

Digital Engagement and Guest Satisfaction: Advancing Sustainable Tourism at Boundless Bali

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Abstract

Purpose: This study examines the influence of digital communication on guest satisfaction and its role in supporting perceived sustainable tourism outcomes within the specific context of slow tourism for digital nomad families at Boundless Bali.

Research Methodology: A mixed-method sequential explanatory design was employed. Quantitative data were collected from 120 guests and analyzed using SEM-PLS. This was followed by a qualitative phase involving semi-structured interviews and focus group discussions with five key informants, processed through thematic analysis using NVivo 15.

Results: Digital communication has a significant positive effect on guest satisfaction ($T=4.880$, $p<0.05$). The model yielded R-square values of 0.277 for satisfaction and 0.356 for sustainable tourism. Importantly, guest satisfaction serves as a significant partial mediator between digital communication and sustainable tourism ($T=2.674$, $p=0.008$).

Conclusions: While digital communication facilitates operational efficiency, its impact on sustainability is primarily realized when it successfully enhances guest satisfaction. Effective digital strategies focusing on accessibility and personalization act as a mechanism for encouraging responsible travel behaviorst.

Limitations: The study is limited by its reliance on self-reported data from a single site, which limits the generalizability of the findings.

Contributions: This research applies the Technology Acceptance Model (TAM) and Smart Tourism Technology (STT) frameworks to the slow tourism niche, providing a model for hospitality practitioners to integrate digital tools to foster guest satisfaction and environmental awareness.

Keywords: *Bali, Digital Communication, Guest Satisfaction, Sustainable Tourism, Slow Tourism*

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1. Introduction

Bali occupies a central role in the global hospitality sector, attracting visitors through its unique spiritual culture and varied landscapes. Recent shifts in travel behaviour after the pandemic show a growing preference for longer stays where guests choose to immerse themselves deeply into local life (Balaban & Keller, 2024). Slow tourism offers a sustainable alternative to the destructive patterns of mass tourism, focusing on a more mindful and intentional way of exploring a destination (Serdane et al., 2020). Travelers today place a higher value on community engagement and cultural authenticity as

a way to avoid the negative impacts of overtourism ([Klarin et al., 2023](#)). Statistical records from early 2025 reveal that Bali monthly arrivals grew from 529,897 in January to nearly 700,000 by mid-year, indicating that the demand for slow-paced travel remains incredibly high.

Tourism operators now use fast digital tools to keep up with these changing guest expectations. Many destination managers moved toward digital communication via social media to share safety updates and build better connections with their audience ([Pachucki et al., 2022](#)). Small accommodation businesses utilize online channels to share their sustainability efforts, which directly affects how guests view the quality of a stay ([Tiago et al., 2021](#)). Traditional face-to-face interactions are fading as a complex ecosystem of mobile apps, chatbots, and web portals takes over service delivery ([Subawa & Leonita, 2024](#)). Digital systems act as the primary engines for building guest trust and long-term loyalty in the modern hospitality market ([Bilgihan et al., 2016](#)).

Relying too heavily on technology brings difficult challenges that can damage the overall guest experience. Many visitors feel exhausted trying to navigate multiple apps and communication channels just to find basic information. Purely digital systems can lead to a loss of human touch and make guests more vulnerable to misinformation ([Thomas, 2024](#)). The Technology Acceptance Model (TAM) suggests that people only accept new systems if they perceive them as useful and easy to operate ([Davis, 1989](#)). Inconsistent messages across different platforms create confusion and push guests to file complaints, which ruins the efficiency that digital tools are supposed to provide ([Asthati et al., 2024](#)).

A major research gap exists regarding how integrated digital platforms affect slow tourism for digital nomad families who stay for 1 to 6 months. While previous studies looked at digital transformation in large hotels, the way specific portals like Slack influence long-term travelers remains largely unexplored ([Abdel-Hamid et al., 2022](#)). Boundless Bali operates as an impact-driven provider where almost 100% of communication happens online, creating an environment to test these digital dynamics. This research analyzes how digital strategies can reach high satisfaction levels while promoting responsible travel behaviors. Finding a balance that maximizes satisfaction through easy access can help the tourism industry move toward a more environmentally stable future where 80% of operations function without paper.

