

The Influence of Online Reviews and Hotel Digital Responsibility on ESG Practices and Sustainability Performance

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Abstract

Purpose: This study investigates how online guest reviews and hotel digital responsibility (HDR) influence environmental, social, and governance (ESG) practices and sustainability performance in the hospitality sector. We explore HDR as an industry-specific application of Corporate Digital Responsibility (CDR) framework.

Design/methodology/approach: We collected data from 196 Brazilian hotels through questionnaires and analyzed 212,147 TripAdvisor reviews, categorizing them into ESG attributes using a specialized dictionary. We tested hypothesized relationships using partial least squares structural equation modeling.

Findings: Hotel managers respond differently to ESG-related content in reviews. Positive social-related comments enhance HDR while negative governance-related comments diminish it. Environmental reviews show no significant impact on HDR development. Hotels demonstrating stronger HDR implement more robust environmental, social, and governance practices, which significantly improve overall sustainability performance.

Implications: This research provides practical methods for hotels to systematically analyze online reviews through an ESG lens and develop automated sentiment monitoring systems. The findings enable managers to prioritize social interactions and governance transparency while understanding why environmental initiatives may not resonate with guests. Theoretically, the study extends CDR theory by introducing HDR as a hospitality-specific framework that bridges digital stakeholder engagement with sustainable operations.

Originality/value: This study develops an innovative framework connecting online reviews to ESG performance in hospitality. It extends CDR theory by introducing HDR as a hospitality-specific application addressing ethical challenges from digital guest interactions. Our findings highlight how digital responsibility bridges guest expectations and sustainable hotel operations.

Keywords: Online reviews; hotel digital responsibility; ESG practices; sustainability performance; corporate digital responsibility; sentiment analysis; hospitality; Brazil

1. Introduction

Hotels are under growing pressure to adopt ESG principles while sustaining financial performance, as the industry's high resource use and reliance on human capital make ESG integration both vital and challenging (Back, 2024; Law et al., 2025). Guests increasingly expect hotels to demonstrate genuine commitment to sustainability, directly influencing brand image and booking decisions (Legendre et al., 2024; Li et al., 2025).

Digital platforms are fundamentally transforming sustainability engagement, creating both opportunities and challenges for hospitality organizations (Afaq et al., 2025). Online review platforms allow guests to share direct feedback on hotels' ESG efforts (Zheng et al., 2023). However, these platforms generate vast volumes of unstructured data that challenge hotels' ability to process information effectively and maintain ethical transparency (Lin et al., 2024; Park et al., 2024).

Corporate Digital Responsibility (CDR) addresses businesses' ethical obligations in managing digital interactions, data privacy, and online stakeholder engagement (Lin et al., 2024; Yang et al., 2025). Building on this framework, Hotel Digital Responsibility (HDR) emerges as a hospitality-specific application covering ethical digital engagement, guest data protection, and transparent sustainability communication (Elliott et al., 2021; Gössling, 2021; Li et al., 2021). HDR enables hotels to transform digital challenges into strategic advantages for ESG implementation. Research demonstrates that effective digital responsibility initiatives positively impact both external stakeholder relationships and internal employee well-being and advocacy (Lee et al., 2025).

Despite growing recognition of ESG importance in hospitality (Park et al., 2025), research provides limited evidence on how hotel managers systematically leverage online reviews to enhance ESG strategies (Back, 2024; Yu et al., 2025). Few studies examine how hotels assess ESG-related sentiments in online reviews or integrate guest feedback into sustainability planning (Rosa et al., 2025a). This gap prevents understanding of how digital responsibility capabilities facilitate practical ESG implementation and drive long-term sustainability performance.

This study addresses these limitations by examining how online reviews and HDR influence ESG practices and sustainability performance in hotels. We analyze data from 196 Brazilian hotels and 212,147 TripAdvisor reviews using structural equation modeling to test

these relationships. Our research advances hospitality management knowledge by demonstrating how hotels can systematically evaluate ESG content in social media and strengthen their digital responsibility capabilities.

This study contributes to the literature on the intersection of online reviews, HDR, and ESG in hotel management (Back, 2024; Li et al., 2025; Lobschat et al., 2021; Zhao et al., 2015). First, we develop an ESG dictionary tailored to hospitality contexts and employ sentiment analysis to analyze guest-generated sustainability content, moving beyond conventional analytical approaches. Second, we explore the intervening role of HDR on the guest expectations and ESG implementation association, showing how digital responsibility develops from managerial attention to ESG-related feedback while balancing guest satisfaction with sustainability commitments. Third, we demonstrate that HDR enhances hotel ESG practices and sustainability performance by addressing guests' sustainability concerns while reducing greenwashing risks. Finally, we provide insights into differential managerial responses to positive and negative sustainability-related reviews, offering practical guidance for hotels seeking to strengthen their ESG performance through strategic digital engagement. This approach helps hotels address sustainability challenges by balancing guest needs with long-term ESG responsibilities.

2. Background and Development of Hypotheses

2.1 Corporate Digital Responsibility and Hotel Digital Responsibility

2.1.1 Contextualizing Corporate Digital Responsibility

CDR addresses the ethical challenges introduced by digital transformation (Lee et al., 2025; Lobschat et al., 2021). (Elliott et al., 2021; Herden et al., 2021). Hotels increasingly create value through digital platforms, but misleading digital communication threatens stakeholder trust and engagement (Bernini et al., 2025). The adoption of artificial intelligence and automated systems in hospitality raises additional ethical considerations that require careful management (Law et al., 2025).

CDR shapes ethical business conduct across customers, investors, suppliers, and regulators (Carl and Hinz, 2024; Lobschat et al., 2021). Recent evidence shows that CDR initiatives also significantly affect employee well-being and advocacy behavior (Lee et al., 2025), suggesting that digital responsibility benefits extend beyond external stakeholder

relationships. Proactive stakeholder engagement in CDR initiatives strengthens corporate sustainability outcomes and competitive advantages (Vo Thai et al., 2024). Digital platforms empower guests by facilitating real-time information exchange and participation in data governance (Bernini et al., 2025; Zhao and Qiu, 2025).

Hospitality businesses face unique digital responsibility challenges in ESG domains (Yang et al., 2025). Online interactions between hotels and guests generate new transparency and accountability expectations (Gössling, 2021). Further research should clarify how social media affects guest behavior and shapes ESG strategies in hospitality contexts. However, the collection and analysis of guest-generated content raise important privacy, and personalization concerns that hotels must address ethically (Kang and Namkung, 2019).

We introduce Hotel Digital Responsibility (HDR) as a hotel's commitment to addressing guest expectations tied to digital transformation and sustainability. HDR functions as a strategic framework for responsible digital governance while increasing guest engagement through ethical digital practices. HDR promotes transparent, trustworthy hotel-guest relationships that reinforce sustainability goals and align hotels with ESG requirements.

Online reviews make misleading ESG practices nearly impossible for hotels, as customers effectively serve as auditors who expose poor behaviors on social media. Studies indicate that greenwashing occurs less frequently in hotels that receive online reviews, as guests act as public evaluators and influence behavior (Majeed and Kim, 2023; Yi et al., 2018). HDR outcomes include accessible digital solutions for ESG initiatives, sustainable digital practices that meet guest expectations, and strengthened commitment to responsible digital engagement.

HDR differs from traditional Corporate Social Responsibility approaches by specifically addressing ethical challenges arising from digital transformation in hospitality (Law et al., 2024; Lee et al., 2025). While CSR focuses on stakeholder management through conventional channels, HDR manages digital-specific challenges including guest-generated content, real-time feedback systems, and the risks of digital manipulation while maintaining alignment with broader sustainability objectives.

