

Technological Innovation and Sustainability Strategy in the Hotel Industry in the Era of Tourism 5.0

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ABSTRACT

This study examines how sustainability initiatives in the hospitality industry are communicated to guests within the context of Tourism 5.0, where technological innovation and human-centric values are expected to coexist. Although hotels increasingly adopt environmentally sustainable technologies, limited attention has been given to how these initiatives are strategically communicated to influence guest perception and engagement. This research employs a qualitative multiple-case study approach, focusing on two hotels in Bali: Radisson Blu Bali Uluwatu and The Magani Hotel & Spa. Data were collected through semi-structured interviews with management-level informants, supported by document analysis, digital communication audits, and guest review triangulation. Drawing on sustainability communication and digital communication perspectives, the study analyzes how messages are framed, delivered, and interpreted across digital and interpersonal touchpoints. The findings reveal a communication paradox. Radisson Blu demonstrates strong technological implementation but relies on efficiency-driven messaging, resulting in limited guest awareness of sustainability values. In contrast, The Magani emphasizes interpersonal storytelling and community-based communication, generating stronger emotional engagement but lacking digital amplification. This study proposes a hybrid sustainability communication model integrating data-driven systems with narrative-based human interaction. The findings highlight the importance of message framing, channel integration, and audience engagement in enhancing sustainability communication within the hospitality industry.

Keywords: *sustainability communication, tourism 5.0, hotel communication strategy, digital storytelling, bali hospitality*

INTRODUCTION

The global hospitality industry is undergoing a significant transformation driven by increasing demands for environmental sustainability and the rapid integration of advanced technologies. In tourism-dependent destinations such as Bali, Indonesia,

where the sector contributes substantially to economic growth while simultaneously exerting pressure on natural resources, this transformation is particularly critical. Hotels are no longer evaluated solely based on service quality and operational efficiency, but also on their ability to adopt sustainable practices and communicate these efforts effectively to stakeholders, especially guests. This shift reflects the broader paradigm of Tourism 5.0, which emphasizes the integration of technological innovation with human-centric values, including transparency, personalization, and meaningful engagement.

Existing studies have explored the adoption of technological innovation and sustainability practices within the hospitality sector. Research on smart hospitality highlights the role of digital systems, artificial intelligence, and energy-efficient technologies in enhancing operational performance and environmental outcomes (Buhalis & Leung, 2018). At the same time, scholars have examined the role of communication strategies in influencing consumer behaviour, particularly through digital marketing and sustainability messaging (Hysa et al., 2021). These studies suggest that sustainability initiatives are most effective when supported by communication strategies that align with societal values and customer expectations. However, much of the existing literature tends to treat sustainability implementation and communication as separate domains, with limited integration between operational practices and guest-facing communication processes.

From a communication perspective, sustainability is not merely a set of operational practices but a socially constructed concept shaped through strategic messaging and interaction. Drawing on sustainability communication frameworks, organizations are expected to move beyond one-way information dissemination toward more dialogic and engaging communication approaches that foster trust and participation. Furthermore, theories of digital communication and audience engagement emphasize that the effectiveness of sustainability messaging depends not only on the content of the message but also on how it is framed, the channels through which it is delivered, and the extent to which it resonates with audience values and experiences. In the context of Tourism 5.0, where digital and interpersonal interactions increasingly intersect, the integration of these communication dimensions becomes essential.

Despite these developments, a significant gap remains in understanding how sustainability initiatives are communicated to guests in real-time hospitality settings. Many hotels invest in environmentally sustainable technologies such as energy-efficient systems, water recycling, and smart applications, yet fail to effectively translate these initiatives into meaningful messages that are visible and understandable to guests. As a result, sustainability efforts are often perceived as operational conveniences rather than value-driven practices. In addition, while digital platforms such as mobile applications, websites, and social media are widely used for marketing purposes, their potential as tools for sustainability communication within the guest experience remains underutilized. This disconnect between technological innovation and communication

practice limits the ability of hotels to build awareness, trust, and engagement around sustainability.

