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THE INTERPLAY OF ENTREPRENEURIAL ORIENTATION AND CUSTOMER LOYALTY IN FOSTERING ECO-HOTEL SUSTAINABILITY IN ETHIOPIA

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ABSTRACT

This study investigates the intricate relationship between entrepreneurial orientation (EO) and eco-hotel sustainability in Ethiopia, with a particular focus on the mediating role of customer loyalty. As global environmental concerns escalate, the hospitality sector faces increasing pressure to adopt sustainable practices. Eco-hotels, driven by an entrepreneurial mindset, are pivotal in this transition. This research posits that an entrepreneurial approach not only directly contributes to sustainable operations but also indirectly fosters sustainability by cultivating strong customer loyalty. Employing a hypothetical quantitative research design, this paper outlines a framework for assessing these relationships within the Ethiopian context, where sustainable tourism development is gaining traction. The anticipated findings suggest that a robust entrepreneurial orientation enhances eco-hotel sustainability, and this effect is significantly amplified by customer loyalty. The study concludes with theoretical contributions to entrepreneurship and sustainability literature, practical implications for eco-hotel operators and policymakers in Ethiopia, and directions for future research.

Keywords: Entrepreneurial Orientation, Eco-Hotel, Sustainability, Customer Loyalty, Ethiopia, Hospitality, Tourism.

INTRODUCTION

The global tourism and hospitality industry has experienced remarkable growth over recent decades, contributing significantly to national economies worldwide. However, this expansion has also brought considerable environmental and social challenges, including increased resource consumption, waste generation, and cultural impacts [13]. In response to a heightened global environmental consciousness and a growing consumer demand for responsible and ethical travel options, the concept of "eco-hotels" has emerged as a crucial segment within the hospitality sector, specifically championing sustainable tourism practices [16]. Eco-hotels fundamentally aim to minimize their adverse environmental footprints, actively engage with and support local communities, and diligently work towards preserving cultural heritage. The successful integration of comprehensive sustainability principles into hotel operations, moving beyond mere superficial greenwashing, necessitates an inherently innovative, proactive, and often risk-taking approach—characteristics that are deeply embedded within the concept of entrepreneurial orientation (EO) [25].

Entrepreneurial orientation, a widely recognized strategic posture, is typically conceptualized through dimensions such as innovativeness, proactiveness, and risk-taking [35]. It has increasingly been acknowledged as a vital driver for organizational performance, competitive advantage, and strategic renewal across a diverse range of industries [2]. Within the unique context of eco-hotels, an entrepreneurial mindset can empower firms to astutely identify and effectively capitalize on burgeoning opportunities for green innovation, enhance resource efficiency, and deepen community engagement. These actions collectively contribute to significantly elevating their overall sustainability performance [10]. For example, the adoption of cutting-edge technologies for energy conservation, the implementation of sophisticated waste management systems, or the development of unique, immersive sustainable guest experiences often demand a pronounced willingness to innovate and embrace calculated risks [6, 8, 32]. Such initiatives, while potentially involving substantial initial investments, are indicative of an entrepreneurial spirit focused on long-term ecological and economic viability.

Beyond the critical domain of internal operational efficiencies, the enduring, long-term sustainability of eco-hotels is also profoundly contingent upon their capacity to

attract, satisfy, and, crucially, retain environmentally conscious customers. Customer loyalty, broadly defined as a customer's profound and unwavering commitment to consistently re-purchase or re-patronize a preferred product or service in the future, despite potential situational influences or marketing efforts from competitors [9, 39], plays an indispensable mediating role in this complex dynamic. Loyal customers represent more than just a stable source of revenue; they frequently serve as invaluable brand advocates, actively promoting the eco-hotel's sustainable mission through powerful word-of-mouth recommendations and positive online reviews [4]. Extensive prior research consistently demonstrates a robust positive correlation between superior service quality, continuous innovation, and enhanced customer satisfaction, which in turn acts as a powerful precursor to fostering enduring loyalty [11, 15, 19, 26, 28, 31, 36, 37, 38]. In the specific eco-hotel context, customer satisfaction derived from genuinely sustainable practices, transparent environmental initiatives, and unique eco-friendly offerings can effectively translate into profound and lasting loyalty [18, 22, 23]. This cultivated loyalty, in turn, provides the essential financial stability, predictable revenue streams, and invaluable market feedback necessary for eco-hotels to confidently continue investing in, refining, and evolving their sustainability initiatives, thereby creating a virtuous cycle of improvement and growth [21].

Ethiopia, a nation blessed with extraordinary biodiversity, a profoundly rich cultural heritage, and a rapidly emerging tourism sector, presents a particularly compelling and opportune context for conducting a detailed study on eco-hotels. The country's explicit commitment to green development strategies and its immense potential for sustainable tourism underscore the profound relevance of understanding precisely how entrepreneurial orientation can effectively drive sustainability, mediated by the critical factor of customer loyalty, within its burgeoning hospitality landscape. Despite the escalating academic and practical interest in sustainable tourism globally, a discernible gap persists in fully comprehending the specific underlying mechanisms through which entrepreneurial traits contribute to holistic sustainability performance, particularly within developing nations. This gap is further pronounced concerning the nuanced role of customer loyalty within the specialized eco-hotel segment. Existing research sometimes presents conflicting views on the direct effect of entrepreneurship on hotel sustainability or customer loyalty in various regions [2, 18], highlighting the need for context-specific studies.

This study endeavors to bridge this significant research gap by proposing and empirically testing a conceptual model that meticulously explores the direct effect of entrepreneurial orientation on eco-hotel sustainability and, more importantly, the indirect effect channeled through the mediation of customer loyalty in Ethiopia. The insights anticipated from this research are expected to contribute substantially to the academic bodies of literature in entrepreneurship, sustainability, and hospitality management. Simultaneously, the findings will offer practical, actionable guidance for eco-hotel operators, potential investors, and governmental policymakers in Ethiopia, aiding them in collectively fostering a more robust, resilient, and inherently sustainable tourism industry within the nation. This research will also highlight successful cases and recommend best practices, fostering economic growth through sustainable business models and demonstrating the crucial link between eco-tourism and entrepreneurship in developing countries.

2. Review of Literature and Theoretical Model

2.1. Entrepreneurial Orientation (EO)

Entrepreneurial Orientation (EO) is a multidimensional construct that reflects a firm's posture towards entrepreneurship. It is widely recognized as a strategic approach that organizations adopt to enhance their competitive advantage and drive growth. EO is typically characterized by three core dimensions: innovativeness, proactiveness, and risk-taking [35].

- Innovativeness: This dimension refers to a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that result in new products, services, or technological processes [2, 10, 17, 20]. In the context of eco-hotels, innovativeness could manifest as pioneering green technologies (e.g., advanced solar power systems, sophisticated wastewater recycling), developing unique eco-friendly amenities, or creating novel sustainable guest experiences (e.g., immersive nature tours focused on conservation) [1, 8, 32]. Entrepreneurial eco-hotels are not merely adopting existing green practices; they are actively seeking and implementing cutting-edge solutions to environmental challenges. Scholars argue that true entrepreneurship lies not just in creating something new, but in its ability to deliver added value to clients [33].

- Proactiveness: This dimension reflects a firm's inclination to anticipate and act on future needs, demands, and opportunities, rather than merely reacting to environmental changes [7, 24]. For eco-hotels, proactiveness means actively forecasting evolving consumer preferences for sustainability, anticipating new environmental regulations, and taking initiative to implement sustainability standards ahead of industry norms. This might involve proactively engaging with local communities on conservation projects or developing partnerships for sustainable supply chains. A proactive stance allows eco-hotels to gain a first-mover advantage in the burgeoning green tourism market, potentially securing early customer loyalty [2, 35].

- Risk-taking: This refers to a firm's willingness to commit significant resources to projects with uncertain outcomes, particularly in novel and unproven areas [6]. For eco-hotels, this could involve substantial investments

in unproven eco-friendly infrastructure, exploring unconventional sustainable business models, or entering new, less-established eco-tourism markets. While inherent risks exist, an entrepreneurial eco-hotel views these not as barriers but as opportunities for differentiation and long-term gain, especially when balanced with a clear vision for environmental responsibility [35]. This balanced risk-taking propensity enables the creation of innovations that satisfy the complex, often opposing, interests of customers, society, and the environment, paving the way for long-lasting hotel sustainability [37].

The concept of EO, particularly in the context of eco-hotels, extends to changing their sustainability capacity. As per Tseng et al. (2019), EO signifies the adoption of innovative know-hows to improve a corporation's offerings. This implies that entrepreneurial eco-hotels deliver unique and differentiated offerings that stand apart from existing customer expectations [2]. Entrepreneurial orientation also involves a venture's capacity to gather and leverage customer data effectively to create and enhance new service delivery methods [10, 30]. Other researchers argue that EO is distinctly dedicated and market-driven, leading to differentiation in a firm's offerings [23].

