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RESEARCH ARTICLE

Corporate Digital Responsibility and Environmental Outcomes in Services: Mediating Effects of ESG Performance and Green Reputation, and the Moderating Influence of Electronic Word of Mouth

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ABSTRACT

This study examines how corporate digital responsibility (CDR) influences environmental outcomes in the service sector, focusing on the roles of environmental, social, and governance (ESG) performance and green reputation as mediating factors. It also tests whether electronic word of mouth (e-WOM) moderates the relationship between ESG performance and environmental outcomes. Data were collected from 233 employees across 65 service firms and analyzed using structural equation modeling and bootstrapping techniques. The findings show that CDR contributes to environmental performance both directly and indirectly through enhanced ESG practices. Green reputation further reinforces the connection between CDR and ESG performance, while e-WOM strengthens the effect of ESG performance on environmental outcomes. Together, these mechanisms illustrate how responsible digital practices, when supported by organizational credibility and employee engagement, can improve sustainability performance. The study offers an integrated framework linking CDR with environmental outcomes and provides practical insights for managers seeking to align digital initiatives with sustainability goals.

1 | Introduction

Digital technologies such as blockchain and artificial intelligence (AI) are accelerating the digital transformation (DT) of businesses by offering more secure, efficient, and transparent systems (Asokan et al. 2022; Rodrigues et al. 2023). Their adoption often entails significant changes in workflows and alters the way service firms interact with customers and stakeholders (Scuotto et al. 2017). As these technologies are increasingly integrated into strategic decision-making, they also introduce a new layer of ethical responsibility, particularly in cases where digital systems independently support or execute decisions. Ensuring that such systems reflect moral and social norms requires ongoing oversight (Lobschat et al. 2021). These technological advances also enhance firms' ability to gather, interpret, and disclose information related to environmental and governance performance, thereby fostering greater transparency and enabling external stakeholders to more effectively evaluate firms' environmental commitments (Chen and Hao 2022). As DT expands across the service sector, firms are compelled to

consider their broader responsibilities to society, the economy, and the environment (Cardinali and Giovanni 2022; Jones and Comfort 2021; Wade 2020).

In service-oriented industries, creating and maintaining environments that are both safe and appealing is essential for ensuring operational continuity and long-term competitiveness. Growing attention to environmental quality has been evident since the launch of Agenda 21 and the institutionalization of formal environmental management systems in the 1990s (Chan and Hsu 2016). Despite ongoing technological advances, many service sectors, including hospitality, retail, and transport, remain highly resource-dependent, with substantial levels of energy use, water consumption, and waste generation (Ricaurte and Jagarajan 2023). These environmental pressures increasingly compel firms in these domains to implement well-structured and accountable strategies for sustainability.

Within this landscape, corporate digital responsibility (CDR) refers to a firm's strategic orientation toward managing the ethical, environmental, and governance dimensions of its digital activities. It emphasizes the importance of ensuring that digital technologies are deployed in ways that are environmentally responsible, socially accountable, and aligned with corporate responsibility principles (Herden et al. 2021; Mueller 2022; Trier et al. 2023). One of the key mechanisms through which CDR is expected to influence environmental practices is environmental, social, and governance (ESG) performance, which serves as a comprehensive indicator of how firms translate responsibility into action (Lu et al. 2024; Sun et al. 2024).

While scholarly interest research in ESG issues has expanded in recent years, empirical studies that focus specifically on service industries remain relatively scarce (Aksoy et al. 2022; Wu et al. 2025). Much of the earlier work concentrated on corporate social responsibility (CSR) or examined ESG components in isolation, offering limited insight into their integrated effects (Back 2024). The role of CDR in shaping environmental outcomes within service-based firms remains particularly underexplored. This gap highlights the need for a more holistic perspective that considers how digital responsibility is embedded within both internal organizational processes and external stakeholder relationships in service contexts.

To advance this line of inquiry, the present study investigates the following central research question: *How does CDR influence environmental outcomes in the service sector, and through which organizational mechanisms and external stakeholder dynamics does this influence occur?* Drawing on the technology–organization–environment (TOE) framework, the analysis explores the contribution of CDR practices to improved environmental performance among service firms. The inquiry examines both the direct impact of responsible digital conduct and its indirect effects mediated through internal governance structures and external perception mechanisms. By disentangling these interconnected pathways, the research contributes to a more detailed understanding of how ethical digital practices become embedded in service-oriented organizational systems.

The remainder of the study proceeds as follows. The next section reviews the relevant literature and sets out the conceptual framework and hypotheses. Section 3 outlines the research design, data collection process, and measurement model. Section 4 presents the empirical findings, followed by a discussion of the key results. The final section concludes with implications, limitations, and directions for future research.

2 | Theoretical Background and Hypotheses

2.1 | Theoretical Background

The TOE framework, introduced by Tornatzky and Fleischer (1990), provides a structured foundation for analyzing how CDR is formed, adopted, and institutionalized within service-oriented firms. This framework integrates technological capabilities, organizational conditions, and external environmental influences to explain how service-oriented firms embed CDR into their operations. Its application is particularly relevant in service settings, where intangible outputs, immediate service delivery, and the integration of digital tools into human-centered processes introduce complex operational and ethical challenges. These characteristics heighten the visibility of digital conduct and place added pressure on firms to align technological adoption with both internal capabilities and external expectations.

The technological component refers to the availability and usability of digital systems, including analytics platforms, environmental monitoring tools, and energy-efficient technologies. These tools support the collection, interpretation, and communication of data related to environmental and ethical performance. The organizational component encompasses leadership commitment, governance structures, cultural orientation, and resource allocation that together determine how effectively CDR practices are embedded into daily operations. The environmental component involves external forces such as government regulations, industry standards, consumer expectations, and activist pressures, all of which influence how firms align their digital strategies with broader societal and ecological goals.

Although the TOE framework serves as the primary lens for this analysis, supplementary theoretical perspectives are incorporated to enhance the explanatory depth of the model. Stakeholder theory (Du et al. 2010; Freeman 1984; Greenwood 2007; Morsing and Schultz 2006) helps illuminate how firms respond to the evolving expectations of their key stakeholders, particularly in service industries where trust and transparency are central to competitive advantage. Signaling theory (Spence 1973; Connelly et al. 2010) provides insight into how firms communicate their ethical commitments through observable practices such as responsible data management or the use of environmentally low-impact technologies. These complementary perspectives offer additional clarity regarding how CDR is interpreted by external audiences and embedded within organizational systems.

Prior research has employed the TOE framework extensively in the fields of information systems and DT due to its flexibility across different institutional contexts (Oliveira and Martins 2011; Zhu et al. 2006). Its applicability to service industries lies in its capacity to account for intangible inputs,

context-sensitive governance structures, and stakeholder-facing processes that define digital engagement. For instance, Li et al. (2023) applied the framework to explore the relationship between digital capabilities and environmental performance in the context of green supply chain development. Similarly, Chen et al. (2024) found that DT in Chinese media firms is significantly shaped by the interplay between internal governance capacities and external institutional mandates, reinforcing the TOE framework's explanatory power in digitally evolving service contexts.