To address this gap, this study examines how sustainability initiatives are communicated within the guest experience in the context of Tourism 5.0. The research focuses on two contrasting hotel cases in Bali: Radisson Blu Bali Uluwatu, an international chain hotel characterized by advanced technological infrastructure, and The Magani Hotel & Spa, a locally managed property that emphasizes interpersonal interaction and community-based practices. These two cases provide a comparative lens to explore how differences in organizational structure, resource availability, and managerial approach influence sustainability communication strategies across digital and interpersonal channels.

This study proposes a communication-centered perspective that integrates three key dimensions: message framing, communication channels, and audience engagement. By examining how sustainability messages are constructed, delivered, and interpreted across different guest touchpoints, the research seeks to move beyond a purely operational understanding of sustainability toward a more comprehensive communication-based analysis. Such an approach is particularly relevant in Tourism 5.0, where technological systems and human interaction are expected to complement each other in shaping meaningful guest experiences.

Accordingly, the objective of this study is to analyze how hotels in Bali communicate sustainability initiatives through both digital and interpersonal channels, and to identify the challenges and opportunities in aligning technological innovation with effective communication strategies. Using a qualitative multiple-case study approach based on semi-structured interviews, document analysis, and digital communication audits, this research aims to contribute to the field of communication studies by highlighting the strategic role of communication in enhancing the visibility, credibility, and impact of sustainability practices in the hospitality industry.

LITERATURE REVIEW OR RESEARCH BACKGROUND

1. *Sustainability Communication in Hospitality*

Sustainability in the hospitality industry has undergone a fundamental conceptual evolution over the past two decades, transitioning from a predominantly operational concern centered on environmental compliance and resource efficiency toward a strategic communication issue in which the framing, delivery, and reception of sustainability messages are recognized as equally consequential as the practices themselves (Bohdanowicz, 2006; Font et al., 2021). Sustainability in the hospitality industry has evolved from a predominantly operational concern into a strategic communication issue. Earlier research primarily emphasized environmental practices such as energy efficiency, waste management, and resource conservation. However, more recent scholarship underscores the importance of how these initiatives are communicated to stakeholders, particularly guests. Sustainability communication can

therefore be understood as the process through which organizations articulate their environmental and social responsibility efforts in order to influence stakeholder awareness, perceptions, and behavioral responses.

Contemporary sustainability communication identifies several key principles that distinguish effective from ineffective sustainability messaging in hospitality contexts. Organizations are required to translate complex technical practices into messages that are accessible, relevant, and capable of fostering emotional engagement (Font et al., 2021). This development reflects a broader shift toward value-based communication, in which sustainability is positioned not only as an operational imperative but as an integral component of organizational identity and brand narrative.

Despite these advancements, significant challenges persist. The proliferation of greenwashing practices, coupled with increasing information saturation, tends to undermine the credibility of sustainability messaging. Consequently, guests often encounter difficulty in distinguishing between substantive environmental initiatives and symbolic promotional claims. This condition reinforces the necessity for transparency, authenticity, and clarity as foundational principles in the effective communication of sustainability.

2. Digital Communication and Tourism 5.0

The emergence of Tourism 5.0 signifies a paradigm shift in the tourism industry, characterized by the integration of advanced technologies with human-centered values to create more meaningful and personalized experiences. Within this framework, digital communication assumes a central role in shaping how information is produced, distributed, and experienced by guests. Recent studies demonstrate that digital platforms, including mobile applications, websites, and social media, have evolved beyond their traditional marketing functions to become integral components of the overall guest journey (Gretzel et al., 2020). These platforms facilitate real-time interaction, enable personalization, and support data-driven communication strategies, allowing organizations to tailor sustainability messages according to guest preferences and behavioral patterns.

From a communication standpoint, the effectiveness of digital channels is contingent upon their capacity to convey complex information in a manner that is both accessible and engaging. The incorporation of visual elements, interactive features, and narrative-based content has been shown to enhance message comprehension and retention. Nevertheless, despite the availability of such tools, many hospitality organizations continue to utilize digital platforms primarily for promotional purposes, thereby underutilizing their potential as vehicles for sustainability communication. This limitation becomes particularly significant in the context of Tourism 5.0, where the convergence of digital systems and human interaction necessitates the strategic integration of multiple communication channels to deliver coherent and meaningful messages.