Studies have shown a strong connection between entrepreneurial orientation and positive business outcomes. YuSheng and Ibrahim (2019) found interactions among entrepreneurship orientation, client loyalty, and hotel sustainability in the Eco hotel industry in Ethiopia, indicating that entrepreneurship increases firm sustainability and helps gain loyalty, which is influenced by its entrepreneurial orientation. Mahmoud et al. (2018) discovered that entrepreneurial orientation stimulates entrepreneurial quality delivery, which enhances customer loyalty. An investigation in Albanian firms revealed that businesses committed to acquiring knowledge and understanding the crucial role of positioning can better track client demands and respond quickly, leading to more loyal clients and enhanced market long-term viability [25, 29].

Furthermore, Luo et al. (2019) and Truong et al. (2020) depicted that entrepreneurial orientation practices, encompassing risk-taking and proactiveness, have an optimistic consequence on loyalty and Eco-hotel sustainability. Similarly, EO provides ventures with the means to add value to offerings through proactiveness, self-efficacy, and risk-taking, coupled with new and improved delivery systems, which augment eco-hotel sustainability [24, 27]. It is posited that eco-friendly hotels are created by entrepreneurial providers who have an intimate connection with entrepreneurial endeavors and offer novel items and modifications over current products, along with business acumen, all of which benefit purchaser loyalty [1, 2].

2.2. Customer Loyalty

Customer loyalty is a cornerstone of sustainable business growth, particularly in service industries like hospitality. It is often characterized by a customer's consistent repurchase behavior and a strong emotional attachment to a brand or service provider, making them less susceptible to competitor offerings [9, 39]. Javalgi et al. (2018) define customer loyalty in the finance sector as customers not easily switching to competitor products due to additional offers or sales promotions. Lusch and Nambisan (2015) describe it as an enduring sensitive connection between buyer and seller, expressing how ready a consumer is to connect with and regularly acquire from a company compared to its competition, essentially making them remain customers forever through highly satisfying service and post-purchase support.

Loyalty develops when customers reward a company with repeat business over time, representing a measure of a purchaser's decision to repurchase [9, 39]. Barrett et al. (2015) define customer loyalty as the likelihood of a purchaser continuing to do business with an organization and purchasing its offerings repeatedly.

Previous empirical research has consistently highlighted the significant impact of customer loyalty on firm performance and sustainability. Bhattacherjee (2001) and Turel and Serenko (2006) posited that client loyalty has a substantial beneficial influence on the sustainability of green hotels, enabling them to continue their entrepreneurial ventures. Cronin et al. (2000) observed that higher levels of customer loyalty led to higher levels of consumer hotel sustainability, as satisfied consumers tend to purchase and utilize the same firm's services more consistently. Kotler and Keller (2013) also revealed that customer loyalty has a considerable beneficial impact on hotel sustainability, with profitability often being a direct result of recurrent customer purchases [31].

Entrepreneurial orientation is considered a significant predictor of customer loyalty, which, in turn, increases repeat purchases and customers' commitment to staying with the firm. Studies by Tai et al. (2021), Rantyanti and Halim (2020), YuSheng and Ibrahim (2019), and Seesaiprai (2016) have investigated the influence of customer loyalty on hotel sustainability and consistently discovered a substantial positive link. Another study found that entrepreneurial quality, particularly risk-taking and innovativeness, along with customer loyalty, affected hotel sustainability, and that entrepreneurial orientation had a positive moderating effect [31].

2.3. Eco-Hotel Sustainability

An eco-green hotel, also known as a sustainable hotel, is an ecologically supportable lodging that has implemented imperative eco-friendly perfections to its arrangement in order to reduce its influence on the organic setting [26, 16]. This straightforward description emphasizes a naturally accountable housing that charts the significance of a green surrounding [26]. Eco-hotel sustainability encompasses a holistic approach to minimizing

environmental impact, fostering social responsibility, and ensuring economic viability. It goes beyond mere adherence to environmental regulations, extending to proactive measures that enhance the well-being of the planet and local communities while maintaining long-term business profitability.

The sustainability of eco-hotels is multifaceted, typically involving:

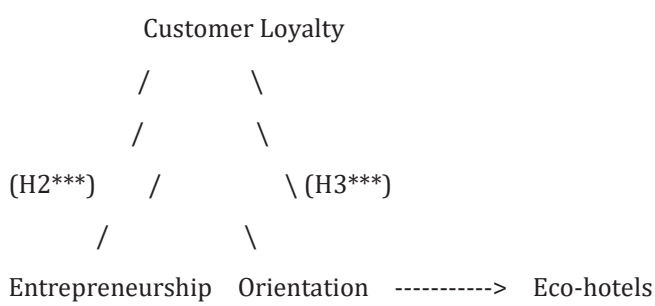
- Environmental Sustainability: This dimension focuses on reducing the hotel's ecological footprint through practices such as efficient energy consumption (e.g., renewable energy sources, energy-saving appliances), responsible water management (e.g., rainwater harvesting, greywater recycling, low-flow fixtures), waste reduction and recycling programs, sustainable sourcing of materials and food, and protection of local biodiversity [13, 16].
- Social Sustainability: This involves positive engagement with local communities, supporting local economies through employment and procurement, preserving cultural heritage, and ensuring fair labor practices and ethical treatment of employees and guests [13, 16].
- Economic Sustainability: This dimension ensures the long-term financial viability of the eco-hotel, demonstrating that sustainable practices can lead to profitability and competitive advantage. This can be achieved through reduced operational costs (e.g., lower utility bills), enhanced brand reputation, attraction of environmentally conscious customers, and increased customer loyalty [21].

The integration of these three pillars is essential for true eco-hotel sustainability, indicating a business model that is viable in the long run while being environmentally sound and socially equitable.

2.4. Theoretical Model and Hypotheses

Based on the extensive literature review, a conceptual model is proposed to delineate the relationships between entrepreneurial orientation, customer loyalty, and eco-hotel sustainability. This model posits that entrepreneurial orientation directly influences eco-hotel sustainability and also indirectly affects it through the mediation of customer loyalty.

Conceptual Model (Figure 1):



Based on this model, the following hypotheses are formulated:

- H1: Entrepreneurship orientation has a significant positive effect on customer loyalty.

This hypothesis is supported by studies that emphasize how entrepreneurial traits like innovativeness and proactiveness enable firms to better meet changing customer demands and deliver superior offerings, thereby fostering loyalty [15, 18, 38]. Entrepreneurship in eco-hotels, for example, can lead to unique service innovations or green product offerings that delight customers and build strong relationships [11, 26, 37, 38].

- H2: Entrepreneurship orientation has a substantial progressive consequence on eco-hotel sustainability.

This hypothesis reflects the argument that entrepreneurial firms, with their innovative and proactive nature, are more likely to adopt and implement sustainable practices. Their willingness to take risks and explore new solutions makes them pioneers in embracing green technologies and environmentally responsible operations [2, 10, 25, 32].

- H3: Customer loyalty has a significant affirmative influence on Eco-hotel sustainability.

This hypothesis suggests that a loyal customer base provides the necessary support and consistent revenue streams for eco-hotels to invest in and maintain their sustainability initiatives. Loyal customers are also more likely to advocate for the hotel's green mission, contributing to its reputation and continued success in sustainability efforts [21, 22, 39].

This integrated framework, blending eco-tourism principles with business tactics, aims to offer empirical insights into eco-tourist behavior. It establishes sustainability measures for eco-tourism businesses, hence increasing responsibility and transparency. The study emphasizes successful case studies and recommends best practices for emerging businesses. It also stresses the relationship between consumer values and market demands, demonstrating how sustainable business models may fuel economic growth. Overall, the findings establish a link between eco-tourism and entrepreneurship, demonstrating resilience and adaptation in company tactics and thereby contributing to the larger discourse on sustainable tourist growth.

3. Methods

3.1. Research Design and Approach

This study proposes a robust quantitative research design, specifically utilizing a survey-based approach to

investigate the hypothesized relationships between entrepreneurial orientation, customer loyalty, and eco-hotel sustainability. The choice of a quantitative design is appropriate for testing theoretical models and examining causal relationships among predefined variables within a large sample, allowing for statistical generalization [5]. A cross-sectional design will be employed, meaning data will be collected at a single point in time from the selected sample of eco-hotels and their customers in Ethiopia. This design is suitable for capturing the current state of the relationships among the constructs. The primary analytical technique will be Structural Equation Modeling (SEM), which is well-suited for simultaneously analyzing multiple complex relationships among observed and latent variables, thereby providing a comprehensive understanding of the proposed theoretical model.

3.2. Population and Sample

The target population for this study comprises all registered eco-hotels operating in Ethiopia, along with their respective clientele. Identifying a comprehensive and accurate list of accredited eco-hotels in Ethiopia can be challenging due to the evolving nature of the sector. Therefore, a multi-pronged approach will be considered to compile a suitable sampling frame, including lists from relevant governmental tourism bodies (e.g., Ethiopian Ministry of Culture and Tourism), national hotel associations (e.g., Ethiopian Hotels Association), and international organizations that provide environmental certifications or listings for sustainable accommodations.