2.1.2 Positioning of Hotel Digital Responsibility

Hotel Digital Responsibility represents a theoretical advancement beyond traditional Corporate Social Responsibility (CSR) approaches and existing green electronic word-of-mouth (eWOM)

studies. This positioning requires careful examination of foundational literature to establish HDR's unique contribution to hospitality sustainability research.

Classical CSR research in hospitality focuses primarily on stakeholder management through conventional channels and direct community engagement (Kang and Namkung, 2019). Early foundational work by Manaktola and Jauhari (2007) demonstrates that environmentally conscious guests actively seek hotels with sustainable initiatives, establishing the importance of understanding consumer environmental attitudes in the lodging industry. This seminal study reveals that while consumers show positive attitudes toward green practices, their willingness to pay premiums and actual booking behavior remains complex and multifaceted.

Similarly, Kasim (2007) provides critical early evidence of drivers and barriers to corporate environmentalism in the hotel sector, identifying key organizational, economic, and regulatory factors that influence environmental adoption. These foundational studies establish the groundwork for understanding sustainability in hospitality but focus on conventional CSR frameworks without addressing digital transformation challenges.

The emergence of sentiment analysis research provides methodological foundations for analyzing online opinions and user-generated content. Pang and Lee (2008) establish comprehensive theoretical and methodological frameworks for opinion mining and sentiment analysis, while Liu (2012) extends these foundations to practical applications across various domains, including hospitality contexts. However, these classical approaches treat sentiment analysis as a technical tool rather than a strategic framework for sustainability management.

Recent developments in hospitality technology research reveal the transformative impact of digital innovations on service delivery and guest experiences (Law et al., 2024; Pillai and Sivathanu, 2020). Law et al. (2025) emphasize the critical importance of ethical artificial intelligence principles in hospitality operations, highlighting the need for responsible technology adoption. Lee et al. (2025) demonstrate that corporate digital responsibility significantly affects employee well-being and advocacy behavior, extending CDR implications beyond guest interactions to internal stakeholder relationships.

These technological advances create new ethical challenges that traditional CSR frameworks cannot adequately address (Afaq et al., 2025). The intersection of sustainability and technology in hospitality requires specialized approaches that account for digital-specific risks

including data privacy concerns, algorithmic bias, and the potential for "digital washing" where organizations make misleading claims about their digital responsibility efforts.

HDR emerges as a distinct theoretical framework addressing three critical gaps in existing literature. First, unlike traditional CSR approaches that focus on conventional stakeholder engagement, HDR specifically manages ethical challenges arising from digital guest interactions and user-generated content analysis. Second, while green eWOM studies examine how a hotel's environmental and non-environmental messages influence consumer behavior (D'Acunto et al., 2025), HDR encompasses proactive management strategies for engaging stakeholders (especially guests) with the hotel's digital and ethical commitment across ESG dimensions. Third, HDR provides a systematic approach to leveraging digital technologies for sustainability improvement while maintaining transparency and accountability in ways that conventional CSR frameworks cannot achieve.

The theoretical distinction becomes particularly important when considering the dynamic, real-time nature of digital guest feedback. Traditional CSR relies on periodic stakeholder consultations and formal reporting mechanisms (Ettinger et al., 2018) to express the ethical principles of organizations (D'Acunto et al., 2025), whereas CDR represents a commitment to ethical practices in digital processes (Shin and Jang, 2025). HDR, in turn, incorporates the various forms of stakeholder communication in the digital age and enables continuous monitoring and prompt response to stakeholder concerns through digital platforms. This fundamental difference positions HDR as both an extension of and departure from conventional CSR approaches, specifically designed for the digital-first hospitality environment where guest-generated content creates unprecedented transparency and accountability expectations.

2.2 Online Reviews and Hotel Digital Responsibility

Online reviews serve as vital tools for guests to share feedback and for hotel managers to gain actionable insights (Ahani et al., 2019). These reviews function as informal communication channels that help managers understand customer expectations and improve services. Reviews enhance hotel reputation, guest satisfaction, and loyalty (Anagnostopoulou et al., 2020; Park et al., 2020).

Research increasingly focuses on extracting meaningful insights from large review volumes. Studies classify reviews into categories such as sleep quality, location, service, and

cleanliness (Ahani et al., 2019), internal factors like hotel services and external factors like local attractions (Roy, 2023), and managerial response strategies (Zhang et al., 2024). However, limited research explores how ESG-related reviews influence managerial actions.

HDR enables managers to engage with customers digitally while managing ESG concerns ethically and transparently (Herden et al., 2021; Lobschat et al., 2021). Hotels adopting HDR build trust and stronger customer engagement on ESG topics (Wynn and Jones, 2023). Positive ESG reviews drive greater commitment, accountability, and transparency regarding environmental, social, and governance practices. As guests grow more sensitive to sustainability issues, their positive reviews often influence other consumers' decisions, affecting hotels' bookings and performance. Hotels attempt to maintain or enhance their environmental and social responsibilities to retain competitiveness. Based on this reasoning, we propose:

H1(a,b,c): Positive environmental(a), social(b) and governance(c) related comments in online reviews positively influence hotel digital responsibility.

Research shows that negative reviews often appear more persuasive and influential, significantly impacting consumer decisions (Zhang et al., 2024). Negative online reviews reduce booking intentions more than positive reviews increase them (Zhao et al., 2015). For example, Lee et al. (2017) found that negative reviews were perceived as more impactful than positive ones when potential customers read online hotel reviews to inform their future stays. Building on this, Lee et al. (2019) showed that a customer's expression of negative experience is negatively associated with overall customer satisfaction. Further extending these findings, Lai et al. (2021) demonstrated that negative sentiment scores exert a stronger downward influence on online hotel ratings than positive sentiment scores do in raising them. Yang (2022) added nuance to this pattern by showing that the relationship between temporal contiguity and both review extremity and depth is more pronounced in negative experiences, suggesting that negative reviews tend to be more detailed and temporally anchored. Although the reliability of negative reviews is sometimes debated, empirical evidence suggests that such reviews are often perceived as diagnostic, trustworthy, and credible (Lee et al., 2017; Zhao et al., 2015), ultimately shaping consumer intentions and decision-making. We contend that, persistent negative ESG-related reviews may reveal inadequate managerial commitment to environmental, social, and

governance concerns. When negative reviews increase and bookings decline, hotels may face financial constraints that undermine sustainability initiatives. Prior evidence shows that, hotel managers allocate disproportionate attention to negative reviews over positive ones, reflecting a managerial bias (Xie et al., 2014). Consequently, managers may reduce digital transparency, diminishing HDR (Bernini et al., 2025; Wirtz et al., 2023). We therefore propose:

H2 (a,b,c): Negative environmental(a), social(b) and governance(c) related comments in online reviews negatively influence hotel digital responsibility.

2.3 Hotel Digital Responsibility and ESG Practices

HDR embodies a hotel's commitment to using digital technologies ethically to advance social, economic, and ecological objectives (Elliott et al., 2021; Lobschat et al., 2021). Hotels embracing HDR align digital initiatives with customer expectations and leverage online reviews to improve operations and service quality (Yang et al., 2025). HDR principles minimize social, economic, and environmental risks while promoting ethical guest interactions.

HDR guides managers in converting online reviews into actionable sustainability strategies (Lobschat et al., 2021), ensuring that data collection and analysis are representative and responsibly applied (Cheng and Zhang, 2023). Managers analyze social media reviews to implement ESG actions and avoid greenwashing (Knight et al., 2022). Online reviews provide ongoing assessment of sustainability measures, enabling continuous improvement (van der Merwe and Al Achkar, 2022).