3. Interpersonal Communication and Guest Engagement

Notwithstanding the increasing reliance on digital technologies, interpersonal communication remains a fundamental component of the hospitality experience. Direct interaction between staff and guests provides opportunities for immediate feedback, emotional connection, and personalized communication, all of which are essential for fostering trust and engagement.

Existing literature highlights the role of frontline employees as key “communication agents” who translate organizational values into tangible guest experiences (Baker & Magnini, 2016). Through verbal communication, storytelling, and service interactions, employees can contextualize sustainability practices in ways that resonate with guests’ values, expectations, and cultural backgrounds.

Interpersonal communication is particularly effective in conveying sustainability messages due to its dialogic nature, which allows for two-way interaction. Guests are able to seek clarification, express concerns, and receive tailored explanations, thereby enhancing both understanding and perceived credibility. However, the effectiveness of this communication approach is highly dependent on the level of staff training, communication competence, and organizational support. In the absence of adequate preparation, employees may encounter difficulties in translating complex sustainability initiatives into clear and engaging narratives.

4. Communication Theories in the Sustainability Context

To provide a comprehensive analytical framework, this study draws upon several key communication theories that explain how sustainability messages are constructed, transmitted, and interpreted.

a. Sustainability Communication Framework

The sustainability communication framework emphasizes the alignment between organizational practices and transparent, engaging messaging. Rather than relying solely on one-way information dissemination, this approach highlights the importance of dialogue, stakeholder engagement, and meaning construction in shaping perceptions of sustainability (Morsing & Schultz, 2006). Organizations are therefore encouraged to adopt participatory communication strategies that actively involve stakeholders in the sustainability process.

b. Dialogic Communication Theory

Dialogic Communication Theory (Kent & Taylor, 2002) posits that effective communication is grounded in mutual understanding and interactive exchange rather than unilateral message delivery. In the hospitality context, this implies that sustainability communication should facilitate guest participation and feedback, thereby fostering trust and long-term relational engagement.

c. Media Richness Theory

Media Richness Theory (Daft & Lengel, 1986) explains the varying capacities of communication channels to convey complex information. Rich media, such as face-to-face interaction, allow for immediate feedback, emotional nuance, and

contextual interpretation, making them particularly suitable for communicating multifaceted issues such as sustainability. In contrast, lean media, including static digital content, may limit interpretive depth if not carefully designed.

d. *Digital Engagement Theory*

Digital Engagement Theory (Brodie et al., 2013) focuses on the role of interactive and participatory communication in shaping user experiences. Engagement within digital environments is achieved through content that is relevant, interactive, and emotionally resonant. This perspective is especially pertinent in Tourism 5.0, where digital platforms function as critical touchpoints throughout the pre-visit, on-site, and post-visit stages of the guest journey.

5. *Research Gap and Conceptual Direction*

Despite the expanding body of literature on sustainability and digital transformation within the hospitality sector, there remains a limited integration between communication theory and operational practice. Existing research predominantly concentrates on technological adoption or environmental performance, with insufficient attention given to how sustainability initiatives are communicated across diverse guest touchpoints.

Moreover, there is a notable lack of comparative analysis between digital and interpersonal communication in the context of sustainability messaging. While digital platforms offer scalability, efficiency, and reach, interpersonal communication provides depth, emotional resonance, and contextual understanding. The interaction and potential complementarity between these two modes of communication remain underexplored, particularly within the framework of Tourism 5.0.

In response to this gap, the present study adopts a communication-centered approach that integrates three key analytical dimensions: message framing, communication channels, and audience engagement. By examining how sustainability communication is constructed, delivered, and interpreted within different hospitality contexts, this research seeks to provide a more comprehensive understanding of how technological innovation and human interaction can be strategically aligned to enhance the effectiveness of sustainability communication.

METHODOLOGY

This research employed a qualitative multiple-case study approach to explore how technological innovation is integrated with sustainability communication in hotel operations in the context of Tourism 5.0. Following Yin (2018), this approach is particularly suitable for addressing 'how' and 'why' questions within real-life contexts where the researcher has limited control over the phenomenon.