2.2 | Key Constructs and Conceptual Foundations

Guided by the TOE framework, this subsection lays the conceptual groundwork necessary for theorizing the relationships examined in this study. It critically explores the core constructs including CDR, ESG performance, green reputation, e-WOM, and environmental outcomes by situating them within the context of digitally enabled sustainability practices in the service sector. This focused discussion not only clarifies the theoretical significance of each construct but also establishes their interconnections, thereby setting the stage for the subsequent development of research hypotheses.

2.2.1 | CDR

CDR represents the collective set of organizational values, norms, and strategic commitments that guide how digital technologies and data are governed in socially responsible ways (Lobschat et al. 2021). It reflects an ethical and proactive stance toward managing the societal and environmental implications of DT. The moral dimensions of digital responsibility have long been acknowledged. For instance, Mason et al. (1986) emphasized the imperative of using information technologies in ways that preserve human dignity. In contemporary contexts, CDR encompasses a broad array of practices, including safeguarding data privacy, mitigating algorithmic bias, promoting digital inclusivity, and minimizing the ecological footprint of digital operations. As digitalization increasingly permeates the service sector, embedding CDR into core organizational strategies has become vital for maintaining legitimacy, fostering trust, and ensuring long-term stakeholder engagement (Vo Thai et al. 2024).

2.2.2 | ESG Performance

ESG performance reflects the extent to which a company adopts and implements practices that contribute to sustainable development beyond financial returns. In service industries, environmental initiatives often focus on carbon emissions reduction, energy efficiency, and waste minimization, whereas social performance is demonstrated through initiatives related to employee well-being, community engagement, and customer satisfaction. Governance performance includes leadership accountability, ethical conduct, and transparency in decision-making (Back 2024). ESG frameworks provide a structured approach for companies to measure and report sustainability efforts, thereby aligning operational goals with stakeholder expectations. ESG performance, therefore, serves as a crucial mechanism through which CDR translates into tangible environmental outcomes.

2.2.3 | Green Reputation

Corporate reputation, an intangible yet strategically vital asset, is shaped by stakeholder perceptions of a firm's actions and values (Turban and Cable 2003). Among its dimensions, green reputation pertains specifically to the organization's environmental responsibility and its demonstrated commitment to ecological sustainability (Shin and Ki 2019). Firms that engage proactively in environmentally responsible behavior often cultivate a green reputation, which not only reinforces customer and investor trust but also creates competitive advantages in increasingly eco-conscious markets (Rivera et al. 2017). A strong green reputation contributes to stakeholder legitimacy and helps amplify the effectiveness of ESG strategies by signaling alignment between internal sustainability practices and external expectations (Kumar et al. 2019).

2.2.4 | Electronic Word-of-Mouth (e-WOM)

WOM is a key consumer behavior that captures the attention of managers, marketers, and researchers. Arndt (1967) defines WOM as exchanging information about a product, service, or company through direct interpersonal communication between individuals (Souki et al. 2024). e-WOM enables individuals to share and access information about products, services, brands, and experiences online, whether from friends, acquaintances, colleagues, or strangers (Ratchford et al. 2001). Hennig-Thurau et al. (2004) define e-WOM as any positive or negative feedback shared by potential, current, or former customers regarding products, services, or companies made accessible to a broad audience and organizations via the Internet. Unlike traditional WOM, e-WOM is documented and written, enabling information to be shared with a wide audience of consumers and stakeholders without the risk of distortion (Sun et al. 2006). In the context of this study, e-WOM serves as a moderator that shapes how stakeholders respond to firms' ESG-driven initiatives and, by extension, how such perceptions affect environmental outcomes.

2.2.5 | Environmental Outcomes

Environmental outcomes refer to the measurable results of an organization's efforts to reduce its ecological impact, preserve natural resources, and comply with environmental standards and regulations. These outcomes include reduced emissions, efficient resource utilization, and improved waste management practices (Paillé et al. 2014). As firms increasingly embrace the triple-bottom-line paradigm (Elkington 1998), environmental performance is no longer peripheral but central to corporate strategy. Companies that integrate environmental goals into their broader value creation activities not only demonstrate accountability to shareholders and regulators but also respond more effectively to societal expectations for sustainability (Zacher et al. 2023). Within

this study, environmental outcomes are conceptualized as the key dependent variable influenced by CDR and its associated mechanisms.

2.3 | Hypothesis Development

Based on the preceding theoretical foundations, this study formulates a set of hypotheses that examine the relationships among CDR, ESG performance, and environmental outcomes. The model also incorporates green reputation and ESG performance as mediating variables, alongside e-WOM as a moderating factor. This structure allows for a detailed assessment of the mechanisms and conditions under which CDR practices exert their influence. The following subsections outline the theoretical rationale behind each hypothesis.

2.3.1 | CDR and ESG Performance

Building on the TOE framework, CDR can enhance ESG performance by integrating advanced digital tools with effective governance and stakeholder-responsive practices. Digital systems such as data analytics, sensor-based monitoring, and resource optimization platforms generate reliable and auditable information on energy use, waste, and process efficiency, thereby strengthening transparency and reporting accuracy, which are central to ESG assessment (Ding et al. 2024). Ethical guidelines, governance routines, training, and accountability structures ensure that these tools are embedded into decision processes, improving compliance, disclosure quality, and social engagement (Wirtz et al. 2023). Regulatory pressures and stakeholder expectations further incentivize firms to institutionalize responsible digital practices and to demonstrate measurable performance improvements, turning digital responsibility into verifiable ESG outcomes (Tornatzky and Fleischer 1990). In this way, CDR operates as an integrated system that aligns technology, organizational capacity, and external conditions to elevate ESG performance.

H1. *CDR positively influences ESG performance.*

2.3.2 | Mediating Role of Green Reputation

Reputation plays a critical role in shaping firm performance. As Cabral (2012) argues, reputational assets influence how firms are evaluated by external stakeholders, particularly in contexts where information asymmetry is high. In this study, green reputation refers to how stakeholders perceive a firm's commitment to environmentally responsible and ethically guided digital practices. These perceptions influence trust, stakeholder engagement, and ESG-related evaluations.

Green reputation can serve as a mediating channel that links CDR to ESG performance. Drawing on signaling theory (Connelly et al. 2010; Spence 1973), reputational signals allow firms to convey credible environmental commitment and digital ethics to external audiences. When CDR practices, such as transparent data governance, low-impact technology use, and ethical AI deployment, are visible and consistent, they strengthen the firm's image as a responsible actor. This favorable reputation, in turn, improves ESG performance by reinforcing stakeholder support and validating internal initiatives.