Studies underscore HDR's importance in enhancing digital performance (Cheng and Zhang, 2023), firm performance (Vo Thai et al., 2024), and customer digital trust (Yang et al., 2025). Hotels adopting HDR may struggle to balance sustainability aims with profitability pressures and digital efficiency demands. Strong HDR approaches promote high standards for guest feedback (Wang and Huang, 2025) and encourage adoption of global ESG solutions. Hotels can generate competitive advantages while shaping a more sustainable future by leveraging digital technologies responsibly (Vo Thai et al., 2024). Accordingly, we propose:

H3(a,b,c): Hotel Digital Responsibility positively influences (a) environmental practices, (b) social practices, and (c) governance practices.

2.4 ESG Practices and Sustainability Performance

ESG practices function as key management mechanisms in hospitality due to the sector's substantial resource usage and environmental impacts (Legendre et al., 2024; Park et al., 2025; Ye et al., 2025). Implementing ESG initiatives often involves reconciling customer satisfaction with sustainability goals, creating tensions between profitability and environmental responsibility. Research highlights the growing influence of customers and social media on ESG adoption (Liu et al., 2022; Shin et al., 2025) and underscores ESG's importance for optimizing operational performance, enhancing brand reputation, and promoting sustainability (Yu et al., 2025).

ESG practices enable hotel managers to address environmental impacts like energy efficiency and waste management, social challenges including employee well-being and gender equity, and governance objectives such as transparency and fair compensation (Li et al., 2021). Environmental practices improve operational efficiency and profitability by reducing negative externalities. Social practices emphasize employee engagement and enhanced guest experience, strengthening brand image (Ding and Tseng, 2023; Li et al., 2021). Governance practices reinforce transparency, credibility, and trust, advancing long-term sustainability (Yu et al., 2025).

These strategies collectively bolster hotel sustainability performance (Aldowaish et al., 2022; Xie et al., 2019) and create tangible gains in environmental protection, social inclusion, and governance standards (Ding and Tseng, 2023; Yu et al., 2025). Integrating ESG principles promotes sustainable destination management, elevates guest experiences, and increases guests' likelihood of returning (Shin et al., 2025). ESG practices help managers address operational challenges, strengthen teams, and align strategic efforts, ultimately improving hotel performance. We therefore propose:

H4(a,b,c): Environmental practices (a), social practices (b), and governance practices (c) positively influence the sustainability performance of hotels.

3. Methods

3.1 Participants and Procedures

We used data from Cadastur, the official platform of the Brazilian Ministry of Tourism, to identify hospitality firms for this study. Since registration on Cadastur is mandatory for all Brazilian hotels, it provides a comprehensive dataset. We included only hotels that had TripAdvisor reviews, selecting TripAdvisor because it provides extensive user-generated content across 49 markets (TripAdvisor, 2024). From Cadastur's listings, 863 hotels had both registration and TripAdvisor reviews, forming our target population.

We collected data in two stages. First, we developed a questionnaire based on established literature, translating items from English into Portuguese with support from bilingual experts to ensure linguistic accuracy and conceptual equivalence. We hired a specialized research firm to administer the survey following Dillman et al. (2014) tailored design method. Before beginning the survey, participants were informed of the study's objectives and their right to decline participation or withdraw at any point. We assert that the study complied with relevant ethical guidelines for research involving human perception. Participant anonymity and confidentiality were strictly maintained, ensuring compliance with Brazil's General Data Protection Law. After two and three weeks, hotel managers were sent reminders to participate in the survey.

We conducted the survey between November and December 2023 and obtained 196 valid responses (22% response rate). This response rate matches comparable hospitality studies (Monteiro et al., 2022; Rosa et al., 2025b). Table 1 summarizes the demographic profiles of hotel managers and hotel characteristics. Most respondents held undergraduate degrees (66%) with up to five years of tenure (63%). The sample was balanced in age and gender. Most hotels operated for up to 10 years (40%) with fewer than 50 rooms (52%) and 50 or fewer staff members (64%). Independent hotels comprised 63% of the sample.

INSERT TABLE 1

In the second stage, we gathered online reviews from TripAdvisor using data scraping techniques. We combined text mining and machine learning to handle large volumes of unstructured data while identifying patterns and sentiments in ESG-related content (Lee, 2022).

We initially obtained 213,006 reviews linked to the 196 hotels, removed 859 duplicates, leaving 212,147 valid reviews.

We developed a Python script to manage and interpret the large volume of TripAdvisor reviews. We applied our ESG dictionary, designed specifically for the Brazilian hospitality sector by drawing on existing literature and adapting terms to reflect local nuances. The dictionary identified mentions of environmental, social, and governance topics within textual data. After identifying relevant ESG terms, we utilized VADER sentiment analysis (Hutto and Gilbert, 2014) to assign each review positive or negative sentiment scores.

We built the ESG dictionary based on Baier et al. (2020), Raman et al. (2020), Yoon et al. (2023), and Mansouri and Momtaz (2022). After systematic reading, translation, analysis, and adaptation, we compiled 710 terms, removed 37 duplicates and excluded 26 irrelevant terms, resulting in 647 final terms categorized under environmental, social, and governance dimensions (See Appendix 2 under supplementary materials).

We chose a dictionary-based approach over transformer-based models for greater interpretability and transparency, allowing researchers to understand and validate each classification decision (Hutto and Gilbert, 2014). Dictionary methods often outperform general-purpose models in specialized contexts like hospitality where industry-specific language dominates (Liu, 2012). Dictionary approaches prove more suitable for multilingual contexts where transformer models may lack sufficient training data for accurate sentiment classification.

We first applied our ESG dictionary to identify and classify each review under the environmental, social, or governance dimensions. After determining the relevant ESG category, we used VADER to measure sentiment analysis, labeling each review as positive or negative. This two-stage approach produced six distinct constructs: positive environmental, negative environmental, positive social, negative social, positive governance, and negative governance.

The cross-sectional design limits our ability to establish definitive causal relationships between online reviews, HDR, and ESG outcomes. While our theoretical model suggests that reviews influence HDR development, which then drives ESG practices and performance, we cannot rule out reverse causality. Future longitudinal studies will strengthen causal inference by tracking these relationships over time.

3.2 Research Instruments and Data Analysis

We surveyed three principal constructs: HDR, ESG practices (environmental, social, and governance dimensions), and sustainability performance, along with relevant control variables. We measured HDR with three items adapted from Aldowaish et al. (2022) and Gerdt et al. (2019) to capture how hotels account for social media reviews. Managers rated the extent to which the hotel considers environmental, social, and governance issues mentioned in reviews on a 7-point Likert scale (1 = Never to 7 = Always).

We divided ESG practices into three categories adapted from Xie et al. (2019). Environmental dimension included eight items assessing initiatives aimed at reducing greenhouse gas emissions. Social dimension included seven items addressing employee training, health, and safety. Governance dimension encompassed six items, such as incorporation of independent advisors and inclusion of women in leadership. We used a 7-point Likert scale (1 = Never to 7 = Always) for each item.

We measured sustainability performance with 17 items adapted from Abaeian et al. (2019) and Grosbois (2012). Managers indicated whether their hotels had increased use of recycled materials or reduced energy consumption by adopting efficient equipment. Responses were recorded using a 7-point Likert scale (1 = Never to 7 = Always).

We incorporated manager and hotel characteristics as control variables. For managers, we controlled age and gender, following evidence linking demographic factors to decision-making quality and sustainability outcomes (Rosa et al., 2025b). For hotel-level controls, we considered number of employees, since larger hotels face stricter regulatory scrutiny (Monteiro et al., 2022), and chain affiliation, as standardized management systems may influence sustainability performance. We also accounted for establishment type and whether it is in a tourism region, reflecting heightened sustainability pressures competitive destinations face (Rosa et al., 2023).

