

Collaboration with Digital Capabilities Enhance Firm's ESG Management: A Systematic Literature Review

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Abstract

This study explores the role of collaboration in digital capabilities in enhancing Environmental, Social, and Governance (ESG) index performance. With the growing importance of ESG consideration in today's business landscape, organizations are turning to digital tools and collaboration as key enablers to drive sustainable outcomes. This systematic literature review critically analyzes and synthesizes existing research to uncover barriers, best practices, and emerging technologies in ESG management. The findings offer valuable insights for organizations, policymakers, and researchers seeking to enhance ESG index performance and create long-term value. Through a rigorous methodology, this review consolidates diverse perspectives and provides a comprehensive understanding of the interplay between collaboration, digital capabilities, and ESG index performance. Potential research issues and sub-topics on collaboration and ESG management are suggested.

Keywords: ESG, Collaboration, Digital Capabilities, Barriers & Challenges, Digital Strategy.

1. Introduction

In today's rapidly changing business landscape, organizations increasingly recognize the importance of Environmental, Social, and Governance (ESG) considerations in driving sustainable outcomes and long-term value creation. ESG index performance has emerged as a crucial measure of a company's ability to effectively manage its impact on the environment, society, and stakeholders while maintaining good corporate governance practices.

As the importance of ESG index performance continues to grow, organizations are turning to digital capabilities and collaboration as critical enablers to enhance their ESG management practices. Collaboration, both internally and externally, allows organizations to engage with stakeholders, gather diverse perspectives, and incorporate them into their decision-making processes, leading to more robust and effective sustainability strategies.

This systematic literature review aims to investigate how organizations can enhance their ESG index performance and achieve sustainable outcomes by leveraging digital capabilities and collaboration. By analyzing existing research, we will explore the barriers faced by organizations in utilizing digital capabilities for ESG performance, as well as identify best practices and strategies for effectively integrating digital capabilities and collaboration. Additionally, we will examine the emerging technologies and data analytics techniques employed in ESG management and reporting. Our rigorous and transparent approach will ensure the inclusion of relevant studies, minimizing bias and providing valuable insights into the role of digital capabilities and collaboration in driving ESG index performance.

The integration of digital capabilities and collaboration in enhancing ESG index performance can be understood through several theoretical perspectives. Stakeholder theory emphasizes the importance of considering the interests and impact of various stakeholders in organizational decision-making processes. Organizations that effectively manage their ESG practices are more likely to generate positive outcomes by aligning their objectives with the broader interests of stakeholders (Freeman, 1984). The resource-based view (RBV) theory highlights the role of digital capabilities as valuable resources that contribute to a firm's competitive advantage (Barney, 1991). Organizations with advanced digital capabilities can leverage these resources to collect and analyze ESG data effectively, enabling informed decision-making and superior ESG index performance. The dynamic capabilities perspective emphasizes the importance of an organization's ability to adapt and transform in response to changing market conditions. Digital capabilities play a vital role in building dynamic capabilities, enabling organizations to access real-time data, respond to ESG-related challenges, and seize new opportunities for sustainable growth (Teece et al., 1997).

Previous research has shown that collaboration in digital capabilities is instrumental in improving ESG index performance. Johnson et al. (2018) highlight the significance of digital collaboration platforms in facilitating stakeholder engagement

and knowledge sharing, leading to improved ESG performance. Data analytics techniques and artificial intelligence provide valuable insights into environmental impact, resource efficiency, and social responsibility practices, allowing organizations to make data-driven decisions to enhance their ESG index performance (Lee and Pae, 2019). Collaborative partnerships between organizations, NGOs, and government bodies have been shown to address complex sustainability challenges and drive sustainable outcomes (Hong et al., 2020).

In this systematic literature review, we aim to consolidate and synthesize research findings to explore how organizations can leverage collaboration in digital capabilities to enhance their ESG index performance and drive sustainable outcomes. By reviewing scholarly articles, academic papers, and industry reports, we seek to provide a comprehensive understanding of the role of digital capabilities and collaboration in improving ESG performance. The insights gained from this review will be valuable to organizations looking to enhance their ESG index performance, as well as executives, managers, policymakers, and regulatory bodies involved in ESG management and sustainability initiatives. The paper is set up as follows: The literature on the obstacles and difficulties that organizations face in utilizing digital capabilities is reviewed in Section 2, best practices and strategies for integrating digital capabilities and collaboration are examined in Section 3, emerging technologies and data analytics are covered in Section 4, and the main conclusions, research gaps, and suggestions for further research are outlined in Section 5.