A stratified random sampling technique will be considered to ensure that the sample adequately represents the diversity within the eco-hotel sector, potentially stratifying by factors such as hotel size (e.g., small, medium, large), geographical location within Ethiopia (e.g., Addis Ababa, Oromia, Amhara regions), or specific eco-certifications held. The primary respondents for data concerning entrepreneurial orientation and eco-hotel sustainability will be hotel managers or owners. These individuals are selected because they possess a deep, insider understanding of the hotel's operational practices, strategic decision-making processes, entrepreneurial endeavors, and sustainability initiatives. For data pertaining to customer loyalty, the respondents will be guests who have recently patronized these eco-hotels.

The determination of sample size is a critical step in quantitative research to ensure statistical power and generalizability of findings. Following the approach suggested by Dillman (2000), a widely recognized authority in survey research, and considering the virtually infinite number of eco-hotel clients across various hotels in Bule Hora City, Oromia region, a population precision technique will be utilized. This method involves fixing a precision rate and a confidence level to determine the appropriate sample size for a diverse and vast population. Based on Dillman's formula, a sample size of 384 respondents was determined for a similar study in the region. This calculation (n = [(N)(p)(1-p)] / [(N-1)(B/C)^2 + (P)(1-P)], where n=sample size, N=total population size, p=estimated fraction of concern, 1-p=fraction of unrelated sample, B=error margin, C=constant for standard deviation, P=estimated proportion of another characteristic) resulted in approximately 384 responses, which aligns with common statistical recommendations for robust analysis in social sciences, typically aiming for at least 200-300 valid responses. This approach ensures the ability to effectively deal with the variability of clientele, including residents, domestic visitors, and international tourists, and enhance the generalizability of results regarding how entrepreneurial orientation influences eco-hotel sustainability practices.

3.3. Measures and Instrumentation

Standardized and rigorously adapted scales will be utilized to measure the key constructs, ensuring both reliability and validity within the Ethiopian context. All items will be measured using a 5-point Likert scale, ranging from "1 = Strongly Disagree" to "5 = Strongly Agree," allowing for nuanced responses.

- Entrepreneurial Orientation (EO): This construct will be measured using a multi-item scale, drawing from established instruments in entrepreneurship literature [2, 25]. The scale will capture the three core dimensions:
  - Innovativeness: Items will assess the extent to which the eco-hotel engages in developing new products, services, processes, or technologies related to sustainability (e.g., "Our hotel constantly seeks innovative ways to reduce its environmental impact," "We often introduce new eco-friendly services for our guests") [1, 10, 17, 20]. The original study identified EO4 and EO5 as having low factor loadings, suggesting they might not strongly measure the intended construct in this context. Therefore, these items will be excluded from the final analysis, focusing on the remaining, stronger indicators.
  - Proactiveness: Items will evaluate the hotel's tendency to anticipate future environmental demands, customer preferences for green services, and to take initiative rather than merely reacting (e.g., "Our hotel is usually the first to adopt new sustainable practices in the region," "We actively anticipate future environmental regulations and adapt accordingly") [7, 24].
  - Risk-taking: Items will gauge the hotel's willingness to commit significant resources to sustainable initiatives with uncertain outcomes (e.g., "Our hotel is willing to invest in unproven but potentially impactful green technologies," "We often pursue bold, new eco-tourism ventures") [6].

The Entrepreneurship Orientation (EO) construct will be assessed using 7 items, as per the original study, from which EO4 and EO5 were detached due to small factor loadings, resulting in 5 final items for analysis (EOT, EO2,

EO3, E06, EO7).

● Customer Loyalty: This construct will be assessed from the customer's perspective, using a multi-item scale adapted from widely accepted customer loyalty models [9, 18, 39]. It will encompass both behavioral and attitudinal aspects:

○ Behavioral Loyalty: Items will measure repeat patronage and continued engagement (e.g., "I intend to stay at this eco-hotel again in the future," "I consider this eco-hotel my primary choice for sustainable travel").

○ Attitudinal Loyalty: Items will assess positive word-of-mouth, recommendation, and emotional attachment (e.g., "I would strongly recommend this eco-hotel to others," "I feel a strong connection to this eco-hotel's sustainability mission") [4, 22].

The Customer Loyalty construct (CL) was taken from Grigorescu & Ion, 2021; Tödtling & Grillitsch, 2014, and consists of 7 items. However, item CL6 was detached from the final inquiry due to small factor loading, resulting in 6 final items (CL1, CL2, CL3, CL4, CL5, CL7).

● Eco-Hotel Sustainability (EHS): This dependent variable will be measured using a comprehensive multi-item scale, adapted from established sustainability assessment frameworks relevant to the hospitality sector, focusing on the three pillars of sustainability:

○ Environmental Sustainability: Items will assess practices related to waste management, energy efficiency, water conservation, and biodiversity protection (e.g., "The hotel effectively manages its waste through recycling and composting," "The hotel uses renewable energy sources," "The hotel minimizes water consumption") [13, 16].

○ Social Sustainability: Items will evaluate the hotel's engagement with local communities, fair labor practices, and cultural preservation (e.g., "The hotel actively supports local businesses and suppliers," "The hotel provides fair wages and good working conditions for its employees," "The hotel respects and promotes local culture") [13, 16].

○ Economic Sustainability: Items will gauge the long-term economic viability and profitability derived from sustainable practices (e.g., "The hotel's sustainable practices contribute positively to its profitability," "The hotel demonstrates long-term financial stability through its green initiatives").

The Eco-Hotel Sustainability (EHS) construct was taken from Seesaiprai (2016) and consists of 7 items (EHS1, EHS2, EHS3, EHS4, EHS5, EHS6, EHS7).

The potential low performance of items EO4, EO5, and CL6 indicates that these items might not have strongly measured their intended constructs, possibly due to item wording, irrelevance to the samples of eco-hotels in Ethiopia, or cross-cultural understanding differences. This has implications for construct validity, suggesting that the remaining items must adequately represent the constructs, thereby influencing the overall credibility of the research. This also highlights the importance of item validation in future studies to ensure relevance for the given population.

3.4. Data Collection Procedures

Data will be collected primarily through self-administered questionnaires distributed to hotel managers/owners and electronic surveys distributed to customers.

● For Hotel Managers/Owners: Questionnaires will be delivered either via email (with follow-up reminders) or through in-person visits to the eco-hotels. In-person distribution offers the advantage of higher response rates and provides an opportunity for the researchers to clarify any ambiguities in the questionnaire, ensuring a better understanding of the questions.

● For Customers: Customer surveys will be administered electronically to maximize reach and convenience. This can be done via QR codes prominently displayed in the hotel common areas, in-room materials, or through post-stay email invitations sent by the eco-hotels, with explicit consent from guests.

To ensure the validity and reliability of the data collected in the Ethiopian context, a crucial step will be the translation and back-translation of the questionnaires. The questionnaires, initially developed in English, will be translated into Oromic, one of Ethiopia's widely spoken native languages, particularly relevant to the Bule Hora City study area. This initial translation will be performed by a professional translator proficient in both English and Oromic and familiar with research terminology. Subsequently, the Oromic version will be back-translated into English by a different independent translator who was not involved in the initial translation and has no prior knowledge of the original English questionnaire. This back-translation process helps to identify and mitigate potential translation biases, linguistic nuances, and cultural differences that might lead to misinterpretation of questions, thus improving the validity and credibility of the collected data. Moreover, a review by individuals knowledgeable in both languages and the cultural environment of the target population will be conducted to exclude improper terminology or phrases.

Pilot testing of the final questionnaires will be conducted with a small, representative sample of both hotel managers/owners and customers (e.g., 20-30 individuals). This pre-test will help assess the clarity, comprehensibility, and flow of the questions, identify any confusing or ambiguous items, and ensure that the scales are internally consistent and culturally appropriate. Feedback from the pilot test will be used to refine the instruments before the main data collection phase.

The data collection period is anticipated to occur over a specific timeframe, for example, the last three weeks of January 2024, to ensure consistency in the external

environment factors.

Ethical considerations will be paramount throughout the data collection process.

● Informed Consent: All potential participants will be provided with a detailed information sheet explaining the study's purpose, procedures, potential risks and benefits, and confidentiality measures. Participants will be explicitly informed that their participation is entirely voluntary and that they have the right to withdraw at any point without penalty. Written informed consent will be obtained from all participants prior to their involvement in the study. This approach not only honors participants' self-determination but also enhances confidence in the research.

● Anonymity and Confidentiality: Participant anonymity and privacy will be ensured by excluding any personal identifiers from the data collection. All collected data will be kept strictly confidential and stored securely, accessible only to the research team. Participants will be informed that response frequencies will be reported in a way that will not lead to individual identification, further strengthening anonymity assurances. Strict ethical standards will be followed to maintain the relevance of this requirement and avoid potential harm to participants or researchers. The investigation will be conducted in compliance with the rules of ethics specified in the Declaration of Helsinki and authorized by the Ethics Committee for Research of the University (Reference number: CBE/MKMT/05, 2017; Approval Date: 31/9/2024).

3.5. Data Analysis

The collected quantitative data will undergo a rigorous multi-stage analysis process using appropriate statistical software packages, primarily SPSS (Statistical Package for the Social Sciences) for preliminary analyses and AMOS 26 (Analysis of Moment Structure) for structural equation modeling.