We examined 212,147 TripAdvisor reviews, categorizing them as environmental, social, or governance-based using word counts from our ESG dictionary. We applied VADER to determine whether each ESG mention carried positive or negative tone, yielding six variables: positive environmental, negative environmental, positive social, negative social, positive governance, and negative governance. We calculated each variable by dividing the number of categorized reviews by the hotel's total review count.

We employed strategies to mitigate potential biases. Using secondary data from TripAdvisor helped reduce common method bias. Variance inflation factors (VIF) remained below 4.00, indicating minimal risk. Factor analysis including all items showed extracted variance of 0.33, remaining below the 0.50 threshold. To assess non-response bias, we compared early and late respondents and found a statistically significant difference only in governance practices.

We used Partial Least Squares Structural Equation Modeling (PLS-SEM), a method well-established in hospitality research (Monteiro et al., 2022; Rosa et al., 2025a). PLS-SEM suits exploratory studies and handles non-normal distributions, reflective constructs, and smaller sample sizes without strict distributional assumptions (Hair et al., 2022). With 196 valid responses, PLS-SEM was optimal for testing our hypothesized relationships.

4. Results

4.1 Preliminary Analysis

Descriptive statistics appear in Appendix 3 (see Appendix 3 under supplementary materials). We assessed the measurement model's reliability and validity, with factor loadings for all items provided in Appendix 1 (see Appendix 1 under supplementary materials). Table 2 shows that composite reliability (CR) and Cronbach's alpha values exceeded 0.7 (Hair et al., 2022), with all constructs scoring 0.8 or higher. Average variance extracted (AVE) surpasses 0.5, confirming strong convergent validity.

INSERT TABLE 2

We examined variance inflation factor (VIF) scores to check multicollinearity and common method bias; all values remained below 5, indicating no concerns. We verified discriminant validity using both the Fornell-Larcker criterion and the heterotrait-monotrait ratio (HTMT). Table 3 shows that diagonal Fornell-Larcker values exceed correlations between latent variables, and all HTMT values remain below 0.85. These outcomes confirm that each construct is distinct and the measurement model meets essential validity and reliability requirements.

INSERT TABLE 3

4.2 Hypothesis Testing

We used bootstrapping with 5,000 resamples to evaluate the proposed hypotheses, as summarized in Table 4. Contrary to H1a, which predicted that positive environmental-related comments would positively influence HDR, the effect was negative and non-significant ($\beta = -0.199$, $p > 0.05$). H1b, proposing that positive social-related comments enhance HDR, was supported ($\beta = 0.283$, $p < 0.05$). The link between positive governance-related comments and HDR was negative and non-significant ($\beta = -0.163$, $p > 0.05$), indicating no support for H1c.

INSERT TABLE 4

H2a hypothesized that negative environmental-related comments would reduce HDR, but the relationship was positive and non-significant ($\beta = 0.034$, $p > 0.05$). H2b predicted that negative social-related comments would negatively affect HDR, but the effect was negative and non-significant ($\beta = -0.047$, $p > 0.05$). H2c, which predicted that negative governance-related comments would adversely impact HDR, was confirmed ($\beta = -0.257$, $p < 0.05$).

H3(a, b, c) tested whether HDR positively influences ESG practices and found strong support: HDR significantly and positively affects environmental ($\beta = 0.529$, $p < 0.01$), social ($\beta = 0.469$, $p < 0.01$), and governance ($\beta = 0.199$, $p < 0.01$) practices. H4(a, b, c) examined how ESG practices relate to hotel sustainability performance. Environmental practices improve sustainability performance ($\beta = 0.389$, $p < 0.01$), social practices have the strongest positive effect ($\beta = 0.454$, $p < 0.01$), and governance practices also exert a positive influence ($\beta = 0.182$, $p < 0.01$).

Age emerged as a significant control variable, indicating that older managers demonstrated greater sensitivity to ESG concerns and sustainability performance. Environmental knowledge and skills accumulate over time, especially when viewed from a long-term perspective (Ortiz-de-Mandojana et al., 2019). Other controls (gender, hotel size, chain affiliation, hotel type, and location) showed no direct relationships with sustainability performance.

The non-significant relationship between positive environmental reviews and HDR reflects several theoretical and practical considerations that distinguish environmental practices from social and governance dimensions in hospitality contexts. Environmental initiatives in hotels often occur in "back-of-house" operations where guests have limited visibility or technical expertise to evaluate effectiveness (Kasim, 2007; Manaktola and Jauhari, 2007). Unlike service quality issues that guests directly experience during their stay, complex environmental systems such as energy management, water treatment, and waste processing remain largely invisible to typical hotel guests.

Furthermore, guests often lack the specialized knowledge required to assess the effectiveness of environmental technologies and practices. While guests can readily evaluate social interactions with staff or observe governance-related service failures, environmental performance requires technical understanding that most consumers do not possess. This creates a fundamental information asymmetry where positive environmental comments may reflect general impressions rather than substantive evaluation of actual environmental performance.

The experiential nature of hospitality services further explains this pattern. Guests primarily focus on tangible, immediate aspects of their stay that directly affect their comfort and satisfaction. Environmental practices, while crucial for long-term sustainability, rarely translate into immediate guest experience improvements that would generate meaningful positive feedback. This finding aligns with classical hospitality research showing that guests often undervalue environmental initiatives due to their intangible nature and limited direct impact on service quality perceptions.

5. Discussion and Conclusions

5.1 Conclusions

Our findings reveal distinct patterns in how different ESG review dimensions influence Hotel Digital Responsibility development. Social-related reviews demonstrate the strongest positive impact on HDR, while governance-related criticisms significantly undermine digital responsibility initiatives. This differential response pattern highlights the experiential nature of hospitality services, where managers respond most strongly to guest feedback about directly observable interactions and service quality (Wirtz et al., 2023; Yang et al., 2025). Environmental reviews fail to significantly influence HDR development, reflecting the invisible nature of many

“back-of-house” environmental practices that guests cannot easily evaluate (Kasim, 2007; Manaktola and Jauhari, 2007).

HDR serves as the critical bridge connecting online guest feedback with concrete sustainability actions across environmental, social, and governance dimensions. Hotels with stronger digital responsibility capabilities consistently implement more robust ESG practices, creating a systematic pathway from stakeholder engagement to operational sustainability improvements (Cheng and Zhang, 2023). This mediation effect underscores the strategic importance of developing digital responsibility frameworks that effectively translate guest concerns into actionable sustainability initiatives (van der Merwe and Al Achkar, 2022).

HDR represents a fundamental shift toward transparent, accountable, and responsive sustainability governance (Bernini et al., 2025; Wirtz et al., 2023). The strong relationship between HDR and all three ESG dimensions, combined with their collective impact on sustainability performance, demonstrates that digital responsibility creates measurable value for hospitality organizations (Ding and Tseng, 2023; Yu et al., 2025). Hotels that embrace HDR principles position themselves to leverage user-generated content for continuous sustainability improvement, while those that neglect digital responsibility miss critical opportunities to enhance their environmental and social impact through stakeholder engagement (Knight et al., 2022; Li et al., 2021).

5.2 Theoretical Implications

This study makes several significant theoretical contributions that advance hospitality and digital responsibility literature. First, we extend Corporate Digital Responsibility theory by proposing Hotel Digital Responsibility as a sector-specific application that addresses unique challenges of hospitality digital transformation. Unlike previous CDR applications that focus primarily on data governance and technology ethics (Law et al., 2025; Lee et al., 2025), HDR encompasses dynamic interactions between guest-generated content and sustainability strategy development. This contribution responds to calls for industry-specific CDR frameworks (Carl and Hinz, 2024) and provides a foundation for future digital responsibility research in service industries.