Recent empirical studies lend support to this mechanism. Liu et al. (2023) find that stakeholder perceptions of environmental behavior significantly influence ESG ratings, while Darsono et al. (2024) show that reputation acts as a key evaluative lens for interpreting digital sustainability practices. Thus, green reputation functions as a strategic mediator that translates internal responsibility into external ESG gains.

H2. *Green reputation mediates the relationship between CDR and ESG performance.*

2.3.3 | CDR and Environmental Outcomes

CDR offers a structured approach to managing the ecological implications of DT, extending across the full life cycle of digital technologies from their development and implementation to operational use and disposal. Although digital tools can enhance sustainability efforts, recent research highlights potential rebound effects, such as increased energy consumption and data processing burdens, which may counteract intended environmental benefits (Lobschat et al. 2021).

When CDR is integrated into environmental management, firms are more likely to reduce inefficiencies and lower their digital footprint. Practices such as optimizing system architectures for energy efficiency, adopting data governance policies that minimize unnecessary processing, and ensuring proper end-of-life disposal for hardware help mitigate these risks (George et al. 2021; Wynn and Jones 2023). These actions are particularly impactful when supported by internal governance routines and shaped by external expectations, including regulatory guidance and stakeholder demands.

Rather than acting in isolation, the effectiveness of CDR in driving environmental improvements depends on the alignment of digital tools, organizational intent, and contextual pressures. This alignment enables firms to pursue measurable environmental outcomes that go beyond compliance or reputational concerns, positioning CDR as a direct contributor to ecological performance.

H3. *CDR positively influences environmental outcomes.*

2.3.4 | Mediating Role of ESG Performance

The integration of ESG principles into corporate strategies is essential for achieving sustainability goals in digitally transforming firms. ESG performance operationalizes responsibility across ESG domains and provides a structured basis for evaluating the environmental impacts of digital technologies (Garcia et al. 2017).

Recent research has demonstrated that digital innovations aligned with ESG principles can significantly improve energy efficiency, reduce carbon emissions, and optimize resource

utilization (Darsono et al. 2024; Li and Li 2022). Within the TOE, ESG performance functions as a mediating mechanism that channels the influence of CDR into concrete environmental outcomes. Specifically, the technological context contributes by embedding digital tools for monitoring, analytics, and resource efficiency. The organizational context supports this through the establishment of governance routines, performance targets, and transparent disclosure practices. Finally, the environmental context reinforces these processes by aligning them with regulatory expectations and increasing stakeholder demands for verifiable sustainability commitments. Together, these interrelated dimensions enable ESG performance to operationalize the effects of responsible digital practices in measurable and environmentally beneficial ways.

H4. *ESG performance mediates the relationship between CDR and environmental outcomes.*

2.3.5 | ESG Performance and Environmental Outcomes

ESG performance represents a firm's commitment to systematically addressing ESG priorities through integrated strategic and operational mechanisms. In the environmental domain specifically, strong ESG practices contribute to reductions in emissions, improvements in energy and water efficiency, and the integration of sustainable technologies into core processes.

Prior research provides robust empirical support for this connection. Li and Li (2022) and Mohammad and Wasiuzzaman (2021) find that ESG-oriented firms are more likely to adopt clean innovations, improve waste management, and enhance environmental disclosure quality. Additionally, ESG frameworks facilitate consistent reporting and assurance mechanisms, such as sustainability audits and environmental metrics that improve internal oversight and external transparency (Darsono et al. 2024).

The capacity of ESG initiatives to convert strategic intent into tangible environmental gains depends on how well such practices are embedded into daily operations and continuously monitored. In this way, ESG performance acts not only as a signaling mechanism to external stakeholders but also as a vehicle for internal environmental improvement through clear targets, performance tracking, and accountability systems.

H5. *ESG performance positively influences environmental outcomes.*

2.3.6 | Moderating Role of e-WOM

e-WOM plays a central role in amplifying stakeholder responses to corporate ESG initiatives. Digital platforms enable real-time interaction among stakeholders, facilitating the dissemination, validation, or critique of firms' ESG-related actions. Such visibility increases the interpretive power of stakeholders in shaping firm reputation and legitimacy. As stakeholder theory highlights, firms are no longer passive observers but must continuously engage with external audiences to sustain their credibility (Freeman 1984; Greenwood 2007).

In particular, e-WOM reflects a dialogical form of stakeholder engagement, where audiences not only receive information but also evaluate and respond to it. According to Morsing and Schultz (2006), this participatory mode of communication enhances stakeholder trust when firms demonstrate consistency between claims and actions. Accordingly, when a firm's ESG performance aligns with stakeholder expectations and is positively reflected through e-WOM, it strengthens perceptions of authenticity and reinforces the perceived value of CDR initiatives.

On the contrary, the absence of such digital endorsement or the presence of negative e-WOM can dilute the perceived effectiveness of ESG practices, triggering skepticism or reputational damage. Empirical studies support this dynamic. Du et al. (2010) show that stakeholder-generated content significantly boosts the impact of CSR efforts. Similarly, Hajli et al. (2017) find that e-WOM positively shapes trust and behavioral outcomes when firms actively engage in socially responsible behavior.

In the context of this study, e-WOM acts as a moderating factor that shapes the strength of the relationship between ESG performance and environmental outcomes. High levels of positive e-WOM increase the credibility and dissemination of ESG efforts, thereby reinforcing their effectiveness in generating favorable environmental results (Cheung and Thadani 2012). Conversely, limited or skeptical e-WOM may weaken the connection by undermining stakeholder support or trust.

H6. *e-WOM moderates the relationship between ESG performance and environmental outcomes.*

Figure 1 shows the theoretical model developed for this study, indicating the hypothesized relationships among the key constructs.

3 | Methodology

3.1 | Survey Instrument and Empirical Setting

To empirically test the hypothesized relationships, data were collected through a structured questionnaire administered to employees of service firms operating in the Greater Metropolitan Region of Istanbul, Turkey, during the final quarter of 2024. Employees were chosen as key informants because they are directly involved in implementing and experiencing CDR practices in their daily work routines. Their perspectives are critical to understanding how digital technologies, ethical guidelines, and sustainability-oriented initiatives are enacted within organizational processes. Unlike customers, employees possess insider knowledge of how digital governance structures, resource allocation, and environmental policies interact to shape actual ESG performance and environmental outcomes. Using employee-level data thus enhances the validity of the constructs, as it captures the behavioral and procedural dimensions of CDR that are largely internal to the firm. The survey focused on service organizations that were demonstrably engaged in DT initiatives and had adopted frameworks aligned with environmental sustainability and ESG principles.