2. Literature Review and Hypotheses Development

Integration of digital systems into the daily operations of tourism businesses changed how guests interact with their environment and the service providers they choose. In the modern hospitality market, digital communication functions as a primary tool for both internal management and external guest engagement ([Asthati et al., 2024](#)). Digital channels provide a way for businesses to share relevant and interactive content that shapes the overall guest experience ([Bilgihan et al., 2016](#)). Moving toward a digital-first approach allows companies to offer transparency and accessibility, which transforms the traditional service encounter into a dynamic process where guests co-create their own travel experiences through 2-way interactions.

Digital transformation involves a strategic shift where tourism organizations adopt interactive platforms like IoT and AI to strengthen destination management ([Madzik et al., 2023](#)). This process relies on digital devices to send electronic information via email, text messaging, and social media to create faster connection pathways between businesses and their customers. Within the specific sector of sustainable travel, online channels like websites and Google Business are used to communicate sustainability claims and share operational details that influence how visitors perceive a destination ([Tiago et al., 2021](#)). The Smart Tourism Technology (STT) framework provides a structural way to look at these digital experiences through 5 original dimensions: informativeness, accessibility, interactivity, personalization, and security ([Pai et al., 2020](#)).

The Technology Acceptance Model (TAM) offers a foundation for explaining why people choose to use certain digital systems over others. According to [Davis \(1989\)](#), the primary drivers of technology acceptance are perceived usefulness and perceived ease of use. Perceived usefulness involves the

belief that using a specific technology will provide functional benefits or make tasks more efficient. While many models test usefulness as a separate variable, this study integrates the “usefulness” aspect into the STT dimensions of informativeness and personalization. High-quality information and tailored services directly represent the functional utility guests gain from a system, making usefulness a core part of the digital communication construct ([Davis, 1989](#); [Pai et al., 2020](#)).

Adding “perceived ease of use” as a 6th dimension to the STT framework is a necessary step to address the specific needs of digital nomad families. Even if a system is highly personalized or secure, guests will likely reject it if the interface feels too complex or requires excessive technical effort ([Mohamad et al., 2021](#)). Digital nomads often experience “tech fatigue” after working online for 8 to 10 hours a day, so they prefer hospitality platforms that minimize cognitive load ([Thomas, 2024](#)). Perceived ease of use reflects the expectation that a platform is simple to operate, which acts as a gatekeeper for the other 5 STT dimensions. Habitual use of a system depends on how easily a guest can access information without hitting technical barriers ([Sugiarto, 2024](#)).

Guest satisfaction involves an emotional and cognitive process where a visitor compares the actual performance of a service with their initial expectations ([Kotler & Keller, 2017](#)). Satisfaction levels represent the difference between the perceived quality of an experience and what the guest hoped to receive ([Alan et al., 2023](#)). In a digital setting, satisfaction is heavily tied to convenience, which allows users to find information quickly and make reservations with very little effort ([Justin, 2023](#)). Efficient service delivery via digital media provides responsive and high-quality interactions that drive guests to recommend a business to others ([Adisa & Bamidele, 2024](#); [Zeng & Li, 2021](#)).

Sustainable tourism focuses on a long-term development approach that protects environmental quality while supporting the socio-cultural well-being of local communities ([Jayanti et al., 2021](#)). This involves a triangulation between the habitat, the industry, and the guest experience to ensure natural resources are managed responsibly. Environmental sustainability aims to reduce material waste, while social sustainability centers on maintaining the quality of life for local people and culture. Valuable cultural traditions can be preserved for future generations while also providing economic benefits to local communities. . Economic standpoint it greatly facilitates capital movements, financial services, the exchange of goods and services so that it automatically facilitates people to transact This behavior promotes a more equitable distribution of tourism revenue and strengthens the resilience of the local economy. Economic sustainability ensures that tourism activities provide lasting financial benefits to the area. satisfied guests are more likely to support local businesses, including small enterprises, artisans, and service providers. . Slow tourism serves as a mindful alternative to mass tourism by emphasizing local culture and longer stay durations ([Walker et al., 2021](#); [Klarin et al., 2023](#)).

Previous studies show a gap in examining digital communication for the unique niche of slow tourism for digital nomad families. Research in other sectors indicates that digital transformation can improve efficiency by 30% and boost satisfaction by 15% ([Anwar et al., 2024](#)). However, the way integrated platforms like Slack or proprietary web portals influence long-term travelers who stay for 1 to 6 months remains under-researched. While website quality is known to influence satisfaction among certain demographics, the direct link between digital engagement and specific sustainable behavioral outcomes is not yet fully established ([Suryawardani et al., 2021](#); [Fianto & Andrianto, 2022](#)).