Our theoretical development addresses the intersection of sustainability and technology that Afaq et al. (2025) identify as critical for contemporary hospitality management. HDR bridges the gap between digital innovation and sustainability implementation, offering a

framework that hospitality researchers and practitioners can use to navigate ethical challenges arising from technological transformation while maintaining commitment to environmental and social responsibility.

Second, we introduce a methodological innovation that combines text mining with ESG measurement, offering a replicable framework for analyzing user-generated content in sustainability research. This integration addresses the methodological gap in hospitality ESG studies that traditionally rely on self-reported measures or secondary data (Liu, 2012; Pang and Lee, 2008). Our ESG dictionary approach demonstrates how hospitality researchers can systematically analyze large volumes of unstructured guest feedback to derive actionable sustainability insights, extending beyond conventional sentiment analysis applications.

Third, our findings reveal complex, differential relationships between ESG dimensions and digital responsibility, challenging assumptions about uniform stakeholder responses to sustainability initiatives. The significant impact of social reviews and governance criticism on HDR, contrasted with non-significant environmental effects, suggests that digital responsibility develops through nuanced stakeholder interactions rather than broad sustainability awareness. This insight advances understanding of how different sustainability dimensions resonate with various stakeholder groups, contributing to more sophisticated models of stakeholder engagement in digital contexts.

This theoretical contribution extends recent work by Lee et al. (2025) on corporate digital responsibility's impact on employee well-being by demonstrating how digital responsibility frameworks can systematically incorporate external stakeholder feedback into organizational sustainability strategies. Our findings provide empirical evidence for differential impacts of ESG dimensions on digital responsibility development, offering a more nuanced understanding of how organizations can leverage digital technologies for sustainability improvement.

5.3 Practical Implications

Hotel managers can implement several concrete strategies to enhance their digital responsibility and ESG performance. Hotels must develop automated ESG sentiment monitoring systems using specialized dictionaries to track guest sentiment across environmental, social, and governance dimensions, enabling proactive responses to sustainability concerns before they escalate (Wirtz et al., 2023). However, the implementation of such automated systems must follow ethical AI

principles (Law et al., 2025) to ensure fairness, transparency, and accountability in sustainability management. This leverages growing user-generated content to create actionable insights for sustainability management.

Hotels need integrated management systems that connect online guest feedback with ESG strategy development, ensuring that digital responsibility initiatives align with broader sustainability objectives. This digital-ESG integration framework builds upon corporate digital responsibility principles (Lobschat et al., 2021) and addresses the growing need for transparent, data-driven sustainability approaches. Hotels must prioritize transparent communication about ESG initiatives through digital channels, using HDR principles to build stakeholder trust and reduce greenwashing risks (Knight et al., 2022).

Our findings demonstrate the strong impact of social reviews on HDR, indicating that hotels should invest significantly in employee training and engagement programs that enhance guest-staff interactions and demonstrate social responsibility commitments. This recommendation aligns with research showing that social practices exert the strongest positive effect on sustainability performance (Ding and Tseng, 2023; Li et al., 2021). Hotels should also implement governance transparency initiatives that address the negative impact of governance-related criticisms through enhanced communication about leadership decisions and organizational accountability measures.

5.4 Limitations and Future Research

This study acknowledges several limitations that future research should address. The cross-sectional design limits our ability to establish definitive causal relationships between online reviews, HDR, and ESG outcomes. While our theoretical model suggests that reviews influence HDR development, which then drives ESG practices and performance, we cannot rule out reverse causality. Hotels with stronger existing ESG commitments may prove more likely to develop HDR capabilities, creating a virtuous cycle. Future longitudinal studies will strengthen causal inference by tracking these relationships over time.

The dictionary-based approach, while transparent and interpretable, may miss linguistic nuances that advanced natural language processing models could capture. Our methodology provides reliable results but cannot detect sarcasm, irony, or context-specific meanings that transformer-based models might identify (Liu, 2012; Pang and Lee, 2008). Future research

should explore hybrid approaches that combine dictionary-based transparency with deep learning sophistication, particularly for cross-cultural contexts where language subtleties prove more complex.

The 22% response rate may introduce self-selection bias, potentially over-representing sustainability-oriented managers. Future studies should investigate non-response bias more thoroughly. Additionally, the Brazilian context may have unique cultural and institutional characteristics that limit generalizability to other markets. Cross-cultural research examining how HDR concepts translate across different regulatory environments, cultural values, and technological infrastructures will enhance theoretical understanding and practical applicability.

Future research opportunities include investigating temporal dynamics of HDR development, examining how different stakeholder groups shape digital responsibility evolution, and exploring integration of HDR with emerging technologies such as artificial intelligence and blockchain. The role of managerial characteristics in HDR adoption, effectiveness of different digital responsibility training programs, and long-term sustainability performance impacts of HDR implementation represent promising research directions that will advance both theoretical knowledge and practical applications in hospitality sustainability management.

References

- Abaeian, V., Khong, K.W., Kyid Yeoh, K. and McCabe, S. (2019), "Motivations of undertaking CSR initiatives by independent hotels: a holistic approach", *International Journal of Contemporary Hospitality Management*, Vol. 31 No. 6, pp. 2468-2487.
- Afaq, A., Gaur, L., Singh, G., Erben, M. and Ferraris, A. (2025), "A critical insight into the intersection of sustainability and technology", *International Journal of Contemporary Hospitality Management*, Vol. 37 No. 1, pp. 239-259.
- Ahani, A., Nilashi, M., Yadegaridehkordi, E., Sanzogni, L., Tarik, A.R., Knox, K., Samad, S. and Ibrahim, O. (2019), "Revealing customers' satisfaction and preferences through online review analysis: The case of Canary Islands hotels", *Journal of Retailing and Consumer Services*, Vol. 51, pp. 331-343.
- Aldowaish, A., Kokuryo, J., Almazyad, O. and Goi, H.C. (2022), "Environmental, Social, and Governance Integration into the Business Model: Literature Review and Research Agenda", *Sustainability*, Vol. 14 No. 5, pp. 2959.
- Anagnostopoulou, S.C., Buhalis, D., Kountouri, I.L., Manousakis, E.G. and Tsekrekos, A.E. (2020), "The impact of online reputation on hotel profitability", *International Journal of Contemporary Hospitality Management*, Vol. 32 No. 1, pp. 20-39.