From a communication perspective, this study positions sustainability communication as the primary unit of analysis. Rather than focusing solely on operational sustainability practices, the research examines how sustainability messages are constructed, delivered, and interpreted across different guest touchpoints, including

digital communication (mobile applications, websites, and QR-based systems), interpersonal communication (staff–guest interactions), and symbolic communication (visual cues, signage, and environmental messaging).

1. Research Design and Unit of Analysis

The study adopts an interpretative paradigm, viewing communication as a socially constructed process shaped by context, actors, and cultural meanings. The unit of analysis is sustainability communication across hotel guest touchpoints, comprising three layers: digital communication channels (websites, mobile applications, QR codes, and in-room interfaces); interpersonal communication (staff–guest interaction and service encounters); and symbolic communication (visual cues, environmental signage, and campaign elements). This multi-layered unit of analysis enables a comprehensive examination of how sustainability messages are produced, mediated, and interpreted within the guest journey.

2. Case Selection

Two hotels in Bali were selected using purposive sampling to ensure analytical contrast: Radisson Blu Bali Uluwatu (international, technology-intensive) and The Magani Hotel & Spa (local, human-centred). The selection criteria included: demonstrated implementation of sustainability practices, presence of communication strategies directed at guests variation in technological adoption; and accessibility of key informants.

3. Data Collection

Data were collected through multiple sources to ensure triangulation and research credibility. Primary data were collected through semi-structured interviews with four key informants at the management and operational levels. Each interview lasted between 30–45 minutes, was audio-recorded with participant consent, and transcribed for analysis. Secondary data sources analysed included official hotel websites, sustainability-related materials and reports, social media and digital communication content, and guest-facing communication interfaces, including online guest review platforms (TripAdvisor and Google Reviews) for triangulation purposes.

Table 1: Informants Profile

Informant Code	Informant Role / Profile	Relevance in Study
Y1	Senior Management – Radisson Blu	Strategic sustainability & digital implementation
Y2	Marketing Communication – Radisson Blu	Guest communication & digital platforms

Y3	Operational Manager – Magani Hotel	Sustainability practices & guest interaction
Y4	Front Office / Guest Relations – Magani	Interpersonal communication with guests

Primary data were collected through semi-structured interviews with four key informants at the management and operational levels. Each interview lasted between 30–45 minutes, was audio-recorded with participant consent, and transcribed for analysis.

To strengthen triangulation, secondary data sources were also analysed, including official hotel websites, sustainability-related materials and reports, social media and digital communication content, and guest-facing communication interfaces. This multi-source data collection enhances the validity of the findings through methodological triangulation.

4. Data Analysis

Data analysis followed a thematic and interpretive coding process grounded in the principles of grounded theory (Strauss & Corbin, 1998), complemented by contemporary qualitative data analysis approaches (Saldaña, 2021; Miles et al., 2019). The analysis was conducted in several stages to ensure a systematic and transparent interpretation of the data. First, open coding was conducted to identify recurring patterns and meaningful units from the interview transcripts, documents, and digital communication materials. Second, axial coding was applied to organise and group these initial codes into broader categories and themes, including message framing, communication channels, and audience engagement. Finally, the identified themes were interpreted using pattern matching and explanation building techniques (Yin, 2018), connecting the findings with theoretical perspectives in communication and sustainability.

5. Trustworthiness

To ensure research rigour and credibility, this study applied the trustworthiness criteria proposed by Lincoln and Guba (1985), complemented by more recent qualitative research standards (Nowell et al., 2017; Creswell & Poth, 2018). Credibility was established through member checking, where key findings were shared with informants to confirm the accuracy of interpretations. Transferability was achieved by providing rich and detailed descriptions of the research context. Dependability was maintained through a clear audit trail documenting the research process, including data collection and analysis procedures. Confirmability was ensured through data triangulation by integrating multiple sources interviews, documents, digital communication materials, and guest review data to minimise researcher bias and enhance objectivity.