H₁: Digital communication has a significant positive influence on guest satisfaction at Boundless Bali

The first hypothesis suggests that digital tools directly shape how guests feel about their stay. When a hospitality provider offers accurate information through accessible and interactive channels, guests perceive the service as higher quality ([Asthiti et al., 2024](#)). Digital nomad families rely on digital platforms to manage their daily lives, meaning a streamlined communication system reduces the friction of travel and builds trust ([Bilgihan et al., 2016](#)). High levels of personalization and security in digital interactions meet the specific functional needs of this group, leading to higher satisfaction scores.

H₂: Digital communication demonstrates a significant direct effect on sustainable tourism outcomes

The second hypothesis argues that technology acts as a tool for environmental and economic conservation. Digital communication allows a business to reach a paperless state, where 80% of daily operations, including check-ins and activity schedules, occur without physical waste. By replacing printed materials with digital screens and portals, the organization directly supports environmental sustainability ([Tiago et al., 2021](#)). Furthermore, digital platforms increase the visibility of local artisans and workshops, which helps keep economic value within the local community and promotes responsible consumption patterns ([Fianto & Andrianto, 2022](#)).

H₃: Guest satisfaction significantly influences the advancement of sustainable tourism

The third hypothesis addresses the idea that satisfied guests are more likely to participate in sustainability initiatives. Satisfaction creates an emotional bond between the guest and the destination, which fosters a sense of responsibility ([Zeng & Li, 2021](#)). Happy guests who feel well-served by the local staff and digital systems develop social trust, making them more receptive to environmental messages and social programs ([Jayanti et al., 2021](#)). While satisfaction does not automatically guarantee sustainable behavior, it acts as a psychological prerequisite that makes guests more willing to support the long-term goals of the destination.

H₄: Guest satisfaction significantly mediates the relationship between digital communication and sustainable tourism

The final hypothesis identifies satisfaction as the bridge that connects technology to sustainable outcomes. Digital communication provides the accessibility and ease of use that makes guests feel comfortable and valued. This positive emotional state then translates into a higher likelihood of engaging in responsible travel behaviors, such as reducing plastic waste or supporting local Balinese entrepreneurs. Without a high level of satisfaction, digital tools might be viewed as cold or burdensome, which would prevent guests from caring about the sustainability efforts of the company. Satisfaction serves as the strategic mechanism through which digital engagement reaches its full potential for environmental and social impact ([Bilgihan et al., 2016](#); [Jayanti et al., 2021](#)).

3. Research Methodology

The study utilizes a mixed-method approach, combining quantitative and qualitative techniques to This research utilizes a mixed-method sequential explanatory design to ensure the data remains objective and provides a deep look into the guest experience at Boundless Bali ([Creswell, 2019](#); [Sugiyono, 2020](#)). The process starts with a quantitative survey to identify broad statistical relationships and then follows up with qualitative interviews to explain the “why” behind those numbers. Fieldwork took place at Boundless Bali in Sanur, an organization that specifically serves digital nomad families who stay for long periods between 1 and 6 months ([Balaban & Keller, 2024](#)). This specific environment allows for a detailed investigation into how digital tools influence long-term travelers who live and work online.

3.1 Sampling Strategy and Potential Bias

The quantitative phase involved 120 international guests selected through an accidental sampling technique. This approach targets travelers who were present and available at the research site during the recruitment period from February to April 2026. While accidental sampling is practical for niche hospitality settings, it carries a risk of selection bias because the sample might only represent guests who are more active on digital platforms or more willing to engage with the management ([Sugiyono, 2020](#)). The sampling frame consisted of the active guest list by the Boundless Bali community database.

To ensure the data remained relevant, the study applied strict eligibility criteria where participants had to be international travelers staying for at least 30 days and actively using the Boundless portal or Slack application. Out of 150 invited guests, 120 completed the survey, resulting in an 80% response

rate. Researchers distributed the questionnaire link through Slack channels and placed physical QR codes at the co-working hub to capture as many responses as possible during the 3-month window. This high engagement from the community helped minimize the impact of non-response bias and provided a solid foundation for the Structural Equation Modeling using Partial Least Squares (SEM-PLS) analysis ([Hair et al., 2022](#)).