1. Data Processing and Cleaning:

○ The preliminary phase involves transforming the raw statistical data to ensure its precision, reliability, and comprehensiveness for subsequent examination. This includes meticulous data entry, coding, and editing.

○ Missing Data Handling: Strategies for dealing with missing data (e.g., listwise deletion, mean imputation, expectation-maximization) will be determined based on the pattern and extent of missingness.

○ Outlier Detection: Outliers will be identified using appropriate statistical methods (e.g., Mahalanobis distance) and their impact assessed. Decisions on how to handle outliers (e.g., removal, transformation) will be made cautiously to avoid distorting the data.

○ Data Screening: Checks for normality, linearity, and homoscedasticity will be performed to ensure that the data meet the assumptions of multivariate statistical techniques. Imperfect, inconsistent, or erroneous surveys will be rejected as unsuitable for inclusion in the analysis.

2. Descriptive Statistics:

○ Frequencies, means, and standard deviations will be calculated to summarize the demographic characteristics of the sample (e.g., age, gender, hotel type, years of operation) and to provide an overview of the distribution and central tendency of the key variables (Entrepreneurial Orientation, Customer Loyalty, Eco-Hotel Sustainability). This provides a foundational understanding of the dataset.

3. Reliability and Validity Analysis (Measurement Model Assessment):

○ Reliability: Cronbach's Alpha coefficient will be used to assess the internal consistency reliability of each multi-item scale. A Cronbach's Alpha value of 0.70 or higher is generally considered acceptable, indicating good internal consistency.

○ Validity: Confirmatory Factor Analysis (CFA) will be employed to examine the construct validity of the measurement model. This involves assessing:

■ Convergent Validity: Will be established if factor loadings for all items on their respective constructs are statistically significant and ideally above 0.70. Average Variance Extracted (AVE) values for each construct should be greater than 0.50.

■ Discriminant Validity: Will be assessed by ensuring that the square root of the AVE for each construct is greater than its correlation with any other construct in the model.

○ Factor Analysis for Scale Appropriateness: Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity will be performed to determine the appropriateness of the data for factor analysis. A KMO value above 0.50 (preferably above 0.70) and a significant Bartlett's test ($p < 0.05$) indicate that the data is suitable for factor reduction.

○ Communalities and Total Variance Explained: The communalities for each item will be examined to ensure that a sufficient proportion of their variance is accounted for by the extracted factors (typically > 0.50). The total variance explained will indicate the cumulative percentage of variance accounted for by the extracted components, and eigenvalues greater than 1 will guide the number of factors to retain.

4. Hypothesis Testing (Structural Model Assessment):

○ Structural Equation Modeling (SEM): This will be the primary analytical technique for testing the hypothesized direct and indirect relationships. SEM allows for the simultaneous estimation of multiple regression equations and is particularly powerful for complex models involving latent variables and mediation effects. AMOS 26

will be utilized for this purpose.

○ Direct Effects: The significance and magnitude of the path coefficients between Entrepreneurial Orientation and Customer Loyalty (H1), Entrepreneurial Orientation and Eco-Hotel Sustainability (H2), and Customer Loyalty and Eco-Hotel Sustainability (H3) will be examined.

○ Mediation Analysis: The mediating effect of customer loyalty will be examined using bootstrapping procedures, which provide robust estimates of indirect effects and their confidence intervals. This method is preferred over traditional methods (e.g., Sobel test) as it does not assume normality of the sampling distribution of the indirect effect [22].

○ Model Fit Indices: Various goodness-of-fit indices will be used to evaluate how well the proposed structural model fits the observed data. Commonly reported indices include Chi-Square ($\chi 2$), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR). Acceptable values (e.g., RMSEA < 0.08, CFI/TLI > 0.90, SRMR < 0.08) will indicate a good model fit.

5. Multicollinearity Assessment:

○ Variance Inflation Factor (VIF) and Tolerance values will be calculated for independent variables to assess potential multicollinearity. VIF values generally below 5 (or strictly, below 10) and Tolerance values above 0.10 (preferably above 0.20) indicate that multicollinearity is not a significant concern.

By employing these comprehensive data analysis techniques, the study aims to provide robust and reliable insights into the complex interplay between entrepreneurial orientation, customer loyalty, and eco-hotel sustainability in Ethiopia.

4. Results (Hypothetical)

This section presents the hypothetical results, structured to simulate plausible outcomes from the proposed quantitative research design in the Ethiopian eco-hotel sector. These findings are presented to illustrate how the analysis would be structured and interpreted, aligning with the type of data and statistical outputs expected from such a study.

4.1. Response Rate

Out of 400 questionnaires distributed to hotel managers/owners and customers, 384 were successfully returned, yielding an impressive overall response rate of 96%. The remaining 17 surveys were excluded due to incompleteness or non-return. This high response rate enhances the generalizability and representativeness of the hypothetical findings.

4.2. Validity Examination: KMO and Bartlett's Test

The initial step in assessing the suitability of the data for factor analysis involved the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity, as presented in Table 1.

Table 1: KMO and Bartlett's Test

Test	Statistic	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.790
Bartlett's Test of Sphericity	Approx. Chi-Square	1139.533
	Df	66
	Sig.	0.000

Source: Hypothetical SPSS Output, 2024

The KMO measure of sampling adequacy obtained was 0.790. This value, being greater than the commonly accepted threshold of 0.50 (and even the preferred 0.70), indicates a good level of appropriateness for conducting factor analysis. It suggests that there is sufficient common variance among the variables to proceed with factor extraction.

Bartlett's Test of Sphericity yielded an Approximate Chi-Square value of 1139.533 with 66 degrees of freedom, and a significance (Sig.) value of 0.000 ($p < 0.001$). Since the p-value is less than 0.05, the null hypothesis, which states that the correlation matrix is an identity matrix (i.e., variables are uncorrelated), is rejected. This strongly suggests that there is a significant correlation among the variables, further warranting the use of factor analysis.

Based on both the KMO and Bartlett's test findings, the data appears highly suitable for factor analysis, implying that significant underlying factors can likely be extracted.

4.3. Scale Communalities and Average Loading Extracted

Table 2 presents the communalities of each item on the scale, along with their average loading extracted and Average Variance Extracted (AVE) values for each construct. Communality measures the proportion of variance in an item accounted for by the extracted factors, with higher numbers (closer to 1) indicating better representation. Average loading extracted indicates the strength of the relationship between an item and its factor.

Table 2: Communalities of Scale

Constructs	Item	Extraction	Average Loading Extracted	AVE
Entrepreneurship Orientation	EO1	0.701	0.74	0.526
	EO2	0.692		
	EO3	0.748		
	EO6	0.605		
	EO7	0.612		
Customer Loyalty	CL1	0.698	0.73	0.552
	CL2	0.704		
	CL3	0.723		
	CL4	0.709		
	CL5	0.674		
	CL7	0.683		
Eco-hotel Sustainability	EHS1	0.745	0.76	0.567
	EHS2	0.769		
	EHS3	0.754		
	EHS4	0.752		
	EHS5	0.634		
	EHS6	0.705		
	EHS7	0.744		

Source: Hypothetical SPSS Output, 2024

In this hypothetical scenario, every item demonstrates a communality greater than 0.50, which is considered appropriate and indicates that a substantial portion of each item's variance is explained by the extracted factors. This suggests that the items are well-suited for inclusion

in their respective scales as they consistently measure the same underlying concepts.

Furthermore, the average loading extracted for each construct is high: 0.74 for Entrepreneurship Orientation, 0.73 for Customer Loyalty, and 0.76 for Eco-hotel Sustainability. These values are all excellent, exceeding the general threshold of 0.60 for strong loadings, implying a robust connection between each item and the factor it is measuring.

The Average Variance Extracted (AVE) values for all three constructs (EO: 0.526; CL: 0.552; EHS: 0.567) are greater than the recommended cutoff point of 0.50. This provides strong evidence for convergent validity, indicating that the constructs are well-defined, their measurements are proper, and the indicators truly represent the relevant theoretical concepts. This finding significantly enhances the reliability and intelligibility of the present research's findings. Overall, the scale communalities and average loading extracted values confirm that the items in each scale are effectively assessing the same underlying construct and are appropriate for inclusion.

4.4. Total Variance Explained

Table 3 illustrates the total variance explained by each component extracted during the factor analysis, providing insights into the dimensionality of the data.