6. Limitations

This study acknowledges several limitations. First, the sample comprises only four informants across two hotels, which, while appropriate for an in-depth qualitative case study, limits the generalisability of the findings to broader hospitality contexts. Second, the study was conducted within a specific geographic and cultural setting (Bali, Indonesia), and the findings may reflect contextual factors not applicable to other destinations. Third, the absence of direct guest interviews means that guest perceptions are inferred primarily from management accounts and online review triangulation rather than first-hand data. Future research could address these limitations through larger multi-site studies incorporating direct guest data collection.

RESULTS AND DISCUSSION

This research explored how two hotels in Bali, Radisson Blu Bali Uluwatu and The Magani Hotel & Spa, integrate technological innovation and sustainability strategies within the context of Tourism 5.0. Through semi-structured interviews and supporting documentation, several core themes emerged energy efficiency and resource management, sustainability communication, employee training and organisational culture, community engagement, and digital readiness.

Aspect	Radisson Blu Bali Uluwatu	The Magani Hotel & Spa
Year Established	2018	2012
Number of rooms	125	108
Year of Sustainability Adaptation	2018 (from inception, aligned with Radisson Group's Responsible Business pillars)	2015 (incremental initiatives, starting with energy efficiency)
Year of Technology Adaptation	2018 (Stay App, mobile key, QR codes, sensor lighting, STP water recycling)	2020 (digital monitoring for utilities, virtual assistant on website)
Energy Management	Sensor-based lighting, STP for water recycling, smart room features	LED lighting, smart key card system, automated sprinklers
Digital Platforms	Stay App for services, mobile key access, QR codes for sustainability info	Virtual assistant on website, paperless TV-based promotions
Sustainability Communication	In-room digital displays, QR codes, social media, staff training and guest briefing	Check-in staff briefing, in-room signage, limited digital engagement
Employee Training	Structured training integrated into SOPs, sustainability-focused sessions	Weekly departmental training, SOP integration with sustainability practices
Community Engagement	Think People & Think Community programs (CSR, local sourcing)	Cleaning Blitz, local staff empowerment initiatives
Challenges	Communicating high-tech sustainability without diminishing comfort; need for continuous staff training	Limited digital tools for communication; guest awareness depends on staff initiative

Figure 1. Comparison of Sustainability Practices between Radisson Blu Bali Uluwatu and The Magani Hotel & Spa

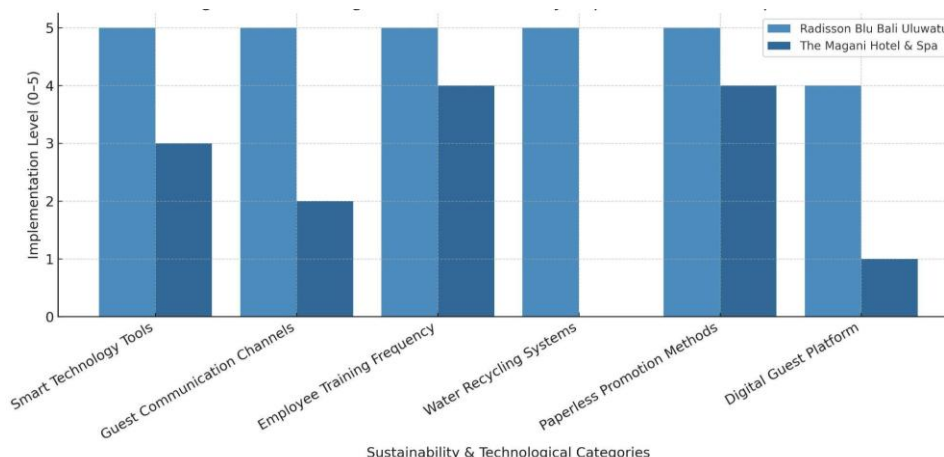


Figure 2. Technological and Sustainability Implementation Comparison

2. Energy Efficiency and Resource Management

Both hotels demonstrate commitment to sustainability through resource management supported by technology. Radisson Blu adopts a structured and technology-intensive approach, integrating advanced systems such as sensor-based lighting, predictive housekeeping, and water recycling. In contrast, The Magani applies a more incremental and cost-efficient approach, utilising solar-powered systems, automated controls, and resource-saving programmes. These findings highlight that while technological sophistication differs significantly between the two properties, operational sustainability alone does not determine how sustainability is perceived by guests. The manner in which these practices are communicated plays an equally important role in shaping guest awareness and valuation of sustainability efforts.