3.2 Instrumentation and Content Validity

The primary research instrument is a structured questionnaire featuring 34 distinct items that measure Digital Communication, Guest Satisfaction, and Sustainable Tourism. These items are measured on a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). The Digital Communication variable uses 22 items adapted from the Smart Tourism Technology (STT) dimensions of informativeness, accessibility, interactivity, personalization, and security ([Pai et al., 2020](#)), with the addition of perceived ease of use from the Technology Acceptance Model ([Davis, 1989](#)). Guest Satisfaction is measured using 6 items focusing on convenience and service delivery. Sustainable Tourism is evaluated through 6 items covering environmental, social, and economic impacts ([Bramwell et al., 2016](#)).

The instrument underwent a rigorous adaptation and translation process to fit the specific Bali hospitality environment. Since the original scales were in English, researchers used a back-translation method to ensure that the meaning of every question remained accurate after being adapted for the local service culture. A pilot test was conducted with 30 participants before the main data collection phase. This trial showed that all variables had Cronbach Alpha values above 0.7, confirming the reliability and internal consistency of the questions ([Chin & Dibbern, 2010](#)). Content validity was further established by consulting 2 academic experts and the General Manager of Boundless Bali to ensure every item directly addressed the operational realities of a digital-first hospitality provider ([Huang, Goo, Nam, & Yoo, 2017](#)).

3.3 Qualitative Inquiry and Coding Procedures

The qualitative phase utilized semi-structured interviews and a Focus Group Discussion (FGD) to add depth to the statistical results. The sample included 3 guests and 2 key management figures: the Community Coordinator and the General Manager. While the sample size of 5 informants seems small, the research reached data saturation by the 5th interview as the themes regarding Slack usage and technical friction started to repeat without providing new information ([Creswell, 2019](#)). This repetition indicates that the qualitative data adequately covers the experiences of the specific digital nomad family niche at this location.

Researchers processed all interview transcripts using NVivo 15 software through a multi-stage coding procedure. The first stage involved open coding to identify raw themes such as “Slack notifications” or “paperless check-in.” The second stage used axial coding to group these themes into broader categories like “convenience” and “resource efficiency.” Finally, selective coding was applied to connect these categories back to the original hypotheses. Using the Word Frequency Query feature, the analysis identified “personalized responses” and “information accessibility” as the most frequent concepts mentioned by guests. This systematic coding process ensures that the qualitative findings are not just anecdotal but are based on a verified thematic structure ([Miles et al., 2014](#)).

3.4 Data Analysis via SEM-PLS

Numerical data were analyzed using Structural Equation Modeling Partial Least Squares (SEM-PLS) with SmartPLS 4 software. This method works effectively for exploratory models that test complex relationships between latent variables in small to moderate datasets ([Hair, Hult, Ringle, & Sarstedt, 2022](#)). The analysis followed a 2-stage process: evaluating the measurement model and then the structural model. The measurement model checked for validity using Average Variance Extracted (AVE) with a threshold of 0.50 and Heterotrait-Monotrait (HTMT) ratios below 0.90 to ensure every variable was distinct ([Ghozali, 2014](#)). The structural model tested the path coefficients and T-statistics using a bootstrapping procedure with 5,000 resamples to determine if the relationships were significant at a 95% confidence level.

3.5 Ethical Considerations and Data Protection

This study strictly followed ethical guidelines established by the Politeknik Negeri Bali. All participants received a clear explanation of the research goals. Participation was entirely voluntary, and guests could withdraw from the study at any point without any consequences to their stay. The research team maintained strict confidentiality by anonymizing all names and personal identifiers in the final report.

Data protection procedures involved storing all digital responses on a password-protected drive that only the primary researchers could access. Physical observation checklists were kept in a secure location and destroyed after being digitized. The researchers also ensured that the use of Slack data for observation was limited to the dynamics of staff-guest interaction and did not involve reading private messages between families. These procedures protect the privacy of the digital nomad community while allowing for a transparent and honest evaluation of the digital communication systems used at the site. This ethical framework ensures that the findings are produced with integrity and respect for the individuals who provided their time and feedback ([Kathiravan & Prabu, 2024](#)).

4. Results and Discussions

Analysis of the 120 guest profiles shows that the target market for Boundless Bali consists mostly of international travelers from the United States at 29%, followed by equal representation from Europe and Australia at 25% each. Female guests make up 59% of the group, while male guests account for 41%. The age distribution reveals that 36% of participants are between 41 and 50 years old, which fits the profile of established families traveling while working remotely. Most of these guests work in professional sectors, specifically finance at 41% and the tech industry at 31%. Digital platforms play a massive role in their journey, as 47% of these families discovered the brand through social media before arriving in Bali.