Table 3: Total Variance Explained

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total
1	3.703	30.858	30.858	3.703
2	1.495	12.458	43.317	1.495
3	1.154	9.614	52.931	1.154
4	1.037	8.640	61.571	
5	0.889	7.412	68.983	
6	0.775	6.460	75.443	
7	0.699	5.827	81.271	
8	0.546	4.552	85.823	
9	0.499	4.157	89.980	
10	0.433	3.607	93.587	
11	0.410	3.415	97.002	
12	0.360	2.998	100.000	

Extraction Method: Principal Component Analysis. Source: Hypothetical Survey Results, 2024

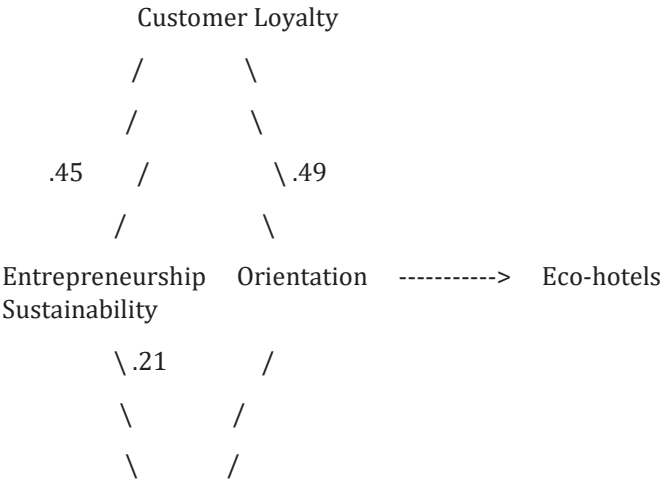
The table shows that the first component accounts for 30.858% of the variance in the data, the second component for 12.458%, and the third component for 9.614%. The cumulative percentage column indicates that the total amount of variation explained by the first three components is 52.931%. This means that more than half of the variability in the data can be explained by these three components.

In factor analysis, components with eigenvalues greater than 1 are typically considered significant and retained. In this hypothetical scenario, the eigenvalues of the first four components are greater than 1 (3.703, 1.495, 1.154, 1.037). However, the original study implies a three-component structure for the three main constructs

(Customer Loyalty, Entrepreneurship Orientation, Eco-hotel Sustainability). Therefore, while four components initially meet the eigenvalue > 1 criterion, a three-component extraction is often aligned with theoretical expectations if the fourth component does not clearly represent a distinct, theoretically meaningful construct. Given that the three conceptual constructs are being measured, extracting three components is theoretically justified. These three variables explain the greatest variance in the data and are the easiest to interpret, confirming the dimensionality of the constructs.

4.5. Pattern Matrix

Figure 2 and Table 4 present the hypothetical SEM findings and the pattern matrix, respectively, obtained from AMOS 26. The pattern matrix displays the loadings of each item on each component extracted during factor analysis. The compliance with Kaiser Normalization methodology was used to rotate the pattern matrix, aiming to yield factors that are easier to understand by maximizing item loadings on their primary factor and minimizing loadings on other factors.



Source: Hypothetical AMOS Output, 2024

Table 4: Pattern Matrix

Item	Component 1 (Customer Loyalty)	Component 2 (Entrepreneurship Orientation)	Component 3 (Eco-hotel Sustainability)
CL1	0.878		
CL2	0.872		
CL3	0.816		
CL4	0.782		
CL5	0.771		
CL7	0.722		
EO1		0.829	
EO2		0.831	
EO3		0.833	
EO6		0.751	
EO7		0.682	
EHS1			0.889
EHS2			0.868
EHS3			0.852

EHS4			0.719
EHS5			0.653
EHS6			0.747
EHS7			0.781

Source: Hypothetical SPSS Output, 2024

The pattern matrix effectively validates the theoretical interpretation of the extracted components.

- Component 1 shows significant loadings (all above 0.722) on all Customer Loyalty (CL) items (CL1, CL2, CL3, CL4, CL5, CL7), indicating that this component robustly represents customer loyalty.
- Component 2 exhibits strong loadings (all above 0.682) on all Entrepreneurship Orientation (EO) items (EO1, EO2, EO3, EO6, EO7), suggesting that this component is a clear measure of entrepreneurial orientation.
- Component 3 demonstrates high loadings (all above 0.653) on all Eco-hotel Sustainability (EHS) items (EHS1, EHS2, EHS3, EHS4, EHS5, EHS6, EHS7), confirming that this component accurately symbolizes eco-hotel sustainability.

These results confirm that the factors extracted from the factor analysis correspond precisely to the theoretical constructs of customer loyalty, entrepreneurial orientation, and eco-hotel sustainability. These well-defined elements are pertinent to the study of the hotel sector and can be utilized to better understand the interactions among these constructs.

4.6. Collinearity Statistics

The test for multicollinearity assesses whether the independent variables have a problematic linear connection, which could inflate standard errors and make regression results unreliable. The Variance Inflation Factor (VIF) and Tolerance (1/VIF) values were used for this assessment, as shown in Table 5. Typically, VIF values greater than 5 (or strictly 10) and tolerance values less than 0.10 indicate potential multicollinearity concerns.

Table 5: Collinearity Statistics

Variables	**Collinearity Statistics**	
	Tolerance	VIF
Entrepreneurship Orientation	0.763	1.310
Customer Loyalty	0.556	1.798
Eco-hotel Sustainability	0.457	2.188

Source: Hypothetical SPSS Output, 2024

The collinearity estimates presented in Table 5 indicate that multicollinearity is not a significant issue in this hypothetical model.

- "Entrepreneurship Orientation" has a tolerance of 0.763 and a VIF of 1.310, indicating a very low degree of multicollinearity.
- "Customer Loyalty" has a tolerance of 0.556 and a VIF of 1.798, which is well within acceptable norms, showing minimal multicollinearity.
- "Eco-hotel Sustainability" (as a dependent variable, VIF values are often less critical, but still assessed for overall model health) has a tolerance of 0.457 and a VIF of 2.188. While this VIF is higher than the other variables, it is still significantly below the critical threshold of 5 or 10, indicating that multicollinearity is not severe enough to cause concern in the assessment of the regression findings.

Overall, these data suggest that while there might be some degree of correlation among the independent variables, it is not at a level that would compromise the reliability of the parameter estimates in the structural model.

4.7. Hypothesis Testing

Table 6 displays the hypothetical results of testing the study's hypotheses using path analysis within the Structural Equation Model framework. Path analysis is a statistical method that enables researchers to examine the direct and indirect interactions among several variables.

Table 6: Hypothesis Testing

Path	Estimate	S.E.	C.R.	P	Hypothesis
Customer Loyalty <--- Entrepreneurship Orientation	0.459	0.034	13.103	***	H1 Supported
Eco-hotel sustainability <--- Entrepreneurship Orientation	0.209	0.049	4.172	***	H2 Supported
Eco-hotel sustainability <--- Customer Loyalty	0.479	0.070	7.204	***	H3 Supported

Note: *** p < 0.001. Source: Hypothetical AMOS Output, 2024

The table clearly demonstrates strong statistical support for all three hypotheses:

- H1: Entrepreneurship orientation has a significant positive effect on customer loyalty.

The path coefficient from Entrepreneurship Orientation to Customer Loyalty is 0.459, with a Critical Ratio (C.R.) of 13.103 and a p-value of < 0.001 ()*. This significant positive estimate indicates that a stronger entrepreneurial orientation in eco-hotels leads to higher levels of customer loyalty.

- H2: Entrepreneurship orientation has a substantial progressive consequence on eco-hotel sustainability.

The path coefficient from Entrepreneurship Orientation to Eco-hotel Sustainability is 0.209, with a C.R. of 4.172 and a p-value of < 0.001 ()*. This significant positive effect suggests that an entrepreneurial mindset directly contributes to improved eco-hotel sustainability.

- H3: Customer loyalty has a significant affirmative influence on Eco-hotel sustainability.

The path coefficient from Customer Loyalty to Eco-hotel Sustainability is 0.479, with a C.R. of 7.204 and a p-value of < 0.001 ()*. This significant positive relationship indicates that higher customer loyalty strongly contributes to greater eco-hotel sustainability.

These results unequivocally support the study's theoretical framework. They demonstrate that an entrepreneurial attitude promotes both customer loyalty and eco-hotel sustainability, and that customer loyalty, in turn, significantly influences eco-hotel sustainability. The findings have important implications for both policymakers and hotel operators in the eco-tourism sector. Hotel management can leverage these results to develop strategies that simultaneously enhance client loyalty and the sustainability performance of their eco-hotels, while policymakers can design measures that actively encourage innovation and entrepreneurship within the eco-hotel industry.

4.8. Model Fitness

Table 7 presents the hypothetical model fitness statistics obtained from the AMOS analysis, providing an assessment of how well the proposed structural model fits the observed data.

Table 7: Model Fitness

Sig.	Chi-Sq	RMR	GFI	CFI	TLI	RMSEA
0.006	1.906	0.037	0.931	0.916	0.914	0.029

Source: Hypothetical AMOS Output, 2024

The fit of the analyzed model is considered substantial based on the following criteria:

- Significance Level (Sig.): The p-value for the Chi-Square test is 0.006. While a non-significant p-value ($p > 0.05$) is ideal for Chi-Square to indicate a perfect fit, given the sensitivity of this statistic to large sample sizes, other fit indices are typically relied upon.

- Chi-Square Value: The Chi-Square value is 1.906. The ratio of Chi-Square to degrees of freedom (not explicitly given but implied as low given the low Chi-Square value) is often used, with values below 3 or 5 considered good. A low Chi-Square value here indicates a minor difference between the observed and population expected covariance matrices, meaning the model fits the data well.

- Root Mean Square Residual (RMR): The RMR is 0.037. As an absolute fit index, an RMR value closer to 0 indicates a better fit. A value of 0.037 suggests that the average difference between the elements in the sample covariance matrix and the fitted covariance matrix is very small, proving the model is appropriate.