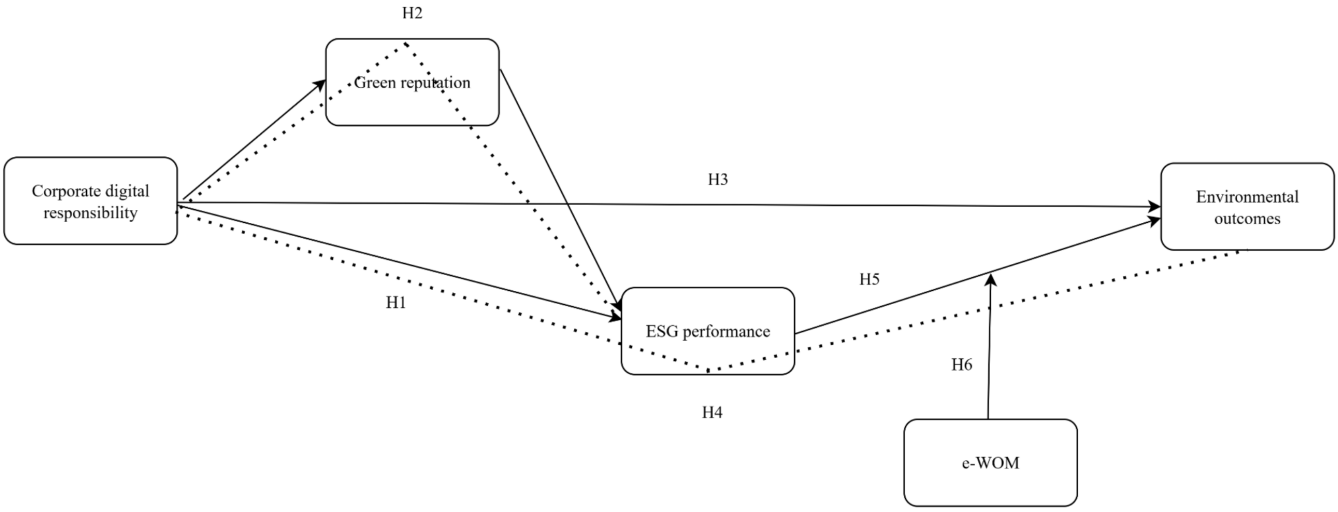

FIGURE 1 | Proposed model.

The selection of Istanbul as the empirical setting was informed by its distinctive economic, institutional, and environmental profile. As Turkey's largest metropolitan region and its principal commercial hub, Istanbul represents a highly dynamic service economy encompassing key industries such as tourism, hospitality, finance, logistics, and healthcare. The city exhibits a high density of service firms exposed to international standards, consumer-driven sustainability pressures, and national digitalization agendas (Akgün et al. 2025; Kleiner-Schaefer et al. 2024). Its unique positioning at the intersection of European and Asian markets also provides a valuable lens for examining how firms respond to global imperatives surrounding CDR, ESG compliance, and environmental performance. These characteristics make Istanbul a particularly suitable context for exploring the intersection of digitalization and sustainability within service firms.

The survey instrument was developed based on the extant literature, adapted to the service sector context. All questionnaire items were initially composed in English and subsequently translated into Turkish using the back-translation method to ensure conceptual and linguistic equivalence. Two bilingual academic experts performed the translation and retranslation procedures independently.

To assess the clarity, face validity, and contextual relevance of the items, a pretest was conducted with a panel of six individuals comprising two academic researchers in sustainability and digital management, two research assistants familiar with survey administration, and two service-sector employees with experience in corporate ESG initiatives. The panel reviewed the instrument for ambiguity, redundancy, and industry relevance. No substantial issues were raised during this process, and the original structure and content of the survey items were retained without modification.

Participants were provided with a detailed explanation of the study's purpose, their role in the research, and their rights as respondents. Ethical considerations were addressed through informed consent procedures that emphasized anonymity, voluntary participation, and the right to withdraw at any stage without consequence. All data were collected and handled in compliance with relevant ethical research guidelines and data protection protocols.

3.2 | Sample and Data Collection

A purposive sampling strategy was adopted to align the sampling process with the research objectives. Rather than relying on random selection, this method enabled the deliberate identification of information-rich cases, specifically, service firms exhibiting demonstrable commitment to digitalization and sustainability. The sampling frame was constructed using publicly accessible databases, sustainability indexes, and business directories listing firms with recognized green certifications (e.g., ISO 14001, Green Key, LEED), DT awards, or inclusion in national sustainability initiatives. Additional screening was conducted through company websites and corporate reports to confirm the presence of digital infrastructure and environmental programs.

Following the construction of the sampling frame, initial contact was established with 65 eligible service firms. Target respondents were employees occupying mid- to senior-level roles, particularly in departments involved with environmental management, digitalization, or sustainability strategy. To ensure respondent suitability, a brief screening question was included in the survey invitation, requiring participants to confirm their direct involvement in or knowledge of their organization's digital and sustainability initiatives.

Data were collected through structured questionnaires distributed via email and telephone follow-ups. Two rounds of reminders were issued to improve the response rate. A total of 233 valid responses were obtained, all of which were checked for completeness and internal consistency.

Regarding respondent demographics, the average age was 35.5 years. Males constituted 65% of the sample, and females 35%. The departmental distribution of respondents was weighted toward core strategic and functional areas within

the participating service firms. Approximately 32% of participants held leadership roles in sales and marketing departments, where digital outreach and sustainability messaging are frequently aligned. Another 26% represented operational and administrative management, overseeing the implementation of digital infrastructure and environmentally responsible practices. Finance and accounting executives accounted for 18% of the sample, contributing insights into ESG reporting and performance tracking. Additionally, 14% of respondents were drawn from corporate sustainability and compliance units, while 10% held IT and DT responsibilities at the departmental or firm-wide level. This distribution ensures the inclusion of managerial perspectives with direct responsibility for shaping and executing CDR and sustainability strategies, thus reinforcing the alignment between respondent profiles and the study's conceptual focus.

At the firm level, the average operational age of participating companies was approximately 20.1 years, reflecting a mix of established enterprises and relatively newer market entrants. The average number of employees per firm was 68.9, indicating that the sample consisted primarily of small and medium-sized enterprises (SMEs). The average respondent age was 35.5 years, suggesting a demographically diverse pool of employees with varying levels of professional experience and exposure to their firms' digital and environmental agendas.

3.3 | Operationalization of Variables

To test the proposed hypotheses, we relied on previously validated multi-item scales that are theoretically grounded and empirically established in the extant literature. All variables were measured on a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The instrument was designed to capture the perceptions of employees in service sector firms regarding the firm's digital responsibility, environmental orientation, and stakeholder communication practices.

3.3.1 | Independent Variable

CDR was operationalized using four items adapted from Vo Thai et al. (2024). These items capture an organization's commitment to ethical, sustainable, and socially responsible management of digital technologies, reflecting its adherence to transparency, data protection, inclusivity, and ecological consciousness in digital practices.

3.3.2 | Mediator Variables

ESG performance was measured using four items adopted from Shahzad et al. (2023). These items reflect employee perceptions of how well the company incorporates ESG principles into its overall business strategy and operations.

Green reputation was assessed using four items adapted from Afum et al. (2023). These items were designed to gauge stakeholders' perceptions of the company's credibility and commitment to environmental sustainability, as perceived internally by employees.