In short, this systematic literature review aims to shed light on the crucial role of collaboration in digital capabilities in enhancing ESG index performance. By analyzing and synthesizing the existing body of knowledge, this review will contribute to the understanding of effective strategies, best practices, and emerging technologies in ESG management.

2. Methodology

Adopting the SLR approach per Tranfield et al. (2003) and Hossain and Anees-ur-Rehman (2016), we investigate how organizations utilize digital capabilities and collaboration for ESG index performance and sustainable outcomes. Through a transparent process, we identify barriers (Sub-Research Question 1) and strategies (Sub-Research Question 2) for leveraging digital capabilities and collaboration. This review contributes insights into ESG management, addressing gaps and themes (Petticrew and Roberts, 2006).

Keyword combinations focused on ESG

management, digital capabilities, and collaboration. For the first question, keywords included "ESG", "environmental", "social", "governance", "challenges", "barriers", and "obstacles". For the second question, "best strategies", "ESG", "environmental", "social", "governance", and "integration" were used. For the third question, keywords encompassed "technology", "industry 4.0", "AI", "ethical", "analytics", "responsible", "sustainable", "blockchain", "big data", and "fintech". Figure 1 depicts the overall search process for articles.

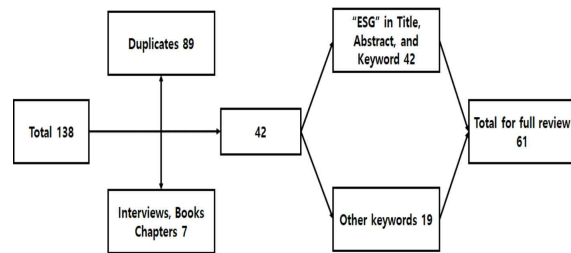


Fig. 1. The process and steps of article selection.

Nine main databases were searched, including EBSCO, IEEE Xplore, Emeralds, Sage Premier, ScienceDirect, Scopus, Taylor & Francis, Wiley, and Web of Science. The search term "ESG" was used across databases. Inclusion criteria, search restrictions, and categories were maintained. No date constraints were set due to ESG's recent relevance. The selection process adhered to established criteria, resulting in 61 relevant articles. The IePeO framework, used extensively in management studies, forms the basis of this research. It involves defining research questions, designing a search protocol, comprehensive literature search, inclusion/exclusion criteria, quality assessment, and synthesis of findings. This framework systematically addresses research questions.

138 documents were initially retrieved. 89 duplicates were removed, leaving 49 unique articles. After further refinement, 61 relevant articles were identified. The final selection was

Table 1. Process and steps of searching for appropriate articles.

Databases	No. of retrieved articles
EBSCO	11
Emeralds	21
IEEE Explore	8
Sage Premier	19
ScienceDirect	12
Scopus	13
Web of Science	17
Wiley	21
MDPI	
Total	38

rigorously maintained to ensure alignment with research objectives and relevance to ESG management in the business context. Table 1 lists the processes and processes for finding relevant publications.

3. Analysis and results

This systematic literature review aims to investigate how organizations leverage digital capabilities and collaboration to enhance their ESG index performance and drive sustainable outcomes (Main Research Question). The review seeks to understand the strategies and practices employed by organizations to achieve these objectives (SubResearch Question 2) and identify the barriers and challenges they face in leveraging digital capabilities for improved ESG performance (SubResearch Question 1). By analyzing a wide range of published articles, this review aims to uncover insights into the integration of digital capabilities and collaboration in ESG management and identify their impact on organizations' ESG index performance.