3. Sustainability Communication

The findings reveal clear differences in how sustainability initiatives are communicated to guests. Radisson Blu integrates sustainability communication across multiple digital touchpoints. However, its messaging remains largely technical and informational, leading guests to interpret these initiatives as convenience features rather than genuine sustainability efforts. In contrast, The Magani relies on interpersonal communication through staff interaction and storytelling, creating stronger emotional engagement and higher guest awareness. These results indicate that communication effectiveness is shaped more by message framing and delivery than by the number of communication channels used—a finding that has significant implications for how hotels invest in their communication infrastructure. This pattern aligns with Font et al.'s (2021) observation

that sustainability messaging is most effective when it moves beyond operational disclosure toward emotionally resonant, value-laden narratives. The tendency of Radisson Blu's guests to interpret sustainability features as conveniences rather than environmental commitments reflects what Font et al. (2021) describe as "greenhushing" the under-communication of substantive sustainability efforts and suggests that possessing digital infrastructure does not guarantee communicative effectiveness without deliberate narrative design.

4. Employee Training and Organisational Culture

Both hotels emphasise the importance of staff as frontline agents of sustainability communication. Radisson Blu applies structured training systems and performance indicators linked to sustainability outcomes. However, staff reported challenges in translating technical sustainability practices into guest-friendly communication. The Magani adopts a more informal and interaction-based approach, encouraging staff to communicate sustainability practices through storytelling. This finding suggests that organisational culture plays a critical role in shaping how sustainability messages are communicated and experienced by guests, irrespective of the level of technological infrastructure available. Specifically, while Radisson Blu's structured training equips staff with factual knowledge, it does not systematically develop the communicative competence needed to translate that knowledge into engaging guest narratives. This gap between knowledge and storytelling ability represents a critical training deficit. The Magani's more organic, culture-embedded approach, while less scalable, produces stronger relational outcomes by drawing on staff members' personal connections to local sustainability values consistent with Baker and Magnini's (2016) argument that frontline employees function as key "communication agents" who humanise organisational values through direct interaction.

5. Community Engagement

Both hotels extend sustainability beyond internal operations through community engagement initiatives. Radisson Blu implements structured programmes aligned with corporate social responsibility frameworks, while The Magani emphasises community-based participation through locally embedded initiatives. These approaches reflect different models of sustainability engagement, corporate-driven programmes characterised by scale and formal accountability on one hand, and locally embedded practices characterised by cultural authenticity and relational depth on the other. Both models carry communication value, though they reach different audience segments and convey distinct sustainability narratives.

6. Digital Readiness and Online Communication

Digital readiness emerged as a key differentiator between the two hotels. Radisson Blu demonstrates strong digital integration through its Stay App and automated systems, but its communication style is largely technical and less engaging for general audiences. The Magani shows limited digital engagement, with sustainability communication primarily occurring through offline interactions. This creates a communication paradox: Radisson Blu possesses advanced digital tools but under-communicates sustainability in guest-friendly ways, while The Magani achieves stronger interpersonal engagement but lacks the digital scalability to reach guests before and after their stay. This paradox suggests that technological readiness alone does not guarantee communicative effectiveness, and that human-centred approaches, while impactful, require digital amplification to achieve broader reach. Applying Media Richness Theory (Daft & Lengel, 1986), this divergence can be explained by the mismatch between channel capacity and message complexity: Radisson Blu employs lean digital media to convey sustainability values a rich and nuanced topic resulting in shallow interpretation, while The Magani's face-to-face interactions provide the richness needed for deeper understanding but lack the scale to reach all guest segments. Bridging this gap requires not only the adoption of digital platforms, but the deliberate curation of narrative content that can approximate the depth of interpersonal communication within digital environments.