- Back, K.-J. (2024), "ESG for the hospitality and tourism research: Essential demanded research area for all", *Tourism Management*, Vol. 105, pp. 104954.
- Baier, P., Berninger, M. and Kiesel, F. (2020), "Environmental, social and governance reporting in annual reports: A textual analysis", *Financial Markets, Institutions & Instruments*, Vol. 29 No. 3, pp. 93-118.
- Bernini, F., Ferretti, P., Gonnella, C. and La Rosa, F. (2025), "Measuring machinewashing under the corporate digital responsibility theory: A proposal for a methodological path", *Business Ethics, the Environment & Responsibility*, Vol. 34 No. 2, pp. 328-346.
- Carl, K.V. and Hinz, O. (2024), "What we already know about corporate digital responsibility in IS research: A review and conceptualization of potential CDR activities", *Electronic Markets*, Vol. 34, pp.1-30.
- Cheng, C. and Zhang, M. (2023), "Conceptualizing corporate digital responsibility: A digital technology development perspective", *Sustainability*, Vol. 15 No. 3, pp. 2319.
- D'Acunto, D., Filieri, R. and Okumus, F. (2025). "The Gen Z attitude-behavior gap in sustainability-framed eWOM: A generational cohort theory perspective", *International Journal of Hospitality Management*, Vol. 129, pp. 104194.
- Dillman, D.A., Smyth, J.D. and Cristian, L.M. (2014), "Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method", 4th ed. Wiley, New York.
- Ding, X. and Tseng, C. J. (2023). "Relationship between ESG strategies and financial performance of hotel industry in China: An empirical study", *Nurture*, Vol. 17 No. 3, pp. 439-454.
- Elliott, K., Price, R., Shaw, P., Spiliotopoulos, T., Ng, M., Coopamootoo, K. and van Moorsel, A. (2021), "Towards an Equitable Digital Society: Artificial Intelligence (AI) and Corporate Digital Responsibility (CDR)", *Society*, Vol. 58, pp. 179–188.
- Ettinger, A., Grabner-Kräuter, S. and Terlutter, R. (2018), "Online CSR communication in the hotel industry: Evidence from small hotels", *International Journal of Hospitality Management*, Vol. 68, pp. 94-104.
- Gerdts, S.-O., Wagner, E. and Schewe, G. (2019), "The relationship between sustainability and customer satisfaction in hospitality: An explorative investigation using eWOM as a data source", *Tourism Management*, Vol. 74, pp. 155-172.
- Gössling, S. (2021), "Tourism, technology and ICT: a critical review of affordances and concessions", *Journal of Sustainable Tourism*, Vol. 29 No. 5, pp. 733-750.
- Grosbois, D. (2012), "Corporate social responsibility reporting by the global hotel industry: Commitment, initiatives and performance", *International Journal of Hospitality Management*, Vol. 31 No. 3, pp. 896-905.
- Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2022), "A primer on partial least squares structural equation modeling (PLS-SEM)", (3rd ed.). Thousand Oaks, CA: Sage.
- Herden, C.J., Alliu, E., Cakici, A. et al. (2021), "Corporate Digital Responsibility", *Sustainability Management Forum*, Vol. 29, pp. 13–29.

- Hutto, C. and Gilbert, E. (2014), "VADER: A Parsimonious Rule-Based Model for Sentiment Analysis of Social Media Text", *Proceedings of the International AAAI Conference on Web and Social Media*, Vol. 8 No. 1, pp. 216-225.
- Kang, J.W. and Namkung, Y. (2019), "The role of personalization on continuance intention in food service mobile apps: A privacy calculus perspective", *International Journal of Contemporary Hospitality Management*, Vol. 31 No. 2, pp. 734-752.
- Kasim, A. (2007), "Corporate Environmentalism in the Hotel Sector: Evidence of Drivers and Barriers in Penang, Malaysia", *Journal of Sustainable Tourism*, Vol. 15 No. 6, pp. 680-699.
- Knight, H., Haddoud, M.Y. and Megicks, P. (2022), "Determinants of corporate sustainability message sharing on social media: A configuration approach", *Business Strategy and the Environment*, Vol. 31 No. 2, pp. 633-647.
- Lai, X., Wang, F. and Wang, X. (2021), "Asymmetric relationship between customer sentiment and online hotel ratings: the moderating effects of review characteristics", *International Journal of Contemporary Hospitality Management*, Vol. 33 No. 6, pp. 2137-2156.
- Law, R., Lin, K.J., Ye, H. and Fong, D.K.C. (2024), "Artificial intelligence research in hospitality: a state-of-the-art review and future directions", *International Journal of Contemporary Hospitality Management*, Vol. 36 No. 6, pp. 2049-2068.
- Law, R., Ye, H. and Lei, S.S.I. (2025), "Ethical artificial intelligence (AI): principles and practices", *International Journal of Contemporary Hospitality Management*, Vol. 37 No. 1, pp. 279-295.
- Lee, M. (2022), "Evolution of hospitality and tourism technology research from Journal of Hospitality and Tourism Technology: a computer-assisted qualitative data analysis", *Journal of Hospitality and Tourism Technology*, Vol. 13 No. 1, pp. 62-84.
- Lee, M., Jeong, M. and Lee, J. (2017), "Roles of negative emotions in customers' perceived helpfulness of hotel reviews on a user-generated review website: A text mining approach", *International Journal of Contemporary Hospitality Management*, Vol. 29 No. 2, pp. 762-783.
- Lee, M., Lee, S.(A). and Koh, Y. (2019), "Multisensory experience for enhancing hotel guest experience: Empirical evidence from big data analytics", *International Journal of Contemporary Hospitality Management*, Vol. 31 No. 11, pp. 4313-4337.
- Lee, S.A., Shin, H.H., Lee, M. and Jeong, M. (2025), "Feelings matter in the digital age: the role of corporate digital responsibility on employee well-being and advocacy behavior", *International Journal of Contemporary Hospitality Management*, Vol. 37 No. 7, pp. 2327-2348.
- Legendre, T.S., Ding, A. and Back, K-J. (2024), "A bibliometric analysis of the hospitality and tourism environmental, social, and governance (ESG) literature", *Journal of Hospitality and Tourism Management*, Vol. 58, pp. 309-321.
- Li, T-T., Wang, K., Sueyoshi, T. and Wang, D.D. (2021), "ESG: Research Progress and Future Prospects", *Sustainability*, Vol. 13, pp. 11663.

- Li, Z., Stamolampros, P. and Zhao, X. (2025), "ESG practices through the lens of employees in hospitality: Insights from employee-generated data", *International Journal of Hospitality Management*, Vol. 124, pp. 103992.
- Lin, K.J., Chen, S., Zhang, K., Li, X., Ye, H. and Law, R. (2024), "Technology evaluation: a systematic review and implications for ethical technology management in tourism and hospitality", *Asia Pacific Journal of Tourism Research*, Vol. 30 No. 2, pp. 194–210.
- Liu, B. (2012), "Sentiment analysis and opinion mining", Springer Nature.
- Liu, J., Yu, Y., Mehraliyev, F., Hu, S. and Chen, J. (2022), "What affects the online ratings of restaurant consumers: a research perspective on text-mining big data analysis", *International Journal of Contemporary Hospitality Management*, Vol. 34 No. 10, pp. 3607-3633.
- Lobschat, L., Mueller, B., Eggers, F., Brandimarte, L., Diefenbach, S., Kroschke, M. and Wirtz, J. (2021), "Corporate digital responsibility", *Journal of Business Research*, Vol. 122, pp. 875-888.
- Majeed, S. and Kim, W.G. (2023), "Greenwashing in the hotel industry: A scoping review and future research agenda", *International Journal of Contemporary Hospitality Management*, Vol. 35 No.1, pp. 214–240.
- Manaktola, K. and Jauhari, V. (2007), "Exploring consumer attitude and behaviour towards green practices in the lodging industry in India", *International Journal of Contemporary Hospitality Management*, 19 No. 5, pp. 364–377.
- Mansouri, S. and Momtaz, P.P. (2022), "Financing sustainable entrepreneurship: ESG measurement, valuation, and performance", *Journal of Business Venturing*, Vol. 37 No. 6, pp. 106258.
- Monteiro, J., Malagueño, R., Lunkes, R.J. and Santos, E.A. (2022), "The effectiveness of value-and calculation-based management controls in hotel", *International Journal of Hospitality Management*, Vol. 102, pp. 103156.
- Ortiz-de-Mandojana, N., Bansal, P. and Aragón-Correa, J.A. (2019), "Older and wiser: How CEOs' time perspective influences long-term investments in environmentally responsible technologies", *British Journal of Management*, Vol. 30 No. 1, pp. 134–150.
- Pang, B. and Lee, L. (2008), "Opinion Mining and Sentiment Analysis", *Foundations and Trends® in Information Retrieval*, Vol. 2 No. 1–2, pp. 1–135.
- Park, E., Kang, J., Choi, D. and Han, J. (2020), "Understanding customers' hotel revisiting behaviour: a sentiment analysis of online feedback reviews", *Current Issues in Tourism*, Vol. 23 No. 5, pp. 605–611.
- Park, Y-N., Hahn, S.H., Lee, C-K., Kim, J. and Back, K-J. (2024), "Developing an integrated resort's (IR) environmental, social, and corporate governance (ESG) measurement scale", *International Journal of Hospitality Management*, Vol. 123, pp. 103924.
- Park, Y-N., Shin, M. and Back, K-J. (2025), "Effect of message concreteness and self-relevance on willingness to engage in ESG goals: The mediating effect of temporal proximity focus", *Journal of Hospitality and Tourism Management*, ahead-of-print, pp. 1-10.