The review will explore the role of technology, such as smart ESG reporting platforms and big data analytics, in facilitating organizations' ESG management efforts. These technologies enable more accurate reporting and analysis of sustainability performance, aiding organizations in making informed decisions and driving improvements (Bhattacharya et al., 2018; Wu et al., 2021). Additionally, the review will examine the importance of strategic management and stakeholder engagement in ESG management. Strategic management practices guide organizations in setting sustainability goals, defining key performance indicators, and developing action plans (Eccles & Serafeim, 2013). Stakeholder engagement allows organizations to understand stakeholder expectations, align their sustainability efforts, and address relevant concerns (Freeman et al., 2010).

4. What is ESG in different spares of literature?

A growing body of research suggests a positive correlation between ESG index performance and digital capabilities, indicating that companies with strong ESG performance tend to possess robust digital capabilities. McKinsey's study revealed that companies in the top quartile of ESG performance outperformed the market by 15% over five years, and these companies were more inclined to invest in digital technologies, which yielded higher returns. Similarly, the University of Oxford found that firms with strong digital capabilities were

more likely to attain high ESG scores, indicating a link between digital prowess and ESG performance. Digital capabilities encompass the integration of digital technologies, such as artificial intelligence, machine learning, big data analytics, blockchain, and data visualization, to enhance ESG management practices and outcomes. The positive correlation between ESG index performance and digital capabilities can be attributed to factors like long-term sustainability focus, risk management, and investment in growth. ESG index performance refers to the financial success of businesses that display good ESG practices and support sustainable development goals (McKinsey, 2021). Digital capabilities in ESG index performance involve the use of digital technology and data analytics to promote sustainable practices and enhance ESG performance (McKinsey, 2021). Collaboration in digital capabilities refers to the ability of organizations to work with others to develop and use digital technologies to improve their ESG performance (Morgan Stanley Capital International, 2023).

ESG, which stands for environmental, social, and governance aspects, indicates a set of non-financial factors that investors consider when evaluating the sustainability and ethical impact of an investment in a company (Jonsdottir et al., 2022). It involves evaluating a company's performance in terms of its environmental impact, social responsibility, and corporate governance practices (Shalhoob & Hussainey, 2022). ESG is an industry that seeks to illuminate, appraise, and improve the activities of companies and investors based on their environmental impact, social responsibility, and corporate governance practices (Daugaard, 2020). The concept of ESG focuses on the long-term sustainability of the company and its effects on society, the environment, and governance (Morozov & Morozova, 2022). ESG is a framework for evaluating the sustainability and ethical impact of an investment (Saxena et al., 2022).

5. Research Sub-Topics from Literature Review

ESG index performance and the role of digital capabilities in enhancing it are understood through various theoretical perspectives. Stakeholder theory emphasizes considering the interests of shareholders, employees, communities, and the environment. Effective ESG practices align with stakeholders' interests (Freeman, 1984). The Resource-Based View (RBV) highlights digital capabilities' role in ESG index enhancement, emphasizing leveraging digital technologies for

ESG data utilization (Barney, 1991). The Dynamic Capacities perspective stresses digital capabilities' importance in real-time data access and sustainable growth (Teece et al., 1997).

Collaboration in digital capabilities boosts ESG index performance. Digital tech and collaboration address environmental, social, and governance factors. Johnson et al. (2018) note digital platforms enhance stakeholder engagement and ESG performance. Data analytics and AI aid ESG performance management (Lee & Pae, 2019). Stakeholder collaboration is key. Hong et al. (2020) underline partnerships' role in solving sustainability challenges. Subtopics that emerged from the literature review provide a framework. These organize the review, analyzing each area's theories and insights. This approach advances the understanding of digital capabilities in ESG management. Figure 2 demonstrates the conceptual map.

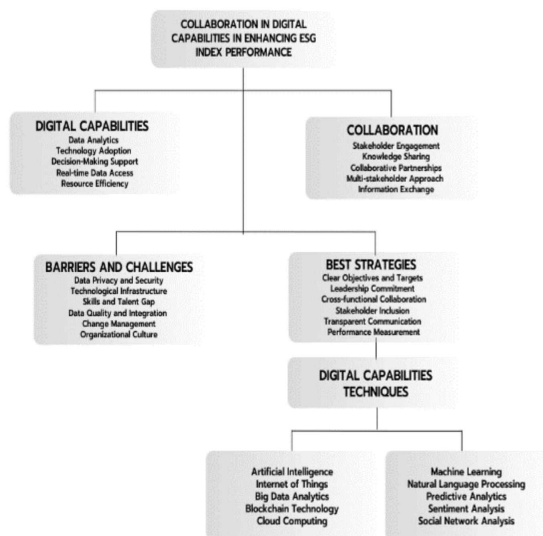


Figure 2. Conceptual Map of Previous Research on Collaboration and Digital Capabilities in Enhancing ESG Index Performance