4.1 Comprehensive SEM-PLS Evaluation

The measurement model evaluation ensures that all indicators used in the study are reliable and valid. Loading factors for every item in the survey exceeded the required 0.70 threshold, which proves that the chosen questions effectively represent the underlying variables. In the digital communication category, the highest loading factor was found in the “perceived ease of use” dimension, where the platform's ability to help guests make better travel decisions scored 0.871. Within the guest satisfaction variable, the indicator for personalized services recorded a loading of 0.876, suggesting that tailored interactions are the strongest drivers of positive feelings among digital nomad families. Sustainable tourism indicators also showed high reliability, particularly in terms of improved transparency between tourists and stakeholders at 0.868.

Reliability and validity tests confirm the scientific rigor of the model. Cronbach Alpha and Composite Reliability scores for digital communication reached 0.978, while guest satisfaction and sustainable tourism scored 0.924 and 0.915, respectively. These values are well above the 0.70 standard, indicating high internal consistency. The Average Variance Extracted (AVE) for all variables exceeded 0.50, meaning the constructs explain more than 50% of the variance in their indicators. Discriminant validity was verified through the Heterotrait-Monotrait Ratio (HTMT), where all values remained below 0.58, which is far lower than the 0.90 limit. This confirms that each variable Digital Communication, Guest Satisfaction, and Sustainable Tourism measures a distinct concept.

To check for common-method bias, Variance Inflation Factor (VIF) values were monitored during the structural analysis. The Standardized Root Mean Square Residual (SRMR) reached 0.047, indicating that the proposed model fits the real-world data. The structural model evaluation shows that digital communication explains 27.7% of the variance in guest satisfaction (R -square = 0.277) and 35.6% of the variance in sustainable tourism outcomes (R -square = 0.356). Predictive relevance was established through Q -square values, with guest satisfaction at 0.244 and sustainable tourism at 0.194, both staying well above zero.

4.2 Hypothesis Testing and Causal Paths

Table 1. Results of structural path analysis

Path	Sample (O)	T-Statistic	P-Value	Result
Digital Comm -> Guest Satisfaction (H_1)	0.526	4.880	0.000	Supported
Digital Comm -> Sustainable Tourism (H_2)	0.305	3.108	0.002	Supported
Guest Satisfaction -> Sustainable Tourism (H_3)	0.377	3.905	0.000	Supported
Comm -> Satisfaction -> Sustainability (H_4)	0.198	2.674	0.008	Supported

Statistical testing in Table 1 for H_1 shows a T -statistic of 4.880, confirming that digital communication acts as a primary driver of satisfaction. Guests value accessibility most, particularly the lack of technical barriers when reaching information (loading = 0.833). H_2 is supported by a T -statistic of 3.108, showing technology has a direct link to sustainability through operational efficiency. H_3 shows that satisfied guests are significantly more likely to participate in sustainable practices ($T = 3.905$). Finally, H_4 confirms that guest satisfaction is a significant mediator, with a T -statistic of 2.674, meaning technology advances sustainability by first making the guests happy.

4.3 Narrative Evidence from Qualitative Inquiry

The qualitative phase adds necessary depth to the numbers by exploring the daily digital interactions at Boundless Bali. Management records show that about 80% of routine operational activities now function through digital interfaces. This shift means that tasks like check-in, activity scheduling, and billing have transitioned to digital formats, which has substantially cut down the volume of physical documentation required for guest management. While 100% digitization has not been achieved yet, this transition represents a major move toward resource efficiency.

Interviews with the Community Coordinator reveal that the Net Promoter Score (NPS) stays stable at 4 to 5, largely because the digital strategy focuses on speed and reliability. The use of Slack creates a verified community hub where families feel secure because they only enter via personalized invitation links. However, a significant narrative emerged regarding the “technology gap.” Younger digital nomads find the Slack-based ticketing system intuitive, but some elderly guests report feeling overwhelmed by the sheer volume of notifications. Management addresses this “digital fatigue” by using a chatbot that filters frequently asked questions outside working hours, which prevents guests from having to search through long chat histories.