3.3.3 | Dependent Variable

Environmental outcomes were captured through five items adopted from Úbeda-García et al. (2021). The items reflect the firm's effectiveness in implementing environmentally beneficial practices such as resource conservation, waste minimization, pollution control, and ecological innovation.

3.3.4 | Moderator Variable

e-WOM was measured using five items adapted from Serra-Cantallops et al. (2020). Originally designed to assess customer-based e-WOM, the items were carefully reworded to reflect the perspectives of employees as internal ambassadors who share, advocate, or communicate their company's sustainability practices and environmental commitment via digital channels.

A detailed listing of the individual measurement items along with their original sources is presented in the Appendix.

3.3.5 | Control Variables

Two firm-specific characteristics were included as control variables in the analysis. *Firm size*, measured on a ratio scale by the number of employees, served as an indicator of organizational scale and resource capacity. Larger firms may have greater means to invest in CDR-related technologies, strengthen ESG performance, and enhance their green reputation, potentially influencing the extent and impact of e-WOM. *Firm age*, calculated as the number of years in operation, was also included as a control variable. Older firms may possess established structures and reputational capital that shape their CDR and ESG efforts, whereas younger firms might demonstrate greater flexibility and responsiveness to emerging sustainability trends but with less institutional history to leverage in e-WOM dynamics.

3.4 | Common Method Bias and Nonresponse Bias Test

Given the reliance on self-reported survey data collected from individual respondents within firms, it was important to assess the potential for common method bias (CMB). To examine this, Harman's one-factor test was conducted. All items from the survey instrument were entered into an exploratory factor analysis using principal component extraction without rotation. The results showed that the first unrotated factor accounted for only 28.0% of the total variance, which falls well below the conventional 40% threshold (Podsakoff et al. 2003), suggesting that CMB is unlikely to be a significant concern.

In addition to statistical testing, several procedural steps were taken to reduce the likelihood of CMB. The survey included

TABLE 1 | Convergent validity.

Constructs	Items	Loadings	CR	AVE	Cronbach alpha
Corporate digital responsibility	CDR1	0.870	0.841	0.678	0.841
	CDR2	0.777			
	CDR3	0.867			
	CDR4	0.864			
ESG performance	ESG1	0.788	0.829	0.661	0.829
	ESG2	0.844			
	ESG3	0.833			
	ESG4	0.785			
Green reputation	GR1	0.894	0.939	0.844	0.939
	GR2	0.919			
	GR3	0.938			
	GR4	0.924			
Environmental outcomes	EO1	0.904	0.943	0.815	0.943
	EO2	0.871			
	EO3	0.923			
	EO4	0.908			
	EO5	0.907			
e-WOM	e-WOM1	0.875	0.893	0.695	0.890
	e-WOM2	0.836			
	e-WOM3	0.790			
	e-WOM4	0.851			
	e-WOM5	0.814			

clear instructions ensuring respondent anonymity and confidentiality, and it emphasized the voluntary nature of participation. Furthermore, question wording was carefully designed to minimize ambiguity, and items were drawn from diverse established sources to limit consistency artifacts. Importantly, the data were collected from 233 employees across 65 different service companies, with several respondents from each participating firm. This multi-respondent design at the organizational level helps to dilute the risk of single-source bias, providing an added safeguard against potential CMB threats.

To assess the risk of non-response bias, a comparison was made between early and late respondents, a standard method for identifying systematic differences that may reflect response patterns. Following the method proposed by Armstrong and Overton (1977), we conducted independent sample *t*-tests comparing early versus late respondents (first 50% versus last 50%) on key demographics and study variables to examine potential nonresponse bias. No statistically significant differences were observed between the two groups ($p > 0.05$), indicating that nonresponse bias does not pose a serious threat to the validity or generalizability of the results.

4 | Data Analysis and Results

4.1 | Assessment of Measurement Model

Given that the unit of analysis in this study is the firm, all item-level responses were first aggregated at the firm level to derive composite scores prior to statistical analysis. The reliability and validity of the measurement instruments were assessed following a two-step approach.

Internal consistency reliability was evaluated using Cronbach's alpha (CA). As shown in Table 1, the CA values for each construct were as follows: CDR (0.841), ESG performance (0.829), green reputation (0.939), environmental outcomes (0.943), and e-WOM (0.890). All values exceed the widely accepted threshold of 0.70, indicating satisfactory internal reliability, in line with the guidelines suggested by Nunnally and Bernstein (1994).

Further assessment of composite reliability (CR) confirmed the consistency of the latent constructs. According to Table 2, CR values ranged from 0.829 to 0.943, which surpasses the

minimum standard of 0.70 as recommended by Bagozzi and Yi (1988), supporting the internal consistency of the constructs.

Convergent validity was assessed using the average variance extracted (AVE). As reported in Table 2, the AVE values for all constructs were between 0.661 and 0.844, comfortably exceeding the minimum threshold of 0.50 set by Fornell and Larcker (1981). These results confirm that each set of indicators adequately explains the variance of the corresponding construct.

To assess discriminant validity, we calculated the heterotrait–monotrait (HTMT) ratio of correlations. As shown in Table 2, all HTMT values were below the recommended threshold of 0.90, as proposed by Henseler et al. (2015). These results confirm that the constructs are empirically distinct, and multicollinearity is not a concern.

Finally, the correlation matrix in Table 2 indicates strong and significant relationships among key constructs: CDR and ESG performance ($r = 0.634$), ESG performance and environmental outcomes ($r = 0.546$), and CDR and environmental outcomes ($r = 0.611$). These correlations provide initial empirical support for the hypothesized linkages in the conceptual model.

Taken together, the results confirm that the measurement model demonstrates satisfactory reliability, convergent validity, and discriminant validity, establishing a strong foundation for subsequent structural model analysis.

4.2 | Assessment of Structural Model

To evaluate the structural model and test the hypothesized relationships, the study employed the partial least squares structural equation modeling (PLS-SEM) technique using the SmartPLS 4 software. A nonparametric bootstrapping procedure with 5000 subsamples was applied to estimate the significance and robustness of the path coefficients. This approach is particularly appropriate for studies with complex models and moderate sample sizes, as it does not assume multivariate normality (Hair et al. 2022).

Model fit was assessed using the standardized root-mean-square residual (SRMR), a commonly accepted goodness-of-fit index in PLS-SEM. SRMR measures the difference between observed and predicted correlations and is considered acceptable when values are less than 0.08, particularly in models with more than 100 observations (Henseler et al. 2016). The SRMR value for the present model was 0.063, the NFI was 0.91, and the CFI was 0.93, all indicating an acceptable fit and supporting the adequacy of the proposed structural model for hypothesis testing.

Figure 2 presents the structural model with standardized path coefficients and significance levels.

TABLE 2 | Correlation matrix, Fornell–Larcker criterion, and HTMT ratio values.