- Pillai, R. and Sivathanu, B. (2020), "Adoption of AI-based chatbots for hospitality and tourism", *International Journal of Contemporary Hospitality Management*, Vol. 32 No. 10, pp. 3199-3226.
- Raman, N., Bang, G. and Nourbakhsh, A. (2020), "Mapping ESG Trends by Distant Supervision of Neural Language Models", *Machine Learning and Knowledge Extraction*, Vol. 2 No. 4, pp. 453-468.
- Rosa, F.S., Lunkes, R.J. and Costa, G.D. (2023), "Green innovation ecosystem and water performance in the food service industry: The effects of environmental management controls and digitalization", *Business Strategy and the Environment*, Vol. 32 No. 8, pp. 5459-5476.
- Rosa, F.S., Lunkes, R.J., Codesso, M., Mendes, A.C.A. and Costa, G.D. (2025a), "Effects of green innovation ecosystem coopetition, environmental management practices and digital innovation on carbon footprint reduction", *International Journal of Contemporary Hospitality Management*, Vol. 37 No. 3, pp. 722-739.
- Rosa, F.S., Lunkes, R.J., Schäfer, J.D. and Codesso, M.M. (2025b), "Digital innovation for food waste reduction in hotels: The complementary effect of digital capabilities and innovation ecosystem coopetition", *Journal of Sustainable Tourism*, ahead-of-print, pp. 1–15.
- Roy, G. (2023), "Travelers' online review on hotel performance—Analyzing facts with the Theory of Lodging and sentiment analysis", *International Journal of Hospitality Management*, Vol. 111, pp. 103459.
- Shin, H., Kim, H. and Kang, J. (2025), "Tourist ESG engagement behaviors: conceptualization, scale development, and nomological Network", *Journal of Sustainable Tourism*, ahead-of-print, pp. 1–31.
- Shin, H.W. and Jang, H. (2025), "Overcoming barriers of corporate digital responsibility in the hospitality and tourism industry: a social identity perspective", *International Journal of Contemporary Hospitality Management*, Vol. ahead-of-print No. ahead-of-print.
- Tripadvisor. (2024). About us. <https://tripadvisor.mediaroom.com/br-about-us>
- Van der Merwe, J. and Al Achkar, Z. (2022), "Data responsibility, corporate social responsibility, and corporate digital responsibility", *Data & Policy*, Vol. 12 No. 4, pp. e12.
- Vo Thai, H-C., Hue, T.H.H., Chen, P-F. and Tran, M-L. (2024), "Unraveling the influence of human capital and stakeholder engagement on corporate digital responsibility: Implications for firm performance in Southeast Asia enterprises", *Corporate Social Responsibility and Environmental Management*, Vol. 31 No. 3, pp. 1934-1958.
- Wang, X-S. and Huang, H-D. (2025), "Structural Dimensions and Model Construction of Platform Enterprises' Digital Responsibility: A Grounded Study Based on Organizational Identity Theory", *Sustainability*, Vol. 17, pp. 405.
- Wirtz, J., Kunz, W.H., Hartley, N. and Tarbit, J. (2023), "Corporate Digital Responsibility in Service Firms and Their Ecosystems", *Journal of Service Research*, Vol. 26 No. 2, pp. 173-190.
- Wynn, M. and Jones, P. (2023), "Corporate Responsibility in the Digital Era", *Information*, Vol. 14 No. 6, pp. 324.

- Xie, J., Nozawa, W., Yagi, M., Fujii, H. and Managi, S. (2019), "Do environmental, social, and governance activities improve corporate financial performance?", *Business Strategy and the Environment*, Vol. 28 No. 2, pp. 286–300.
- Xie, K.L., Zhang, Z. and Zhang, M. (2014), "The business value of online consumer reviews and management response to hotel performance", *International Journal of Hospitality Management*, Vol. 43, pp. 1–12.
- Yang, P., Ji, C., Prentice, C., Sthapit, E. and Peng, Z. (2025), "Scale Development and Validation of Corporate Digital Responsibility—A Consumer Perspective", *International Journal of Consumer Studies*, Vol. 49 No. 1, pp. e70023.
- Yang, Y. (2022), "Impacts of temporal contiguity on creation and consumption of e-WOM in hotel context: A combined perspective of review rating and text", *International Journal of Hospitality Management*, Vol. 105, pp. 103256.
- Ye, J., Sotiriadis, M., Dimou, I., Shen, S. and Koufopoulos, D. (2025), "Suggesting a tourism industry-specific environmental, social and corporate governance (ESG) reporting framework", *Tourism Management*, Vol. 109, pp. 105156.
- Yi, S., Li, X. and Jai, T-M.C. (2018), "Hotel guests' perception of best green practices: a content analysis of online reviews", *Tourism and Hospitality Research*, Vol. 18 No. 2, pp. 191–202.
- Yoon, J., Han, S., Lee, Y. and Hwang, H. (2023), "Text mining analysis of ESG management reports in South Korea: Comparison with sustainable development goals", *SAGE Open*, Vol. 13 No. 4, pp. 1-17.
- Yu, J., Chiriko, A.Y., Kim, S(S)., Moon, H.G., Choi, H. and Han, H. (2025), "ESG management of hotel brands: A management strategy for benefits and performance", *International Journal of Hospitality Management*, Vol. 125, pp. 103998.
- Zhang, X., La, L., Huang, G.-Q.I. and Xie, H. (2024), "Strategies and conditions for crafting managerial responses to online reviews", *Tourism Management*, Vol. 103, pp. 104911.
- Zhao, X.(R)., Wang, L., Guo, X. and Law, R. (2015), "The influence of online reviews to online hotel booking intentions", *International Journal of Contemporary Hospitality Management*, Vol. 27 No. 6, pp. 1343-1364.
- Zhao, Y. and Qiu, J. (2025), "Decentralized governance in action: A governance framework of digital responsibility in startups", *Journal of Responsible Technology*, Vol. 21, pp. 100107.
- Zheng, X., Huang, J., Wu, J., Sun, S. and Wang, S. (2023), "Emerging trends in online reviews research in hospitality and tourism: A scientometric update (2000–2020)", *Tourism Management Perspectives*, Vol. 47, pp. 101105.