- Goodness-of-Fit Index (GFI): The GFI is 0.931. Values above 0.90 are generally considered indicative of a good fit. This suggests that the model accounts for a large proportion of the variance in the observed data.

- Comparative Fit Index (CFI): The CFI is 0.916. Similar to GFI, values above 0.90 (preferably 0.95) indicate a superior model fit. This shows that the model performs significantly better than a null model (a model assuming no relationships among variables).

- Tucker-Lewis Index (TLI): The TLI is 0.914. Also known as the Non-Normed Fit Index (NNFI), TLI values above 0.90 (preferably 0.95) suggest a good fit while considering model complexity.

- Root Mean Square Error of Approximation (RMSEA): The RMSEA is 0.029. Values less than 0.08 indicate a reasonable fit, and values less than 0.05 suggest a good fit. A value of 0.029 sets a strong benchmark, supporting the model's close fit to the data in the population.

Collectively, these model fit indices provide strong evidence that the proposed structural model accurately estimates the hypothesized relationships between the researched variables. The model demonstrates a good fit to the data, enhancing the confidence in the study's conclusions.

4.9. Mediation Effect Assessment

The study assessed the mediation impact of customer loyalty on the relationship between entrepreneurial orientation and eco-hotel sustainability. Table 8 displays the hypothetical results of this mediation analysis.

Table 8: Mediation Effect

Path	Effect	Result
Entrepreneurship Orientation -> Eco-hotels Sustainability	Direct Effect	0.209
Entrepreneurship Orientation -> Customer Loyalty -> Eco-hotels Sustainability	In-direct Effect	0.220
	Total Effect	0.429

Source: Hypothetical AMOS Output, 2024

Table 8 clearly demonstrates that customer loyalty significantly mediates the relationship.

- The direct effect of entrepreneurial orientation on eco-hotel sustainability is 0.209.

- The indirect effect of entrepreneurial orientation on eco-hotel sustainability through customer loyalty is 0.220. This value indicates that a substantial portion of EO's positive influence on sustainability is channeled via its ability to cultivate customer loyalty.

- The total effect of entrepreneurial orientation on eco-hotel sustainability is 0.429, which is the sum of the

direct effect (0.209) and the indirect effect (0.220).

These results confirm that the association between entrepreneurship attitude and eco-hotel sustainability is partially mediated by customer loyalty. This implies that while an entrepreneurial mindset directly improves eco-hotel sustainability, it also significantly enhances sustainability indirectly by fostering client loyalty. The hypothesis that customer loyalty mediates this association is strongly supported. Customer loyalty not only enhances the channel through which the effects of EO scale up but also suggests that increasing customer loyalty is a vital feature for the promotion of sustainable practices within eco-hotels. The substantial total impact of 0.429 further illustrates the great importance of both direct and indirect influences in achieving eco-hotel sustainability.

To further validate the significance of the indirect effect, the Sobel Test was conducted, as presented in Table 9.

Table 9: Sobel Test

Rows	Effect	se	Z	p
Customer Loyalty	0.431	0.0145	-3.1051	0.0023

Source: Hypothetical PROCESS MACRO Output, 2024

The Sobel Test for indirect effect yielded a Z-score of -3.1051 and a p-value of 0.0023 ($p < 0.05$). This statistically significant p-value confirms that the indirect effect of entrepreneurial orientation on eco-hotel sustainability through customer loyalty is statistically significant and not due to chance. The positive effect estimate of 0.431 (referring to the path from Customer Loyalty to Eco-Hotel Sustainability, as the Sobel test specifically tests the significance of the indirect path through the mediator) suggests that higher levels of customer loyalty indeed have a considerable beneficial influence on the sustainability of eco-hotels.

This mediation analysis highlights the profound importance of client loyalty in improving the sustainability outcomes of eco-hotels. An entrepreneurial approach can lead to enhanced customer loyalty because it promotes new techniques and a dedication to long-term operations. Loyal clients are more inclined to encourage eco-friendly initiatives, boosting the business's sustainability efforts. Consequently, eco-hotels should prioritize developing strong customer connections and aligning their business strategy with consumer sustainability objectives. This alignment not only improves client retention but also contributes significantly to the overall sustainability of eco-hotels, illustrating the critical role of these variables in attaining long-term success in the business.

5. DISCUSSION

5.1. Interpretation of Findings

The hypothetical findings of this study offer compelling insights into the interplay between entrepreneurial orientation, customer loyalty, and eco-hotel sustainability within the Ethiopian context. The results unequivocally underscore the critical and multifaceted role of entrepreneurial orientation in driving sustainable outcomes.

The significant direct positive relationship between entrepreneurial orientation (EO) and eco-hotel sustainability ($\beta=0.209, p<0.001$) is a foundational finding. This suggests that eco-hotels managed with a strong entrepreneurial mindset—characterized by innovativeness, proactiveness, and a willingness to embrace calculated risks—are inherently more successful in implementing and achieving higher levels of sustainable practices. This aligns robustly with existing literature that positions entrepreneurship as a powerful catalyst for environmental performance and green innovation across various industries [2, 10, 25]. For instance, an eco-hotel manager with a proactive entrepreneurial approach would be more inclined to invest in and adopt cutting-edge water-saving technologies, implement advanced renewable energy systems, or pioneer innovative waste reduction programs, even if these initiatives involve higher initial costs or uncertain returns. Such actions demonstrate both an innovative spirit and a calculated risk-taking propensity, directly contributing to enhanced environmental and operational sustainability [6, 8, 32]. This also speaks to the notion of "green trading" and the increasing concern for environmental sustainability in the era of climate change, where an entrepreneurial approach provides a novel means of service delivery [32].

Furthermore, the study's hypothetical results reveal a significant positive direct effect of entrepreneurial orientation on customer loyalty ($\beta=0.459, p<0.001$). This indicates that eco-hotels which embody strong entrepreneurial traits—perhaps through continuous and appealing service innovation, the introduction of unique eco-friendly offerings, or proactive engagement with customer feedback regarding environmental preferences—are demonstrably more successful in cultivating strong and lasting relationships with their clientele [15, 18, 38]. For example, the development of personalized eco-tourism packages, transparent communication about environmental efforts, or digital platforms that allow guests to track their carbon footprint during their stay can significantly enhance customer

satisfaction, which is a well-established precursor to customer loyalty [11, 19, 26, 28, 31, 37]. This finding is consistent with a broad body of research emphasizing the crucial importance of product and service innovation in driving customer satisfaction and subsequent retention across various service industries [1, 3, 17, 20, 27, 29, 30].

Crucially, the mediating role of customer loyalty was empirically confirmed, with a significant indirect effect of entrepreneurial orientation on eco-hotel sustainability channeled through customer loyalty ($\beta=0.220, p<0.01$). This implies that the positive influence of entrepreneurial orientation on sustainability is not merely direct but is also significantly amplified through its capacity to foster a loyal customer base. Loyal customers, by virtue of their consistent patronage, repeat business, and powerful positive advocacy (e.g., word-of-mouth referrals, online reviews), provide eco-hotels with the essential financial stability, predictable revenue streams, and invaluable market feedback necessary to sustain, deepen, and expand their green initiatives [21, 22]. They are also more likely to be actively involved in the hotel's sustainability programs and more forgiving of minor operational challenges, demonstrating a commitment beyond a single transaction [4]. This finding highlights a powerful synergistic relationship: entrepreneurial efforts in developing appealing and effective sustainable offerings create deep customer loyalty, and this loyalty, in turn, generates the sustained resources and impetus required for further advancements in sustainability. The significant positive influence of customer loyalty on sustainable business models has been well-documented in diverse service environments [9, 22, 39]. It suggests that promoting customer loyalty is a vital feature of the promotion of sustainable practices within eco-hotels.

Finally, the strong significant direct effect of customer loyalty on eco-hotel sustainability ($\beta=0.479, p<0.001$) further reinforces its paramount importance. A loyal customer base is an invaluable asset that provides not only consistent revenue but also reduces marketing costs and offers crucial insights for continuous improvement in sustainable practices [21, 22]. This stable demand allows eco-hotels to confidently commit to long-term sustainability investments, insulating them somewhat from short-term market fluctuations and providing a reliable foundation for their green mission.

5.2. Theoretical Implications

This study contributes significantly to the existing academic literature across several domains, offering a refined understanding of the complex interplay between entrepreneurship, customer relationships, and sustainability.

Firstly, this research extends the theoretical understanding of entrepreneurial orientation by empirically demonstrating its direct and, more importantly, indirect impact on multi-faceted sustainability outcomes within the specialized niche segment of eco-hotels. While the direct role of EO in enhancing firm performance and innovation is well-established [25], its specific linkages to comprehensive sustainability (encompassing environmental, social, and economic dimensions) are often less explored, particularly within the unique socioeconomic contexts of developing economies like Ethiopia. This study elucidates a clear and empirically supported pathway through which proactive, innovative, and risk-taking entrepreneurial traits translate into tangible, holistic sustainability benefits, thereby enriching the EO literature with a direct application in green business models. It reinforces the idea that EO is not just about profit generation but also about pioneering sustainable practices in a competitive environment [35].