Discussion

1. Communication Perspective

From a communication perspective, the findings demonstrate that sustainability is not inherently meaningful to guests unless it is effectively communicated. This supports the argument of Kotler et al. (2021), who emphasise that modern communication must move beyond information delivery toward value-driven engagement. The findings show that sustainability initiatives, when presented as technical or operational information, tend to be interpreted as functional convenience rather than environmental responsibility. This highlights the importance of message framing in shaping how sustainability is understood and valued by guests. This finding resonates with Morsing and Schultz's (2006) stakeholder involvement strategy, which posits that organisations generate the most meaningful sustainability communication when they actively engage stakeholders rather than simply informing them. The contrast between the two hotels illustrates this continuum: Radisson Blu's predominantly informational approach positions guests as passive recipients, whereas The Magani's dialogic, story-based approach positions them as participants in a shared sustainability narrative — a

distinction that carries significant implications for message credibility and behavioural influence.

2. Technology-Driven Efficiency vs. Human-Centric Sustainability

Radisson Blu Bali Uluwatu illustrates how international hotel chains can lead in technological innovation and structured sustainability practices. Its implementation of smart systems reflects the concept of smart hospitality, where digital integration enhances operational efficiency. However, the findings reveal a communication gap: technological sophistication does not necessarily translate into guest awareness. Many sustainability initiatives are perceived as convenience features rather than value-driven practices. This supports previous research suggesting that operational efficiency alone is insufficient without effective communication (Buhalis & Leung, 2018). Sustainability must be communicated in ways that are accessible, meaningful, and emotionally engaging to guests. This indicates the presence of what can be described as a “visibility-efficiency paradox,” where increasing operational efficiency reduces the visibility of sustainability efforts because systems become automated, invisible, and cognitively unmarked by guests. This supports previous research suggesting that operational efficiency alone is insufficient without effective communication (Buhalis & Leung, 2018). Sustainability must be communicated in ways that are accessible, meaningful, and emotionally engaging to guests.

3. Intercultural Communication Perspective

These findings can also be interpreted through intercultural communication theory. According to Hall (1976), communication styles differ between high-context and low-context cultures. The Magani Hotel & Spa's reliance on storytelling and interpersonal interaction reflects a high-context communication approach, where meaning is conveyed through experience and social interaction. In contrast, Radisson Blu's structured, data-driven communication reflects a low-context approach, where information is delivered explicitly but may lack emotional resonance. This distinction helps explain variations in how sustainability messages are interpreted by international guests, particularly in a multicultural destination such as Bali. This divergence is particularly significant in Bali as a multicultural tourism destination, where guests interpret sustainability messages through different cultural decoding frameworks, meaning that communication effectiveness is highly contingent on cultural alignment. This distinction helps explain variations in how sustainability messages are interpreted by international guests, particularly in a multicultural destination such as Bali. This finding strongly supports Font et al. (2021), particularly the concept of greenhushing,

where organisations under-communicate meaningful sustainability efforts, leading to reduced visibility and stakeholder understanding.

4. Communication Gap in Digital and Interpersonal Channels

A critical finding of this study is the gap between digital and interpersonal communication approaches. Radisson Blu demonstrates strong digital capability but lacks emotional engagement, while The Magani excels in interpersonal communication but underutilises digital platforms. This dual gap highlights that effective sustainability communication requires both reach and depth. Digital communication enables scalability and consistency, while interpersonal communication fosters trust, clarity, and emotional connection. In the context of Tourism 5.0, where guest journeys increasingly begin in digital environments, the integration of these communication modes becomes essential. In Tourism 5.0 terms, this suggests that the industry is still in a transitional phase where technological integration has advanced faster than communicative integration, creating asymmetry between system capability and narrative coherence.

5. Guest Experience and the Tourism 5.0

The results show that Tourism 5.0 does not represent a one-size-fits-all model. Radisson Blu represents a technology-driven pathway, offering seamless app-based services, digital keys, and predictive housekeeping. Yet these innovations are undervalued by guests without transparent sustainability framing. The Magani, by contrast, exemplifies a human-centric pathway, generating satisfaction through staff personal approach, cultural authenticity, and community involvement. While comparatively low-tech, its practices resonate deeply with guests, demonstrating that emotional connection can sometimes outweigh technological sophistication. This finding supports Djevojić and Vitasović (2023), who observed that luxury hotels are more likely to pursue digital transformation, while smaller hotels differentiate through authenticity and cultural integration. However, the findings suggest that guest satisfaction is not solely determined by technological advancement or service efficiency, but by the degree of interpretive clarity guests can derive from sustainability practices during their stay. Conversely, low-tech but high-interaction environments may generate stronger perceived value due to higher emotional interpretability, reinforcing the idea that perceived sustainability is socially constructed rather than objectively observed.