Variables*	Mean	S.D.	1	2	3	4	5
1. CDR	4.33	0.71	**0.823**	*0.749*	*0.779*	*0.673*	*0.491*
2. ESG performance	4.33	0.68	0.634	**0.813**	*0.781*	*0.606*	*0.629*
3. Green reputation	4.13	0.88	0.699	0.688	**0.919**	*0.459*	*0.536*
4. Environmental outcomes	3.99	0.97	0.611	0.546	0.708	**0.903**	*0.449*
5. e-WOM	4.49	0.60	0.426	0.540	0.481	0.412	**0.834**

Note: Diagonal values represent the square root of the AVE. Italicized values above the diagonal indicate HTMT ratios. Values below the diagonal show Pearson correlation coefficients among the constructs.
Abbreviation: SD, standard deviation.
*All correlation coefficients are significant at the $p < 0.01$ level.

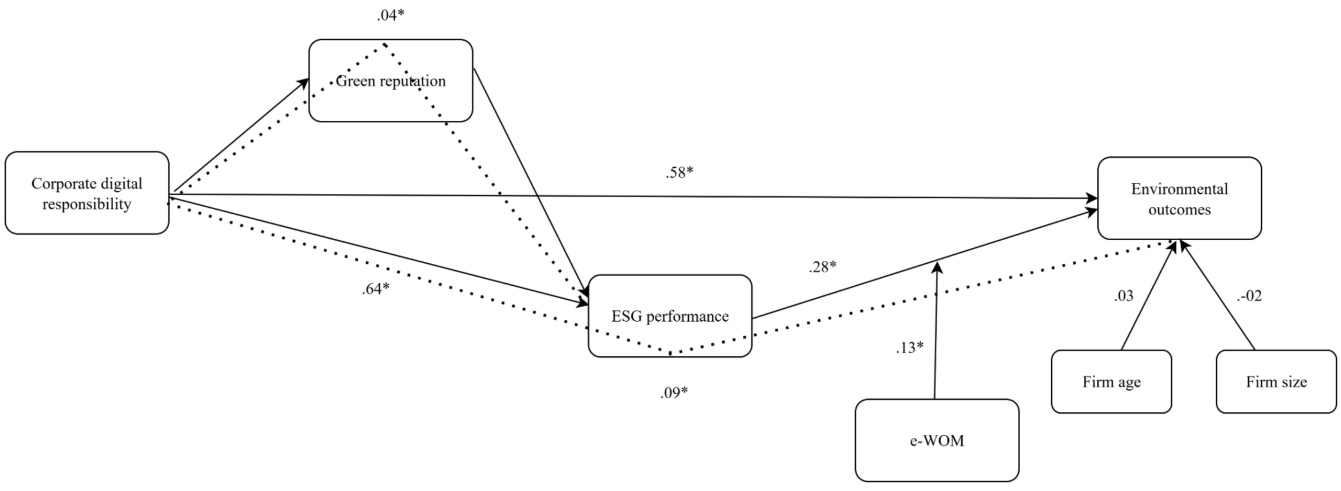

FIGURE 2 | Results of path model.

4.2.1 | Direct Effects

The analysis of direct effects within the structural model yielded statistically significant relationships that support the proposed hypotheses. As shown in Table 3, the path coefficient from CDR to ESG performance was positive and substantial ($\beta = 0.64$, $p < 0.01$), providing empirical support for H1. This finding indicates that firms demonstrating a stronger commitment to CDR tend to achieve higher ESG performance, aligning with the view that ethical digital practices contribute to broader sustainability goals.

In testing H3, the results confirmed that CDR exerts a significant and positive influence on environmental outcomes ($\beta = 0.58$, $p < 0.01$). This suggests that firms integrating digital responsibility into their operational strategies are better positioned to improve environmental performance, potentially through enhanced digital efficiency and reduced environmental externalities.

H5 was also supported, with ESG performance exhibiting a positive effect on environmental outcomes ($\beta = 0.28$, $p < 0.01$). This relationship affirms that the implementation of robust ESG practices contributes meaningfully to the achievement of environmental goals, reinforcing the integrative role of ESG performance in advancing sustainability agendas.

Collectively, these results emphasize the importance of both CDR and ESG performance as key drivers of environmentally responsible outcomes in digitally transforming service sector firms.

Regarding the control variables, neither firm size nor firm age exhibited a statistically significant effect on environmental outcomes. This implies that the relationships identified among CDR, ESG performance, green reputation, and environmental outcomes hold consistently, regardless of firm size or organizational maturity.

4.2.2 | Mediation Analysis

The analysis further explored the mediating mechanisms hypothesized within the proposed research model, using bootstrapped confidence intervals to assess the significance of indirect effects. As detailed in Table 3, the findings provide empirical support for both mediation hypotheses.

In line with H2, green reputation was found to significantly mediate the relationship between CDR and ESG performance. The indirect effect ($\beta = 0.04$, $p < 0.01$) indicates that stakeholder perceptions of a firm's environmental commitment help translate responsible digital practices into improved ESG outcomes. This suggests that reputational assets can play a strategic role in reinforcing the effectiveness of digital sustainability initiatives.

Similarly, H4 is supported, as ESG performance significantly mediates the relationship between CDR and environmental outcomes ($\beta = 0.09$, $p < 0.01$). This result highlights the intermediary role of ESG performance in linking digital responsibility practices to tangible environmental improvements. It implies

TABLE 3 | Results of hypothesis testing.

Effects	Relationship	β	Mean	SD	*t*-value	Level of support
Direct effects						
H1: CDR positively influences ESG performance.	CDR → ESG performance	0.64	0.65	0.04	15.21*	Supported
H3: CDR positively influences environmental outcomes.	CDR → Environmental outcomes	0.58	0.58	0.06	9.41*	Supported
H5: ESG performance positively influences environmental outcomes.	ESG → Environmental outcomes	0.28	0.28	0.09	2.98*	Supported
Mediating effects						
H2: Green reputation mediates the relationship between CDR and ESG performance.	CDR → Green reputation → ESG performance	0.04	0.34	0.08	4.01*	Supported
H4: ESG performance mediates the relationship between CDR and environmental outcomes.	CDR → ESG performance → Environmental outcomes	0.09	0.08	0.03	2.64*	Supported
Moderating effect						
H6: e-WOM moderates the relationship between ESG performance and environmental outcomes.	ESG* e-WOM → Environmental outcomes	0.13	0.13	0.04	3.36*	Supported

*$p < 0.01$.

that without embedding ESG frameworks, the full potential of CDR to enhance environmental performance may not be realized.

4.2.3 | Moderation Analysis

The final stage of the analysis examined the moderating role of e-WOM in the relationship between ESG performance and environmental outcomes, as proposed in H6. As shown in Table 3, the interaction term between ESG performance and e-WOM is positive and statistically significant ($\beta = 0.13$, $p < 0.01$). This result provides empirical evidence that the effect of ESG performance on environmental outcomes is contingent on the level of e-WOM, such that higher levels of positive digital communication amplify the environmental benefits associated with strong ESG implementation.