Two main sections emerge based on research questions. Challenges in ESG implementation include regulatory complexity, culture change resistance, and measurement framework absence. Proactive engagement mitigates regulatory risks (Bansal & Song, 2017). Cultural transformation is crucial, requiring leadership commitment and integration (Bassen & Kovacs, 2018; Khan et al., 2019). Standardized measurement absence complicates ESG performance communication (Khan et al., 2019). Voluntary frameworks like GRI, SASB, and TCFD address this (Bassen & Kovacs, 2018; Grewal et al., 2020). Stakeholder engagement challenges hamper sustainability efforts (Linnenluecke et al., 2016). Partnerships and processes aid engagement (Grewal et al., 2020). SMEs face resource constraints. Despite this,

prioritizing ESG yields benefits (Grewal et al., 2020). Addressing trade-offs requires navigating economic, social, and environmental goals (Linnenluecke et al., 2016). No global ESG reporting framework exists, but voluntary frameworks guide disclosure (Bassen & Kovacs, 2018).

Review subtopics include leadership commitment, stakeholder engagement, supply chain management, AI, big data analytics, blockchain, sustainability assessment, and data visualization. Leadership commitment and stakeholder engagement are pivotal (Bassen & Kovacs, 2018). ESG metrics in evaluation, supply chain, and innovation are crucial (Bassen & Kovacs, 2018). AI, data analytics, and blockchain enhance transparency (Lee & Pae, 2019). Sustainability assessment and data visualization aid decision-making. These subtopics can be organized into two main sections based on 2 sub-research questions.

The findings provide insights into strategies, challenges, and best practices in digital capabilities and ESG performance. Future research can delve deeper into digital capabilities' mechanisms and impacts on ESG performance, advancing sustainable business practices in the digital era.

Table 2. Potential Sub-Topics	
Organizations leverage digital capabilities and collaboration to enhance their ESG index performance	
Sub-Research Question 1: Barriers to Challenges in Implementing Effective ESG Management	Sub-Research Question 2: Strategies for Integrating digital capabilities and Collaboration for Improving ESG index performance
Subtopic 1: Regulatory Compliance and Reporting Standards.	Subtopic 1: Board Commitment and Leadership in Driving ESG Integration.
Subtopic 2: Overcoming Resistance to Change and Shifting Organizational Culture.	Subtopic 2: Embedding ESG in Corporate Governance Structures and Practices.
Subtopic 3: Data Collection and Quality Assurance for ESG Metrics.	Subtopic 3: Collaborative Partnerships and Stakeholder Engagement for ESG Initiatives.
Subtopic 4: Stakeholder Engagement and Communication Strategies.	Subtopic 4: Utilizing Artificial Intelligence and Machine Learning in ESG Analysis.
Subtopic 5: Resource Allocation and Financial Considerations for ESG Integration.	Subtopic 5: Big Data Analytics for Enhanced ESG Performance Monitoring.
Subtopic 6: Balancing ESG Trade-offs and Complexities in Decision-making.	Subtopic 6: Blockchain Technology for Transparency and Accountability in ESG Reporting.
	Subtopic 7: Sustainability Assessment Tools and Software for ESG Decision-making.
	Subtopic 8: Leveraging Remote Sensing and Satellite Imagery for Environmental Monitoring.
	Subtopic 9: Effective Data Visualization and Reporting Platforms for ESG Communication.