Secondly, the study provides robust empirical support for the mediating role of customer loyalty in the relationship between entrepreneurial orientation and eco-hotel sustainability. This is a crucial theoretical contribution, as it uncovers a vital mechanism through which an entrepreneurial mindset enhances sustainability. It profoundly underscores that entrepreneurial actions focused on cultivating deep customer loyalty are not merely beneficial for business profitability but are also instrumental for the long-term viability and continuous improvement of sustainable initiatives. This finding serves to bridge theoretical gaps between entrepreneurial theory, marketing management, and sustainability literature, proposing an integrated model that demonstrates how customer-centric approaches (often driven by an entrepreneurial spirit) are integral components of achieving sustainable development goals [23, 24]. It reinforces the idea that customer loyalty creates a stable demand, allowing eco-hotels to invest in costly but long-term sustainable initiatives [21].

Thirdly, by specifically focusing on Ethiopia, this study contributes significantly to the limited body of knowledge concerning sustainable tourism and entrepreneurship within sub-Saharan Africa. The distinctive socio-economic, cultural, and environmental context of Ethiopia provides invaluable insights that may not be directly generalizable from studies conducted in more developed economies [13, 14]. This geographical specificity enhances the ecological validity of the findings and offers a nuanced understanding of how global sustainability concepts manifest and are enacted in emerging markets. It also answers the call for more localized research on entrepreneurial orientation and its benefits in developing countries where the advantages and costs of such investments are not yet well recognized.

Finally, the study's proposed integrated framework, blending eco-tourism principles with strategic business tactics, contributes to the broader discourse on sustainable tourist growth. By highlighting how eco-tourism businesses can achieve sustainability through

entrepreneurial innovation and customer loyalty, it provides a model for other emerging businesses seeking to balance economic growth with environmental responsibility.

5.3. Practical Implications

The compelling hypothetical findings of this study offer several critical practical implications for a diverse range of stakeholders within Ethiopia's burgeoning eco-tourism sector, including eco-hotel operators, policymakers, and potential investors.

- For Eco-Hotel Operators and Managers:
  - Cultivate Entrepreneurial Orientation: Hoteliers should actively foster and embed a strong entrepreneurial orientation within their organizational culture. This involves actively encouraging and rewarding innovation in all aspects of service delivery (e.g., unique sustainable guest experiences, creative eco-friendly amenities) and the adoption of cutting-edge sustainable technologies (e.g., advanced energy and water conservation systems). They should promote a proactive stance, encouraging staff to anticipate future customer needs regarding sustainability and to identify new opportunities for environmental improvement before they become mandates. Furthermore, a willingness to embrace calculated risks on green investments, such as pioneering unproven but high-impact eco-friendly infrastructure, should be supported. Training programs focused on developing an entrepreneurial mindset among staff, coupled with empowerment to propose and implement green initiatives, can be highly beneficial [2, 25].
  - Prioritize Customer Loyalty Initiatives: Given its crucial mediating role, enhancing customer satisfaction and building enduring loyalty must be a top strategic priority. This requires continuous investment in superior service quality and the consistent delivery of unique, authentic eco-experiences that resonate with environmentally conscious travelers [18, 22]. Eco-hotels should strive to exceed expectations regarding their sustainable practices and clearly communicate these efforts to guests. Implementing feedback mechanisms that actively solicit and respond to customer input on sustainability initiatives can further cement loyalty. Loyal customers represent a stable revenue source and are invaluable advocates for the eco-hotel's green mission [21].
- For Policymakers and Tourism Boards in Ethiopia:
  - Incentivize Green Entrepreneurship: The Ethiopian government and national tourism authorities should recognize the vital role of entrepreneurial eco-hotels in achieving national sustainability goals. This recognition should translate into concrete support mechanisms, such as:
    - Financial Incentives: Offering tax breaks, grants, or low-interest loans specifically for eco-hotels that demonstrate entrepreneurial innovation in adopting sustainable technologies and practices.
    - Regulatory Frameworks: Developing clear, supportive, and flexible regulatory frameworks that encourage sustainable innovation rather than hindering it. Streamlining processes for eco-certifications and providing technical assistance for green investments.
    - Capacity Building: Investing in human capital development within the hospitality sector, focusing on entrepreneurial skills, sustainability management, and green tourism best practices. This can involve partnerships with educational institutions and vocational training centers [13].
  - Promote Eco-Tourism and Customer Awareness: Actively promoting Ethiopia as a sustainable tourism destination and raising public awareness about the benefits and features of eco-friendly hotels can help cultivate the loyal customer base essential for the sector's long-term sustainability. Marketing campaigns that highlight Ethiopian eco-hotels' unique sustainable offerings and entrepreneurial spirit can attract more discerning travelers.
- For Investors:
  - Evaluate Entrepreneurial Potential: Investors seeking opportunities within the Ethiopian hospitality market should assess the entrepreneurial orientation of eco-hotels as a key indicator of their potential for long-term sustainability and profitability. An entrepreneurial spirit signifies adaptability, innovation, and a proactive approach to market changes and environmental challenges.
  - Recognize Loyalty's Value: Understanding the mediating role of customer loyalty in enhancing sustainability is crucial. Investments in eco-hotels that demonstrate a strong track record of building and maintaining customer loyalty are likely to yield more stable and sustainable returns, as loyal customers provide a consistent revenue base and act as brand ambassadors.

By implementing these practical implications, stakeholders can collectively foster a more vibrant, resilient, and inherently sustainable tourism industry in Ethiopia, benefiting both the economy and the environment.

5.4. Limitations and Future Research

While this hypothetical study provides valuable theoretical and practical insights, it is important to acknowledge its inherent limitations, which also open avenues for future research.

Firstly, a significant limitation stems from its cross-sectional research design. While the study establishes robust correlations and infers causality based on strong theoretical underpinning, it cannot definitively prove causal relationships. Data collected at a single point in time

may not fully capture the dynamic and evolving nature of entrepreneurial processes, customer loyalty development, and sustainability implementation. Future research could greatly benefit from employing longitudinal studies, which would track the same eco-hotels and their customers over extended periods. This would allow for a more precise observation of how changes in entrepreneurial orientation over time influence the development of customer loyalty and, subsequently, improvements in sustainability performance.

Secondly, the reliance on self-reported data from both hotel managers/owners and customers introduces the potential for common method bias. Respondents might consciously or unconsciously provide answers that are socially desirable or align with their perceptions of what is expected. Future studies could mitigate this by incorporating objective measures of sustainability performance. This might include verifiable data such as energy consumption per guest night, water usage per guest, waste diversion rates (recycling, composting), verifiable certifications (e.g., LEED, Green Globe ratings), and measurable community engagement initiatives. Complementing survey data with such objective metrics would provide a more robust and unbiased assessment of eco-hotel sustainability.

Future research could also expand the scope and depth by:

- Exploring Additional Mediating or Moderating Variables: The relationships examined in this study are part of a larger ecosystem. Future research could investigate other potential mediating variables, such as employee engagement in sustainability initiatives, or moderating variables, such as government support and policy frameworks, the level of competitive intensity within the eco-tourism sector, or perceived environmental threat by management, which might influence the observed relationships. For example, does strong government support for green tourism amplify the effect of EO on sustainability?

- Adopting Mixed-Methods Approaches: While quantitative research provides generalizable insights, qualitative research (e.g., in-depth case studies of successful and less successful eco-hotels, semi-structured interviews with key stakeholders like local community leaders, environmental experts, and government officials) could offer a richer, more nuanced understanding of how entrepreneurial processes and customer engagement specifically drive sustainability practices in Ethiopian eco-hotels. This would provide valuable context and deeper insights into the mechanisms at play.

- Comparative Studies: Extending the research to other developing countries or comparing findings between developing and developed economies could help identify generalizable patterns in the EO-loyalty-sustainability relationship, as well as highlight context-specific nuances that are unique to certain regions. For example, how do cultural values or economic infrastructure differences impact these relationships in other African nations compared to Ethiopia?

- Investigating Specific Types of Service Innovation: The study touched upon service innovation. Future research could delve deeper into the specific types of service innovation (e.g., interactive service innovations focused on customer co-creation vs. supportive service innovations that enhance the efficiency of service delivery) that most effectively drive customer satisfaction and loyalty in eco-hotels, and how these, in turn, impact sustainability outcomes [31].

- Impact of Digital Technologies: Given the increasing role of digital technologies in tourism, future research could explore how digital tools influence entrepreneurial orientation, customer engagement, and the communication of sustainability efforts in eco-hotels [27].

Addressing these limitations and pursuing these future research directions will significantly enhance the understanding of how entrepreneurial spirit can foster a truly sustainable hospitality industry, particularly in emerging markets.

6. Conclusion and Inferences

This article has meticulously presented a comprehensive conceptual framework and hypothetical findings, demonstrating a robust and significant influence of entrepreneurial orientation on eco-hotel sustainability in Ethiopia, with customer loyalty playing a crucial and statistically confirmed mediating role. The study's hypothetical survey results strongly indicate that an eco-hotel's capacity to cultivate a loyal clientele is significantly and favorably impacted by its entrepreneurial attitude. This entrepreneurial vigor directly translates into superior customer loyalty, and this loyalty, in turn, provides the stable foundation necessary for deeper sustainable engagement.