6. Toward a Hybrid Model of Sustainability Communication

Based on these findings, this study proposes a hybrid sustainability communication model that integrates technological efficiency with human-centred storytelling. Importantly, this hybrid model should not be understood as a simple combination of channels, but as a reconfiguration of meaning production across the guest journey, where digital and interpersonal communication mutually reinforce rather than substitute each other. The model operates across three dimensions:

1. Message framing: Technical sustainability data should be translated into accessible, emotionally resonant narratives that guests can relate to, regardless of the communication channel used.
2. Channel integration: Hotels should combine digital reach (websites, apps, social media) with interpersonal depth (staff storytelling, guided interactions) to deliver coherent and layered sustainability messages.
3. Audience engagement: Communication strategies should be designed to invite guest participation, feedback, and co-creation of sustainability meaning, moving from one-way dissemination toward dialogic engagement.

From a communication perspective, this hybrid model reflects the integration of functional communication (information delivery) and symbolic communication (meaning-making), which is essential for shaping guest perception and behaviour. For Radisson Blu, this involves extending digital infrastructure to include narrative-based content. For The Magani, it requires amplifying strong interpersonal communication into digital platforms such as social media and online content management.

7. Implications for Bali's Hospitality Industry

These findings carry several important implications for different stakeholders. For hotel managers, investment should extend beyond smart systems to include staff training in digital literacy, intercultural communication, and sustainability storytelling. For policymakers, incentive frameworks should reward not only operational sustainability but also effective communication and community integration. For guests, greater transparency empowers environmentally conscious travellers to align their choices with sustainable values. For researchers, further inquiry is needed into the intersection of digital transformation and human communication in tourism contexts such as Bali, particularly through studies that incorporate direct guest data. Beyond these practical implications, the findings suggest a broader structural implication for Bali's hospitality ecosystem, sustainability competitiveness is increasingly shifting from "resource-based advantage" to "communication-based advantage." In other words, hotels are no longer

differentiated only by what they do, but by how meaningfully they can communicate what they do.

CONCLUSION

This study examined how two contrasting hotels in Bali communicate sustainability initiatives to guests within the framework of Tourism 5.0. Through a qualitative multiple-case study design, the research demonstrates that sustainability communication effectiveness is determined not only by the nature of environmental practices or the sophistication of digital infrastructure, but primarily by how sustainability messages are framed, delivered, and made meaningful across guest touchpoints.

The comparative analysis reveals a communication paradox: Radisson Blu Bali Uluwatu possesses advanced technological systems and structured sustainability programmes, yet fails to convert these into engaging guest-facing narratives. The Magani Hotel & Spa, by contrast, achieves stronger emotional resonance and guest awareness through interpersonal storytelling, despite limited digital reach. These contrasting trajectories suggest that neither technology-intensive nor human-centric approaches are sufficient in isolation.

In response, this study proposes a hybrid sustainability communication model that integrates digital reach with human-centred storytelling across three dimensions: message framing, channel integration, and audience engagement. This model contributes to the academic literature by bridging the gap between communication theory and hospitality practice, and by extending the Tourism 5.0 framework to include the communicative dimensions of sustainability.

The study has several limitations, including a small informant sample, a single geographic context, and the absence of direct guest data. Future research should address these limitations through larger comparative studies incorporating mixed methods and direct guest participation. Additionally, longitudinal approaches tracking how sustainability communication strategies evolve with changing technologies and guest expectations would provide valuable insights for both theory and practice.

BIODATA

Putu Bella Ayu Virdani is a Master's student in Global Business & Communication Management at LSPR, with experience in hotel marketing communications in Bali. Ageng Ratna Sari is also a student in the same programme, with a background in hospitality, focusing on marketing and business support. Both authors share an interest in sustainability communication and Tourism 5.0 in Bali.

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