6. Applying the IePeO Framework for Discussion and Synthesis

In our systematic literature review, we utilize the IePeO framework which provides a structured and comprehensive approach for analyzing and

presenting our research findings. The IePeO framework helps us organize our review by focusing on different aspects of the research process: Input, Process, and Output. In several studies of the management discipline, this paradigm has been used as a crucial basis (see Simsek, 2009; Ghezzi et al., 2017). Identification of the phenomena under study's input and output variables is helpful. The IePeO framework's primary elements were taken from research on process models. A recent literature review study on crowdsourcing uses the framework to examine and analyze the literature (Ghezzi et al., 2017). Through a comprehensive review of previous literature, we identified key elements associated with each factor of the IePeO framework. These elements represent important considerations that have been extensively discussed and explored in various scholarly works. By examining the existing research, we have gained valuable insights into the current state of knowledge, identified gaps and areas for further investigation, and developed a deeper understanding of the factors that contribute to collaboration in digital capabilities and its impact on ESG index performance. This synthesis of literature provides a solid foundation for our review paper, allowing us to build upon existing

leverage digital capabilities, overcome barriers and challenges, and implement strategies to drive sustainable outcomes.

One important input factor highlighted in the literature is the allocation of financial, human, and technological resources. Organizations need to invest in sustainability initiatives and allocate sufficient funds to support ESG management practices. This includes training and development programs for employees to enhance their understanding of ESG principles, frameworks, and regulations. The establishment of robust data analytics capabilities is also crucial, as organizations require suitable technology infrastructure for data collection, analysis, and reporting systems to measure and monitor their ESG performance. Engagement with stakeholders is another critical input factor emphasized in previous studies. Organizations need to establish effective communication channels and mechanisms to gather feedback, address concerns, and align stakeholder interests with ESG goals. Collaboration with external entities, such as industry associations, NGOs, and government agencies, can provide valuable support and resources in implementing ESG practices. Partnerships can facilitate knowledge sharing, access to specialized expertise, and joint initiatives to overcome barriers and achieve ESG objectives. Furthermore, the adoption of emerging technologies and data analytics techniques is a key input factor discussed in the literature. Organizations need to invest in suitable technological infrastructure to leverage digital capabilities for ESG index performance. This includes data collection, analysis, and reporting systems to effectively measure and monitor ESG performance. By harnessing these technologies, organizations can gain valuable insights and make data-driven decisions to drive sustainable outcomes.

By considering these input factors, such as financial, human, and technological resources, stakeholder engagement and collaboration, and the adoption of emerging technologies, organizations can enhance their ESG index performance and achieve sustainable outcomes. These input factors have been discussed in previous literature and provide valuable insights for organizations seeking to leverage digital capabilities in their ESG management practices.

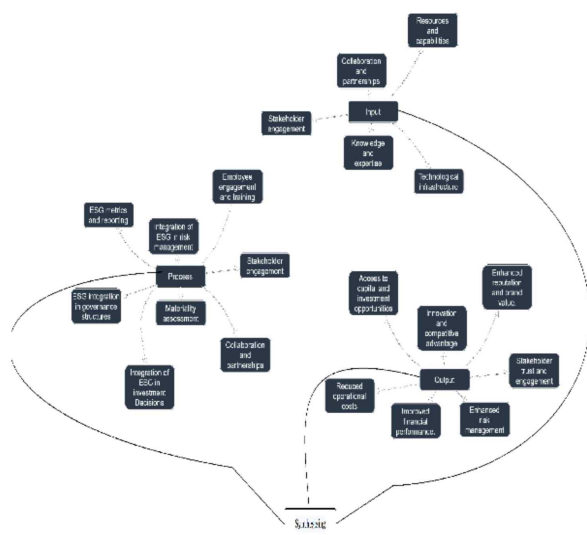


Figure 3. Application of IePeO Framework

research and contribute to the advancement of knowledge in this field. The following Figure 3 shows the elements of the 3 factors of the IePeO framework.

7. Input Factor

In the context of the IePeO framework, the "input" factor refers to the necessary resources, materials, and capabilities discussed in previous literature. These are essential for organizations to effectively

8. Process

The "Process" factor of the IePeO framework, encompasses the systematic steps and activities discussed in previous literature. These steps and activities are crucial for organizations to effectively leverage digital capabilities, address

barriers and challenges, and drive improved ESG index performance and sustainable outcomes. One important process highlighted in the literature is stakeholder engagement. Organizations actively engage with a wide range of stakeholders, including investors, customers, employees, and communities, to understand their expectations and incorporate their perspectives into ESG decision-making. This involvement ensures that ESG considerations align with stakeholder interests and helps build stronger relationships based on transparency and shared values.