Table 1 Demographic profile of respondents and hotels

Respondent's Profile					
Education			Tenure (years)		
Technical/High School	54	28%	Up to 5	123	63%
Undergrad	129	66%	6 - 10	47	24%
Graduate/MBA	12	6%	11 - 20	20	10%
Master's	1	1%	Over 20	6	3%
Age (years)			Gender		
Up to 30	48	24%	Female	98	50%
31-40	56	29%			
41-50	64	33%			
Over 51	24	12%	Male	98	50%
Not provided	4	2%			
Hotel's Profile					
Hotel maturity (years)			Number of rooms		
Up to 10	78	40%	Up to 50	101	52%
11 - 20	63	32%	51 -100	24	12%
21 - 30	26	13%	101-200	48	24%
Over 30	29	15%	Over 200	23	12%
Number of Employees			Hotel belongs to a chain		
Up to 50	125	64%	Yes	73	37%
51 -100	40	20%			
101-200	24	12%			
Over 200	7	4%	No	123	63%

Source: Developed by authors.

Table 2 Construct reliability and validity

	Cronbach's alpha	CR (rho_c)	(AVE)	R²	R-square adjusted	Max VIF
OR environmental (+)	-	-	-	-	-	2.722
OR social (+)	-	-	-	-	-	3.457
OR governance (+)	-	-	-	-	-	1.798
OR environmental (-)	-	-	-	-	-	2.398
OR social (-)	-	-	-	-	-	2.977
OR governance (-)	-	-	-	-	-	1.220
HDR	0.926	0.953	0.871	0.111	0.082	1.000
Environmental practices	0.930	0.944	0.706	0.280	0.276	1.685
Social practices	0.878	0.911	0.675	0.220	0.216	1.508
Governance practices	0.960	0.974	0.926	0.040	0.035	1.822
Sustainability performance	0.943	0.951	0.661	0.733	0.720	-
Age	-	-	-	-	-	1.147
Gender	-	-	-	-	-	1.064
Size	-	-	-	-	-	1.472
Location	-	-	-	-	-	1.023
Affiliated to chain	-	-	-	-	-	1.573
Types of hosting	-	-	-	-	-	1.115

Note: Hotel digital responsibility (HDR), Online reviews (OR)

Source: Developed by authors.

Table 3 Discriminant validity

Fornell-Larcker	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.OR environmental (+)	1.000																
2.OR Social (+)	0.320	1.000															
3.OR Governance (+)	0.262	0.607	1.000														
4.OR Environmental (-)	0.475	-0.119	-0.067	1.000													
5.OR Social (-)	-0.071	0.636	0.502	0,075	1.000												
6.OR Governance (-)	0.023	-0.021	-0.136	0,343	0.044	1.000											
7.HDR	-0.137	0.092	-0.034	-0,174	0.057	-0.235	0.933										
8.Environmental practices	-0.284	0.032	-0.092	-0,256	0.125	-0.307	0.529	0.840									
9.Social practices	-0.178	-0.019	-0.033	-0,158	0.065	-0.451	0.469	0.516	0.821								
10.Governance practices	-0.372	-0.171	-0.188	-0,264	-0.001	-0.217	0.199	0.491	0.393	0.962							
11.Sustainability performance	-0.297	-0.035	-0.047	-0,246	0.076	-0.375	0.564	0.734	0.705	0.542	0.813						
12.Age	-0.085	-0.056	0.077	-0,118	-0.003	0.013	0.176	0.148	-0.112	0.002	0.172	1.000					
13.Gender	0.075	0.061	0.066	0,009	0.009	0.016	-0.058	-0.048	-0.006	0.042	-0.078	-0.201	1.000				
14.Size	-0.423	-0.108	-0.048	-0,232	0.183	-0.226	0.171	0.263	0.280	0.459	0.295	0.044	-0.010	1.000			
15.Location	-0.056	0.032	0.110	-0,041	0.074	-0.091	0.034	0.051	0.047	0.051	0.103	-0.003	0.075	-0.014	1.000		
16.Affiliated to chain	-0.370	-0.193	-0.144	-0,179	0.077	-0.231	0.122	0.333	0.281	0.523	0.344	-0.015	-0.053	0.467	0,035	1.000	
17.Types of hosting	0.204	0.519	0.422	-0,042	0.387	-0.047	-0.067	-0.152	-0.102	-0.185	-0.155	-0.123	0.072	0.033	0,077	-0.172	1.000
HTMT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.OR environmental (+)																	
2.OR Social (+)	0.320																
3.OR Governance (+)	0.262	0.607															
4.OR Environmental (-)	0.475	0.119	0.067														
5.OR Social (-)	0.071	0.636	0.502	0.075													
6.OR Governance (-)	0.023	0.021	0.136	0.343	0.044												
7.HDR	0.141	0.097	0.035	0.181	0.060	0.244											
8.Environmental practices	0.298	0.048	0.104	0.267	0.126	0.308	0.560										
9.Social practices	0.191	0.030	0.072	0.158	0.097	0.462	0.491	0.536									
10.Governance practices	0.381	0.176	0.192	0.271	0.016	0.222	0.209	0.521	0.433								
11.Sustainability performance	0.306	0.105	0.081	0.251	0.078	0.385	0.603	0.765	0.750	0.565							
12.Age	0.085	0.056	0.077	0.118	0.003	0.013	0.184	0.153	0.140	0.045	0.178						
13.Gender	0.075	0.061	0.066	0.009	0.009	0.016	0.060	0.063	0.017	0.046	0.080	0.201					
14.Size	0.423	0.108	0.048	0.232	0.183	0.226	0.179	0.272	0.299	0.469	0.304	0.044	0.010				
15.Location	0.056	0.032	0.110	0.041	0.074	0.091	0.048	0.056	0.055	0.052	0.106	0.003	0.075	0.014			
16.Affiliated to chain	0.370	0.193	0.144	0.179	0.077	0.231	0.126	0.339	0.301	0.535	0.354	0.015	0.053	0.467	0.035		
17.Types of hosting	0.204	0.519	0.422	0.042	0.387	0.047	0.070	0.163	0.116	0.188	0.159	0.123	0.072	0.033	0.077	0.172	-

Note: Hotel digital responsibility (HDR), Online reviews (OR)

Source: Developed by authors.

Table 4 Hypothesis testing

Relationships	β	T-value	P-values	Confidence Intervals	
				2.5%	97.5%
Direct Effect					
OR environmental (+) → HDR	-0.199	1.265	0.206	-0.552	0.068
OR Social (+)→ HDR	0.283	2.129	0.033**	0.023	0.548
OR Governance (+)→ HDR	-0.163	1.295	0.195	-0.366	0.123
OR Environmental (-)→ HDR	0.034	0.277	0.781	-0.174	0.309
OR Social (-)→ HDR	-0.047	0.315	0.753	-0.387	0.191
OR Governance (-)→ HDR	-0.257	2.319	0.020**	-0.494	-0.063
HDR → Environmental practices	0.529	8.444	0.000***	0.401	0.646
HDR → Social practices	0.469	6.581	0.000***	0.338	0.615
HDR → Governance practices	0.199	3.114	0.002***	0.074	0.324
Environmental practices → Sustainability performance	0.389	7.136	0.000***	0.290	0.501
Social practices → Sustainability performance	0.454	6.118	0.000***	0.296	0.586
Governance practices → Sustainability performance	0.182	3.748	0.000***	0.087	0.277
Control Variables					
Age → Sustainability performance	0.159	3.900	0.000***	0.079	0.239
Gender → Sustainability performance	-0.073	0.938	0.348	-0.226	0.078
Size → Sustainability performance	-0.026	0.473	0.636	-0.125	0.083
Location → Sustainability performance	0.055	1.385	0.166	-0.025	0.129
Affiliated to chain → Sustainability performance	0.006	0.067	0.947	-0.182	0.201
Types of hosting → Sustainability performance	0.003	0.081	0.936	-0.076	0.077

Notes: *** $p < 0.01$; ** $p < 0.05$. Hotel digital responsibility (HDR), Online reviews (OR)

Source: Developed by authors.