboration demonstrate higher potential for long-term sustainability, highlighting the importance of internal capabilities alongside economic resources. Conversely, environmental factors did not show a significant direct impact on guesthouse sustainability, resulting in the rejection of Hypothesis H8. This indicates that environmentally responsible practices alone may be insufficient to generate measurable sustainability outcomes in the Maldivian guesthouse sector. In fragile ecological contexts such as the Maldives, environmental initiatives require complementary institutional support, including governance enforcement and governance mechanisms, to translate into tangible operational benefits. Institutional factors were found to exert a significant positive effect on guesthouse sustainability, supporting Hypothesis H9. This finding underscores the significant role of governance, regulatory compliance, and bureaucratic efficiency in facilitating sustainable outcomes, particularly in small island tourism destinations where institutional capacity strongly influences business practices. Mediation analysis further demonstrated that institutional factors significantly mediate the relationships between psychological, economic, social, and environmental dimensions and guesthouse sustainability, supporting Hypotheses H10–H13. Notably, environmental factors, although insignificant in their direct effect, had a meaningful indirect effect through institutional mechanisms, indicating that effective governance is essential for environmental initiatives to impact sustainability. These results extend the Triple Bottom Line framework by highlighting the critical mediating role of institutional structures in small island tourism contexts. Practically, the study suggests that policymakers should focus on strengthening governance frameworks, enforcement mechanisms, and capacity-building programs, while practitioners should enhance managerial capabilities and stakeholder engagement alongside environmental practices. Overall, guesthouse sustainability in the Maldives emerges as the result of aligning internal strategic capabilities with robust institutional governance, offering actionable insights for sustainable tourism development in similar island settings.

Table 1: Summary of Hypothesis Testing Results

| Hx | Statement | Result |
|-----|---------------------------------------------------------------------------------------------------------------------------|---------------|
| H1 | Psychological and Strategic Factors have a significant relationship with Institutional Factors. | Supported |
| H2 | Economic Factors have a significant relationship with Institutional Factors. | Supported |
| H3 | Social Factors have a significant relationship with Institutional Factors. | Supported |
| H4 | Environmental Factors have a significant relationship with Institutional Factors. | Supported |
| H5 | Psychological and Strategic Factors have a significant relationship with Guesthouse Sustainability. | Supported |
| H6 | Economic Factors have a significant relationship with Guesthouse Sustainability. | Supported |
| H7 | Social Factors have a significant relationship with Guesthouse Sustainability. | Supported |
| H8 | Environmental Factors have a significant relationship with Guesthouse Sustainability. | Not Supported |
| H9 | Institutional Factors have a significant relationship with Guesthouse Sustainability. | Supported |
| H10 | Institutional Factors mediate the relationship between Psychological and Strategic Factors and Guesthouse Sustainability. | Supported |
| H11 | Institutional Factors mediate the relationship between Economic Factors and Guesthouse Sustainability. | Supported |
| H12 | Institutional Factors mediate the relationship between Social Factors and Guesthouse Sustainability. | Supported |
| H13 | Institutional Factors mediate the relationship between Environmental Factors and Guesthouse Sustainability. | Supported |

The findings provide strong empirical support for the extended Triple Bottom Line framework, demonstrating that sustainable tourism outcomes in small island economies are shaped by the interplay of economic, social, psychological, and environmental factors mediated through institutional mechanisms. Governance, policy enforcement, and institutional coordination emerged as critical determinants of sustainability, highlighting that internal capabilities alone are insufficient. In particular, environmental initiatives require robust institutional backing to translate into tangible performance outcomes. These results emphasize the need for integrated strategies that align managerial commitment, community engagement, and regulatory frameworks, offering valuable insights for policymakers and practitioners aiming to enhance sustainable tourism development in fragile island contexts.