Another key process emphasized in previous studies is the integration of ESG factors into various aspects of business operations. This includes conducting materiality assessments to identify the most significant ESG issues and prioritize action areas. Establishing dedicated governance structures, such as sustainability committees or board-level oversight, ensures that ESG considerations are integrated into the overall corporate governance framework. Robust ESG metrics and reporting frameworks enable organizations to measure, monitor, and disclose their ESG performance, promoting transparency and accountability. Collaboration with external stakeholders is also a critical process discussed in the literature. By partnering with industry associations, NGOs, and academic institutions, organizations can leverage collective knowledge and resources to address ESG challenges and drive innovation. This collaboration fosters the exchange of ideas, expertise, and best practices, ultimately enhancing the organization's ability to integrate digital capabilities and achieve improved ESG index performance.

9. Output Factor

Finally, the "Output" factor refers to the outcomes and impacts discussed in previous literature. These outcomes highlight the positive effects of effective ESG management practices and collaboration in digital capabilities on organizations. One significant output identified in the literature is the enhancement of organizational reputation and brand value. Organizations that effectively integrate ESG considerations into their decision-making processes can build a positive reputation and attract stakeholders who prioritize sustainability and responsible business practices. This positive perception can lead to increased investor interest, customer loyalty, and overall brand value.

Financial performance is another crucial output discussed in previous studies. Research indicates a positive correlation between strong ESG performance and financial performance. Organizations that successfully leverage digital

capabilities and collaborate in ESG management practices have the potential to achieve long-term financial sustainability and outperform their peers. Integrating ESG factors into strategies and operations can also lead to cost savings, operational efficiencies, and risk mitigation, contributing to improved financial outcomes. Furthermore, effective ESG management practices and collaboration with digital capabilities have broader societal and environmental impacts. These include fostering stakeholder engagement, building trust, and driving innovation. By actively managing ESG risks and demonstrating a commitment to sustainability, organizations can strengthen relationships with stakeholders, including employees, customers, communities, and regulators. Moreover, the integration of ESG considerations often sparks innovation, enabling organizations to develop new products, services, and business models that align with sustainability trends and capture market opportunities.

10. Limitations

While this comprehensive systematic literature review sheds valuable light on the pivotal role of collaboration in digital capabilities for enhancing Environmental, Social, and Governance (ESG) index performance, it is imperative to acknowledge certain limitations that warrant consideration for future research and practical implementation.

Scope and Generalizability: This review encompasses a diverse range of industries and organizational sizes; however, the extent of its applicability across varying sectors and contexts demands further exploration. Different industries might possess unique challenges and dynamics that influence the integration of digital capabilities and collaboration for ESG index performance.

Practical Implementation: While the review underscores the strategic significance of digital collaboration platforms and emerging technologies, it must be acknowledged that implementing these solutions requires comprehensive planning, resource allocation, and change management. Practical barriers to successful implementation, such as cultural resistance, resource constraints, and technology adoption challenges, necessitate deeper investigation.

Data Privacy and Security: The integration of digital capabilities and data analytics raises concerns related to data privacy and security. As organizations gather and analyze sensitive ESG-related data, ensuring compliance with stringent data protection regulations and safeguarding against cyber threats becomes paramount. A more thorough examination of data privacy implications and effective mitigation strategies is crucial.

Contextual Specificity of Collaboration: The effectiveness of collaboration in digital capabilities may vary across different industries, regions, and stakeholder ecosystems. Collaborative efforts that thrive in one context might not seamlessly translate to another due to contextual nuances. Future research should explore how organizations can tailor collaborative approaches to suit diverse contexts.

Human-AI Balance: The review briefly touches upon the role of artificial intelligence and big data analytics in ESG management, but delving deeper into the delicate balance between human expertise and AI-driven insights remains an unexplored avenue. Achieving optimal synergy between human judgment and AI algorithms while addressing ethical concerns requires further investigation.

Deeper Understanding of AI, Big-data Analytics for ESG Management: While acknowledging the potential of AI and big-data analytics in ESG management, this review does not extensively delve into the intricacies of these technologies. A more comprehensive analysis of how these technologies can enhance data accuracy, prediction capabilities, and decision-making processes within the realm of ESG management is essential.