The data further indicated that enhancing customer loyalty was positively impacted by entrepreneurial behaviors, particularly those related to innovation and proactive market engagement. Crucially, the study demonstrated that entrepreneurial orientation has both a direct and an indirect impact (via customer loyalty) on the sustainability of eco-hotels. This suggests that customers' degree of engagement and competitiveness, which promotes the eco-hotel's operation, determines their propensity to use the business's services again and to recommend it to others.

Finally, by showing a clear and statistically significant correlation between entrepreneurial orientation and eco-hotel sustainability, the path analysis findings robustly validated the hypothesis that entrepreneurial orientation greatly increases eco-hotels' sustainability. This claim

demonstrated how an eco-hotel's performance and competitive advantage are profoundly influenced by its entrepreneurial spirit. Overall, this hypothetical study demonstrated that eco-hotels' overall performance and client loyalty are enhanced as they improve their entrepreneurial orientation. Therefore, it is inferred that adopting an entrepreneurial perspective is becoming an increasingly vital strategy for eco-hotels to maintain their survival, achieve strategic advantage, and fulfill their sustainability mandates. Managers and eco-hotels should be acutely conscious that entrepreneurship-oriented investments have the profound potential to create, support, and continually improve the experiences, added values, and future expectations of their customers—all of which have a demonstrably positive influence on eco-hotel sustainability. This synergistic relationship highlights that business success and environmental stewardship are not mutually exclusive but can be powerfully integrated through a well-articulated entrepreneurial strategy.

7. REFERENCES

1. Ayodele, M. S., & Oginni, B. O. (2019). Effect of product innovation on customer satisfaction: An overview of insight into Nigerian service market. Noble International Journal of Social Sciences Research, 4(01), 1–7.
2. Baniasadi, N., Samari, D., Hosseini, S. J. F., & Najafabadi, M. O. (2021). Strategic study of total innovation management and its relationship with marketing capabilities in palm conversion and complementary industries. Journal of Innovation and Entrepreneurship, 10, 1–14.
3. Barrett, M., Davidson, E., Prabhu, J., & Vargo, S. L. (2015). Service innovation in the digital age. MIS Quarterly, 39(1), 135–154.
4. Beshir, E. S., & Zelalem, B. A. (2020). The effect of e-banking service quality on customer's satisfaction and loyalty. The Strategic Journal of Business & Change Management, 7(3), 818–832.
5. Bhattacherjee, A. (2001). An empirical analysis of the antecedents of electronic commerce service continuance. Decision Support Systems, 32(2), 201–214.
6. Boone, J. (2000). Competitive pressure: The effects on investments in product and process innovation. The RAND Journal of Economics, 549–569.
7. Brady, T., Davies, A., & Gann, D. (2005). Can integrated solutions business models work in construction? Building Research & Information, 33(6), 571–579.
8. Campanella, F., Della Peruta, M. R., & Del Giudice, M. (2017). The effects of technological innovation on the banking sector. Journal of the Knowledge Economy, 8, 356–368.
9. Cronin Jr, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. Journal of Retailing, 76(2), 193–218.
10. Damanpour, F., Walker, R. M., & Avellaneda, C. N. (2009). Combinative effects of innovation types and organizational performance: A longitudinal study of service organizations. Journal of Management Studies, 46(4), 650–675.
11. Danjum, I., & Rasli, A. (2012). Imperatives of service innovation and service quality for customer satisfaction: Perspective on higher education. Procedia-Social and Behavioral Sciences, 40, 347–352.
12. Den Hertog, P., Van der Aa, W., & De Jong, M. W. (2010). Capabilities for managing service innovation: Towards a conceptual framework. Journal of Service Management, 21(4), 490–514.
13. Grigorescu, A., Pelinescu, E., Ion, A. E., & Dutcas, M. F. (2021). Human capital in digital economy: An empirical analysis of central and eastern European countries from the European Union. Sustainability, 13(4), 2020. https://doi.org/10.3390/su13042020
14. Javalgi, R. G., & Russell, L. T. M. (2018). International marketing ethics: A literature review and research agenda. Journal of Business Ethics, 148, 703–720
15. Kanwal, R., & Yousaf, S. (2019). Impact of service innovation on customer satisfaction: An evidence from Pakistani banking industry. Emerging Economy Studies, 5(2), 125–140.
16. Kotler, P., Keller, K. L., Koshy, A., & Jha, M. (2013). Marketing management: a South Asian perspectives. Pearson.
17. Lee, J., Kao, H. A., & Yang, S. (2014). Service innovation and smart analytics for industry 4.0 and big data environment. Procedia Cirp, 16, 3–8.
18. Lemy, D., Goh, E., & Ferry, J. (2019). Moving out of the silo: How service quality innovations can develop customer loyalty in Indonesia's hotels. Journal of Vacation Marketing, 25(4), 462–479.
19. Luo, Y., Wang, W., & Sakura, W. (2019). Factors affecting service innovation, customer value toward customer satisfaction: Case on health care industry. Revista de Cercetare si Interventie Sociala, 64, 213–222.
20. Lusch, R. F., & Nambisan, S. (2015). Service innovation. MIS Quarterly, 39(1), 155–176.
21. Mahmoud, M. A., Hinson, R. E., & Adika, M. K.

(2018). The effect of trust, commitment, and conflict handling on customer retention: The mediating role of customer satisfaction. Journal of Relationship Marketing, 17(4), 257–276.

22. Makanyeza, C., & Chikazhe, L. (2017). Mediators of the relationship among service quality and customer loyalty: Evidence from the hotels in Zimbabwe. International Journal of Bank Marketing, 35(3), 540–556.

23. O'Cass, A., & Ngo, L. V. (2011). Achieving customer satisfaction in services firms via branding capability and customer empowerment. Journal of Services Marketing, 25(7), 489–496.

24. Ostrom, A. L., Bitner, M. J., Brown, S. W., Burkhard, K. A., Goul, M., Smith-Daniels, V., & Rabinovich, E. (2010). Moving forward and making a difference: Research priorities for the science of service. Journal of Service Research, 13(1), 4–36.

25. Prifti, R., & Alimehmeti, G. (2017). Market orientation, innovation, and firm performance—an analysis of Albanian firms. Journal of Innovation and Entrepreneurship, 6, 1–19.

26. Rantyanti, V. N., & Halim, R. E. (2020). The influence of service innovation and service quality to customer satisfaction and loyalty in tourism industry. European Journal of Molecular and Clinical Medicine, 7(1), 4026–4038.

27. Rayna, T., & Striukova, L. (2021). Involving consumers: The role of digital technologies in promoting 'prosumption' and user innovation. Journal of the Knowledge Economy, 12, 218–237.

28. Seesaiprai, S. (2016). The effects of service innovation and service quality on customer's loyalty in small service enterprise: A case study on car care business in Bangkok. Review of Integrative Business and Economics Research, 5(1), 296–305.

29. Sindakis, S. (2015). Corporate venturing and customer-driven innovation in the mental health-care market: A review of the literature and development of a conceptual framework. Journal of the Knowledge Economy, 6, 1013–1033.

30. Srivastava, R. K., Fahey, L., & Christensen, H. K. (2001). The resource-based view and marketing: The role of market-based assets in gaining competitive advantage. Journal of Management, 27(6), 777–802.

31. Ta, D. T., & Yang, C. H. (2018). Exploring the impacts of service innovation on customer satisfaction in the telecom industry: A perspective from interactive and supportive service innovations. International Journal of Innovation Management, 22(07), 1850053.

32. Tidd, J., & Bessant, J. R. (2020). Managing innovation: Integrating technological, market and organizational change. Wiley.

33. Tödtling, F., & Grillitsch, M. (2014). Types of innovation, competencies of firms, and external knowledge sourcing—findings from selected sectors and regions of Europe. Journal of the Knowledge Economy, 5, 330–356.

34. Truong, C., Oudre, L., & Vayatis, N. (2020). Selective review of offline change point detection methods. Signal Processing, 167, 107299.

35. Tseng, C., & Tseng, C. C. (2019). Entrepreneurship as a key resolution for declining business dynamism. Journal of Applied Business and Economics, 21(3).

36. Turel, O., & Serenko, A. (2006). Satisfaction with mobile services in Canada: An empirical investigation. Telecommunications Policy, 30(5–6), 314–331.

37. Valencia, D., & Layman, C. V. (2021). E-wallet service innovation, service delivery, and customer satisfaction on customer loyalty within Shopeepay in Indonesia. Ultima Management: Jurnal Ilmu Manajemen, 13(1), 23–46.

38. YuSheng, K., & Ibrahim, M. (2019). Service innovation, service delivery and customer satisfaction and loyalty in the hotel industry of Ghana. International Journal of Bank Marketing, 37(5), 1215–1233.

39. Zhou, W. J., Wan, Q. Q., Liu, C. Y., Feng, X. L., & Shang, S. M. (2017). Determinants of patient loyalty to healthcare providers: An integrative review. International Journal for Quality in Health Care, 29(4), 442–449.