CONCLUSION AND RECOMMENDATIONS: This study examined the determinants of guesthouse sustainability in the Maldives by extending the traditional Triple Bottom Line (TBL) framework to include psychological and institutional dimensions. Using a dataset of 488 guesthouse stakeholders and Structural Equation Modeling (SEM), the research assessed both direct and indirect effects of psychological and

strategic, economic, social, and environmental factors on sustainability outcomes, with institutional factors serving as a key mediating mechanism. The findings provide theoretical insights and practical guidance for advancing sustainable tourism in small-island destinations. The results reveal the multifaceted nature of sustainability in the Maldivian guesthouse sector. Psychological and strategic factors, such as managerial commitment, sustainability awareness, and proactive strategic orientation, significantly influence both institutional engagement and sustainability outcomes (Panigrahi et al., 2021; Agapito, 2020; Al-Romeedy & Alharethi, 2025). Sustainability, therefore, is not merely operational or technical but is closely linked to human attitudes, leadership capabilities, and long-term strategic thinking. Managers and owners prioritizing sustainability and demonstrating forward-looking decision-making are better positioned to implement practices that improve operational, social, and environmental performance. Economic factors also play a significant role, positively affecting institutional engagement and sustainability outcomes. Financial stability, access to resources, and investment in infrastructure and technology enable guesthouses to comply with institutional requirements and operationalize sustainable practices. Economic resilience supports long-term sustainability, facilitating investments in staff training, environmental initiatives, and community programs. Social factors, including community engagement, employee welfare, and stakeholder collaboration, significantly impact both institutional alignment and sustainability outcomes. Embedding social responsibility into operational strategies is vital in island tourism contexts, where community acceptance and local stakeholder support are essential. Guesthouses that actively engage communities and stakeholders enhance legitimacy, customer satisfaction, and operational effectiveness (Janjua et al., 2023; Mokhtar et al., 2021; Nurhasanah et al., 2024). Environmental factors showed an indirect, rather than direct, effect on sustainability, mediated by institutional mechanisms. This indicates that eco-friendly practices alone may not yield measurable outcomes without strong governance, regulatory enforcement, and institutional support. In fragile ecosystems like the Maldives, policy-driven environmental governance, regulatory incentives, and systematic monitoring are critical to translating environmental initiatives into tangible sustainability results. Institutional factors emerged as a central mediating mechanism, linking psychological, economic, social, and environmental dimensions to sustainability outcomes. Regulatory compliance, governance effectiveness, and coordination with authorities amplify the effects of internal capabilities, highlighting the essential role of institutional frameworks in translating sustainability intentions into operational performance. This finding extends the traditional TBL framework by demonstrating the significance of institutional mediation, particularly in small-island tourism destinations. From a practical perspective, the findings suggest several actionable recommendations. Policymakers should strengthen institutional frameworks through incentives, monitoring, and enforcement mechanisms to facilitate sustainable practices. Capacity-building programs targeting managers are critical, equipping them with sustainability awareness, strategic planning, and leadership skills to align operations with institutional requirements. Guesthouses should invest in social and environmental initiatives, ensuring that environmental practices are supported by governance structures, technical guidance, and compliance mechanisms (Pitanatri & Hassan, 2025; Rethinam & Mahenthiran, 2024; Shuib et al., 2017).

Collaborative approaches involving government, industry associations, and communities can further enhance institutional effectiveness. At the community level, increasing local participation, promoting employee welfare and skill development, and enhancing stakeholder partnerships improve social legitimacy and operational outcomes (Syed Yahya et al., 2025; Wang et al., 2021; Zamani et al., 2025).

In conclusion, guesthouse sustainability in the Maldives is a multidimensional phenomenon shaped by the interplay of psychological, economic, social, environmental, and institutional factors. While internal capabilities are essential, institutional mechanisms are significant in converting these efforts into measurable outcomes. Extending the TBL framework to include institutional mediation provides both theoretical advancement and practical guidance, demonstrating that long-term sustainable tourism in small-island contexts requires integrating strategic management, financial planning, social responsibility, environmental stewardship, and effective governance.

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