In conclusion, this systematic literature review lays a strong foundation for understanding collaboration in digital capabilities' impact on ESG index performance. Nonetheless, the limitations outlined herein serve as guiding points for future research endeavors, providing directions for refining implementation strategies, addressing data security concerns, adapting collaborative approaches, achieving human-AI harmony, and deepening our insights into AI and big data analytics within ESG management.

11. Conclusions & Research Suggestions

Future research can explore the contextual factors that influence the integration of ESG practices in organizations, specifically focusing on the impact of digital capabilities and collaboration. This includes investigating the barriers and challenges faced by organizations of different sizes, industries, and regions in leveraging digital capabilities to enhance their ESG index performance. By examining these factors, researchers can gain insights into how organizations can effectively navigate and overcome the challenges associated with integrating digital capabilities for ESG purposes. Besides, after analyzing the related literature we found the following unexplored area that needs to be addressed.

An unexplored research area within ESG index

performance is the examination of the reliability and credibility of measurements used to assess sustainability performance. Research should critically assess the methodologies and data sources employed, investigating their accuracy and potential biases. Furthermore, integrating modern technologies like AI, blockchain, and cloud computing in ESG measurement tools could enhance the accuracy, efficiency, and transparency of data collection, analysis, and reporting. Exploring the potential benefits and challenges associated with leveraging these technologies would provide valuable insights into their feasibility and impact on ESG index performance. Another important research area focuses on enhancing collaboration among academic researchers and promoting international cooperation within the ESG field. Investigating strategies, platforms, and frameworks that facilitate knowledge sharing and interdisciplinary collaborations would enable scholars to address sustainability challenges more effectively. Additionally, understanding the barriers, opportunities, and mechanisms for cross-border cooperation among organizations, policymakers, and stakeholders is crucial for addressing global sustainability challenges. Fostered international partnerships and knowledge exchange would contribute to a more holistic and coordinated approach to ESG index performance across different regions and industries. Furthermore, exploring the integration of human expertise with digital capabilities in ESG analysis, decision-making, and strategy formulation would provide valuable insights into optimizing the balance between human judgment and automated systems, ultimately leading to enhanced sustainability outcomes.

Role of Digital Collaboration Platforms and Emerging Technologies: An unexplored area of research focuses on the role of digital collaboration platforms and emerging technologies in enhancing stakeholder engagement and knowledge sharing for improved ESG index performance. This research aims to investigate how organizations can effectively leverage these platforms to facilitate the exchange of information, diverse perspectives, and collaborative decision-making processes, ultimately leading to more effective sustainability strategies and improved ESG index performance.

Measurement and Evaluation of Digital Capabilities and Collaboration: Another research area that requires attention is the measurement and evaluation of the impact of digital capabilities and collaboration on ESG index performance. While previous studies have shown a positive relationship between digital capabilities and ESG outcomes, further research is needed to develop comprehensive measurement frameworks and

metrics that accurately capture the true impact of digital capabilities and collaboration on ESG index performance. This research will contribute to a better understanding of how organizations can assess and track the effectiveness of their digital initiatives in achieving sustainable outcomes.

Collaboration between Organizations and Employees: In addition to the above research questions, it is crucial to explore how organizations can collaborate with other organizations or enable employees to collaborate with external stakeholders. This aspect emphasizes the importance of partnerships, knowledge sharing, and collective action in driving better ESG index performance. Investigating the mechanisms and strategies for effective collaboration between organizations and external entities will shed light on how organizations can leverage collective efforts to address sustainability challenges and improve their ESG performance.

Addressing these unexplored research areas will provide valuable insights into the role of digital capabilities, collaboration, and partnerships in driving improved ESG index performance. By exploring specific mechanisms, developing measurement frameworks, and considering collaboration between organizations and employees, future studies can contribute to a deeper understanding of how organizations can navigate the digital landscape and achieve sustainable outcomes in a rapidly evolving world. Overall, this comprehensive review provides valuable insights, identifies knowledge gaps, and sets the stage for future research in sustainable business practices in the digital era.

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