To further explore this interaction effect, a simple slope analysis using PLS methodology was conducted, and the results are presented in Figure 3. The slopes were estimated at three levels of e-WOM: one standard deviation below the mean (low), at the mean (moderate), and one standard deviation above the mean (high). When e-WOM is low, the relationship between ESG performance and environmental outcomes is negligible or even slightly negative, indicating limited environmental gains under weak stakeholder communication. At the average level of e-WOM, the relationship becomes positive but modest. However, when e-WOM is high, the positive slope becomes notably steeper, illustrating a strong amplifying effect. This finding confirms that higher levels of stakeholder engagement through digital channels play a reinforcing role in translating ESG efforts into meaningful environmental performance improvements.

Together, these results support H6 and reinforce the broader implication that communication mechanisms such as e-WOM serve as critical enablers of ESG effectiveness. They suggest that firms seeking to maximize the environmental return on their sustainability investments should actively foster credible and widespread digital advocacy among stakeholders.

5 | Discussion

This study contributes to the expanding literature on CDR and environmental sustainability by demonstrating how CDR initiatives can produce measurable environmental improvements through enhanced ESG performance, green reputation, and employee-driven e-WOM. While previous research has reported inconsistent findings regarding the ESG–environmental performance relationship (Albertini 2013; Busch and Lewandowski 2018; Velte 2017), the present results provide

FIGURE 3 | PLS-based simple slope analysis.

added clarity by showing that CDR serves as a strategic input that fosters stronger ESG practices, which in turn translate into improved environmental outcomes.

Specifically, the findings indicate that firms integrating CDR into their organizational processes report reductions in both direct and indirect toxic emissions, greater use of recycled materials, and more efficient energy consumption. These outcomes are aligned with evolving regulatory frameworks and stakeholder expectations regarding environmental sustainability (Ameh 2024; Lozano 2015; Bocken et al. 2014; Wright and Nyberg 2017). ESG performance, in this context, functions as a transformation mechanism through which digitally responsible actions yield tangible sustainability achievements (Niu et al. 2022).

The lack of significance for firm size and age among the control variables suggests that the benefits of CDR, ESG performance, and e-WOM are not confined to larger or more established organizations. This observation reinforces the idea that service firms operating in technology-driven environments can leverage CDR for environmental improvement regardless of structural or temporal advantages.

On the technological front, CDR entails the implementation of digital systems that enhance transparency, enable environmental monitoring, and support resource-efficient practices (Melville 2010). Yet, the organizational context is equally influential. The study identifies green reputation as a key mediating construct that bridges internal CDR initiatives and externally visible ESG performance. A strong green reputation reflects the firm's ability to effectively communicate its environmental values, shape stakeholder perceptions, and integrate sustainability objectives into its digital strategy (Fombrun 1996). This alignment between internal capability and external legitimacy enables firms to better anticipate regulatory developments, respond to societal pressures, and strengthen their competitive positioning in sustainability-sensitive markets (Bansal and Roth 2000; Truong et al. 2021).

An additional contribution of this study lies in its identification of employee-driven e-WOM as a significant moderating factor. The analysis shows that employees who actively share positive digital content about their organization's environmental and ESG efforts help amplify these initiatives in ways that extend beyond formal reporting. Examples include posting favorable reviews, uploading visual content, and highlighting green initiatives across personal or professional digital platforms. These forms of engagement serve as informal yet influential channels for reinforcing the firm's credibility and broadening stakeholder awareness. Within the TOE framework, this phenomenon is shaped by technological tools that facilitate sharing, organizational cultures that support employee advocacy, and environmental pressures that demand greater transparency and accountability.

The finding that e-WOM enhances the relationship between ESG performance and environmental outcomes highlights the strategic value of internal stakeholder engagement. When employees act as informed advocates of their company's sustainability vision, they elevate the firm's green reputation and increase the visibility of its ESG practices. For service-based firms, where brand perception and customer trust are crucial, employee-driven e-WOM can serve as a reputational multiplier that reinforces the firm's commitment to sustainability in the eyes of both internal and external audiences.

Overall, the study offers a comprehensive framework that positions CDR not as an isolated technological intervention but as an organizational capability that interacts with ESG mechanisms, reputation systems, and stakeholder communication networks to generate sustainable environmental performance. In doing so, it highlights the importance of viewing CDR through a multidimensional lens that integrates technological infrastructure, organizational strategy, and stakeholder interaction.

6 | Conclusion and Implications

6.1 | Main Findings

This study identifies and explains the mechanisms through which CDR contributes to improved environmental performance within the service sector. The findings indicate that CDR is not a peripheral initiative but a central component in the broader architecture of sustainability governance. It works through structured organizational channels and is shaped by both internal systems and external communicative dynamics.

The evidence suggests that CDR exerts its influence on environmental performance primarily through enhanced ESG systems. Firms that embed CDR practices into their operations tend to develop more transparent, accountable, and sustainability-focused ESG frameworks. These frameworks, in turn, are associated with reduced emissions, increased recycling practices, and a greater reliance on renewable resources. The progression from responsible digitalization to tangible environmental outcomes reflects the importance of institutionalizing digital responsibility within governance structures that prioritize sustainability.

In addition to the ESG pathway, the study reveals the importance of green reputation as an intermediate mechanism. A positive environmental reputation reinforces the credibility of CDR efforts and improves how stakeholders interpret the firm's sustainability actions. This reputational effect operates internally by motivating further organizational commitment and externally by fostering stakeholder trust and engagement. The presence of a favorable green reputation thus strengthens the alignment between CDR and ESG achievements.

Employee engagement through e-WOM provides an additional reinforcing channel. When employees voluntarily share favorable accounts of their firms' environmental and digital practices through digital platforms, this peer-driven communication enhances the visibility of sustainability efforts. It also contributes to shaping stakeholder perceptions, especially in service industries where client trust and corporate transparency are central to value creation. These contributions by employees help amplify the firm's ESG signals, offering a relational mechanism that supports environmental progress.

Taken together, the findings confirm that the effectiveness of CDR in advancing environmental outcomes depends on its integration into institutional processes, its translation into recognizable ESG performance, and its support through reputational and relational channels. The interplay between governance mechanisms, reputational capital, and employee advocacy provides a coherent explanation for how service firms can transform CDR into meaningful environmental improvements.

6.2 | Theoretical and Practical Implications

This study contributes to theory by extending the TOE framework into the domain of CDR within service-sector firms. The findings demonstrate that technological capabilities, organizational commitment, and environmental pressures jointly influence how firms design and institutionalize responsible digital practices. By applying the TOE framework in this context, the study enhances understanding of how DT and sustainability strategies can be integrated into a single coherent structure that connects CDR, ESG performance, and environmental outcomes.