Guest feedback reinforces the idea that personalization is more than just a marketing buzzword. One guest mentioned that having 1 central phone portal for everything is convenient, but warned that it becomes exhausting to find “the important message” among hundreds of updates. This matches the NVivo analysis, where “personalized responses” and “experiences” were the most frequent terms used by informants. Guests feel most valued when they receive direct, real-time answers rather than generic automated replies. This high-quality service delivery builds social trust, which encourages guests to attend local pottery workshops and jamu classes, keeping economic value within the Balinese community.

4.4 Discussion of Findings

The results prove that digital communication is not just a support tool but a strategic mechanism that dictates the guest journey. By adding “perceived ease of use” to the Smart Tourism Technology (STT) dimensions, the model accounts for the high literacy but limited time of digital nomad families. Efficiency in communication leads to higher satisfaction, and this satisfaction makes guests more

receptive to environmental and social messages. Economic sustainability improves because the integrated digital payment system allows international guests to pay for local services securely without needing a local bank account, reducing fees for third-party intermediaries.

A clear link exists between the digital strategy and the reduction of waste. Replacing paper brochures with the Boundless portal and Slack channels has minimized the reliance on raw materials for guest coordination. Even though technology can create fatigue, the organization manages this by maintaining a balance between automated efficiency and human support when technical friction occurs. The “Sustainable Tourism Digital Communication Model” developed here shows that technology acts as a catalyst for environmental, social, and economic benefits through the mediation of guest satisfaction.

5. Conclusions

5.1 Conclusion

Evidence from 120 international guests proves that digital communication acts as a supportive factor for guest satisfaction and perceived sustainable tourism outcomes at Boundless Bali. Statistical analysis via SEM-PLS supports the hypothesized paths, where digital strategies focusing on accessibility and personalization account for 27.7% of the variance in guest satisfaction. Analysis reveals that guest satisfaction serves as a significant partial mediator, connecting technological efficiency to broader sustainability goals. Transitioning toward a digital-first model allowed the organization to conduct 80% of its daily operations without paper, which directly reduces material waste in the local environment.

5.2 Research Limitations

This study has several limitations that should be considered when interpreting the findings. First, the research was conducted at a single hospitality provider, Boundless Bali, which primarily serves digital nomad families. Consequently, the findings may not be directly generalizable to other tourism destinations, conventional hotels, resorts, or accommodation providers with different operational characteristics. Second, the quantitative findings were derived from self-reported questionnaire responses collected through accidental sampling. Although this approach was appropriate for the targeted population and achieved a satisfactory response rate, respondents' perceptions may be influenced by social desirability bias and individual subjective experiences, potentially affecting the accuracy of the reported relationships.

Third, the study employed a cross-sectional research design that captured respondents' perceptions at one point in time. As a result, the study was unable to examine changes in digital communication practices, guest satisfaction, and sustainable tourism behavior over longer periods or establish stronger causal relationships. Fourth, the proposed research model focused primarily on digital communication, guest satisfaction, and sustainable tourism based on the Technology Acceptance Model (TAM) and Smart Tourism Technology (STT) frameworks. Other potentially influential variables, such as digital literacy, destination image, perceived value, trust, service quality, environmental awareness, and revisit intention, were not incorporated into the structural model.

Finally, the qualitative phase involved only five key informants. Although data saturation was achieved within the specific research context, broader stakeholder perspectives, including local communities, tourism policymakers, and other hospitality operators, were not represented. Future studies are therefore encouraged to adopt longitudinal designs, involve multiple tourism destinations, employ probability sampling techniques, and incorporate additional explanatory variables to enhance the robustness and generalizability of the findings.

5.3 Suggestions and Directions for Future Research

Hospitality managers can design communication systems that prioritize real-time interactivity through platforms like Slack while ensuring high data security to build social trust. Staff training should focus on bridging the technology gap for different age groups to prevent cognitive overload throughout the guest journey. Maintaining a balance between automated chatbots and human support allows

satisfaction levels to remain high while pursuing environmental goals. Future studies should adopt longitudinal designs or broader multi-site comparisons to validate these digital dynamics across different hospitality sectors. Expanding the inquiry to include artificial intelligence integration or digital literacy levels would provide a deeper look into how technology influences sustainable travel.

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Author Contributions

NPDW was responsible for the conceptualization of the study, developing the methodology, performing formal analysis, conducting the primary data collection, and drafting the original manuscript. DMSA and NGNSM contributed to the study design, provided critical manuscript revision and editing, offered overall supervision throughout the research process, and gave the final approval for the version to be published.

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