This study advances the TOE framework by demonstrating how CDR interacts with technological capabilities, organizational structures, and external pressures to enhance environmental outcomes. In doing so, it consolidates and builds upon prior theoretical and empirical contributions across several domains. For example, the environmental dimension of CDR aligns with previous discussions of resource efficiency and sustainability strategies (Ameh 2024; Bocken et al. 2014; Lozano 2015; Wright and Nyberg 2017), while the organizational implications resonate with findings on internal governance and green reputation as a driver of stakeholder legitimacy (Melville 2010; Fombrun 1996; Bansal and Roth 2000; Truong et al. 2021). At the same time, the model echoes recent studies linking ESG performance to measurable environmental achievements (Niu et al. 2022), thereby offering a cohesive conceptual structure for connecting CDR with environmental impact.

From a managerial standpoint, the results highlight that CDR should be viewed as a long-term strategic commitment rather than a compliance obligation. Managers in service firms are encouraged to establish explicit ethical standards and sustainability objectives for the design, use, and evaluation of digital technologies. The integration of these principles into governance systems enhances transparency and accountability, which in turn strengthens ESG performance. Developing clear operational guidelines, institutionalizing responsible data-use procedures, and providing continuous training opportunities can foster a culture of CDR that extends throughout the organization.

Service companies that implement such practices are more likely to achieve tangible environmental improvements, such as reduced energy consumption, improved waste management, and increased adoption of renewable resources. These achievements not only strengthen environmental performance but also enhance corporate credibility and customer trust. Collaboration with technology partners is equally important. Managers should work with digital solution providers to implement systems that support sustainability goals, including intelligent energy-management platforms, automated waste-tracking tools, and real-time analytics for environmental monitoring.

Integrating ESG criteria into daily decision-making processes is another crucial step. This involves conducting environmental impact assessments, adopting sustainability certification schemes, and prioritizing investments in technologies that minimize environmental impact. Aligning ESG initiatives with green-reputation management and encouraging employee participation in e-WOM activities can amplify the reach and authenticity of sustainability communication while strengthening stakeholder relationships.

Building and maintaining a strong green reputation is vital for sustaining competitive advantage. Managers should communicate sustainability progress consistently through various channels and engage employees as advocates of environmental initiatives. Encouraging employees to share experiences through digital media, such as posting updates, photographs, or reflections on the firm's sustainability activities, can help shape a recognizable and trustworthy corporate identity that appeals to environmentally aware audiences. Recognition programs, training on effective communication, and incentive schemes can further motivate employees to participate in such efforts, thereby enhancing both credibility and visibility.

In practical terms, the alignment of CDR, ESG systems, and employee engagement forms an integrated pathway toward improved environmental outcomes. Firms that coordinate these dimensions more effectively are better positioned to strengthen environmental performance, build reputational value, and respond to the evolving expectations of regulators, consumers, and society.

6.3 | Limitations and Future Research

While this study advances understanding of CDR and its link to environmental outcomes, several limitations should be acknowledged. These limitations provide opportunities for future inquiry to deepen and refine current insights.

First, the empirical analysis draws on responses from 233 employees across 65 service-sector firms in the Greater Metropolitan Region of Istanbul. Although this context provides meaningful insight into an urban service economy undergoing digital and sustainability transitions, the geographic and cultural specificity of the sample may limit the generalizability of findings to other regions or national contexts. Comparative studies across multiple countries or regions would help establish whether the observed relationships hold in different institutional environments.

Second, the study employs a cross-sectional design, which restricts the ability to draw conclusions about causality. Future research using longitudinal data could capture how the effects of CDR evolve over time and whether ESG performance serves as a consistent mechanism for achieving environmental outcomes. Such studies could also shed light on the persistence and transformation of organizational practices related to sustainability and digital governance.

Third, the reliance on a single-source, self-reported survey introduces potential concerns about CMB and perceptual distortion. Although procedural safeguards were applied during survey development, future studies could enhance validity by incorporating multiple data sources. For example, triangulating employee responses with corporate environmental reports, third-party ESG ratings, or customer feedback would provide a more comprehensive view of the organizational dynamics at play.

Fourth, this research treated the service sector as a unified category, without accounting for differences among sub-sectors such as hospitality, finance, healthcare, or transportation. These sectors may vary significantly in their digital infrastructures, regulatory exposures, and stakeholder expectations. Disaggregated analyses could uncover sector-specific mechanisms and provide more targeted guidance for practitioners.

Fifth, although controls for firm size and organizational age were included in the analysis, other relevant contextual factors such as digital maturity, exposure to regulatory mandates, and position in the supply chain were not available for examination. These factors may significantly influence the effectiveness and adoption of CDR strategies. Future studies should aim to incorporate such variables to improve contextual specificity and model accuracy.

Finally, this study did not explicitly examine the role of internal organizational dynamics such as leadership orientation, strategic alignment, or innovation climate. These factors may moderate the pathways between CDR, ESG performance, and environmental outcomes. Future research could investigate how these internal mechanisms shape or constrain the strategic translation of CDR into environmental value.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data supporting the findings of this study are available from the corresponding author (upon reasonable request).

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this work, the authors edited the manuscript using ChatGPT 5 and Grammarly. After using these tools, they reviewed and edited the content as needed and took full responsibility for the content of the published article.

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Appendix A

Construct	Items	Source(s)
Corporate digital responsibility	1. This company has used digital tools for implementing digital security and consumer protection features. 2. This company has used digital tools for complying with legal and regulatory requirements. 3. This company has used digital tools for analyzing or researching to answer business questions. 4. This company has used digital tools for coordinating or collaborating between employees.	Vo Thai et al. (2024)
ESG performance	1. Our company focuses on and continuously improves employee job satisfaction. 2. Our company provides outstanding support for talent development. 3. Our company participates in social welfare activities. 4. Our company has a business philosophy of sustainable development.	Shahzad et al. (2023)
Green reputation	1. We have developed a stronger environmental image compared with our competitors. 2. We are acknowledged and appreciated as an environmentally friendly company. 3. We are recognized for maintaining a strong reputation for high environmental standards. 4. We have earned a distinguished reputation for offering eco-friendly products and services.	Afum et al. (2021)
Environmental outcomes	1. The actions implemented in our company to protect the environment have contributed to a reduction in total direct and indirect toxic emissions. 2. The actions implemented in our company to protect the environment have resulted in an increase in the total volume of recycled materials. 3. The actions implemented in our company to protect the environment have led to an increase in the use of renewable energy sources. 4. The actions implemented in our company to protect the environment have facilitated the development of more eco-friendly products and services. 5. The actions implemented in our company to protect the environment have contributed to a reduction in total direct and indirect energy consumption.	Úbeda-García et al. (2021)
e-WOM	1. I am excited to share on social networks that I am working at this company. 2. I have written positive comments about this company on social networks as part of my role. 3. I have posted positive reviews about this company on websites and/or travel review websites on behalf of the company. 4. I have uploaded photos and/or videos on social networks showcasing the company during my stay or work experience. 5. I became a fan of the company chain's profile on social networks to engage with the brand professionally.	Serra-Cantallops et al. (2020)