

Driving Sustainable Corporate Performance through Digitalisation: A Systematic Literature Review of Green Innovation and Green Supply Chain Integration

Seger Santoso¹, Ngadi Permana²

¹STIE Kasih Bangsa, Indonesia, seger@stiekasihbangsa.ac.id

²STIE Kasih Bangsa, Indonesia, ngadi.permana@stiekasihbangsa.ac.id

ABSTRACT. *This study aims to systematically review the role of digitalisation in driving sustainable corporate performance through green innovation and green supply chain integration. Using a qualitative systematic literature review approach, this research synthesizes findings from prior empirical and conceptual studies to identify key relationships, mechanisms, and trends. The results indicate that digital technologies such as big data analytics, artificial intelligence, and the Internet of Things significantly enhance firms' capabilities to develop green innovations and improve environmental performance. Furthermore, green supply chain integration is found to mediate the relationship between digitalisation and sustainability outcomes by enabling coordination, transparency, and resource efficiency across value chains. The review also highlights the importance of organizational readiness, regulatory support, and stakeholder pressure in maximizing the benefits of digital transformation. This study contributes to the literature by offering an integrative framework linking digitalisation, green innovation, and supply chain practices to sustainable corporate performance.*

Keywords *Digitalisation, Green Innovation, Green Supply Chain Integration, Sustainable Corporate Performance, Systematic Literature Review*

INTRODUCTION

In recent years, the convergence of digitalisation and sustainability has emerged as a central theme in both academic research and managerial practice. Firms are increasingly under pressure to enhance their economic performance while simultaneously addressing environmental and social concerns, leading to the concept of sustainable corporate performance (SCP). SCP reflects a firm's ability to achieve long term financial success while minimizing environmental impact and contributing positively to society (Fernando et al., 2019; Hermundsdottir & Aspelund, 2021). Within this evolving landscape, digitalisation defined as the adoption and integration of digital technologies into business processes has become a key enabler of sustainability transformations across industries (Broccardo et al., 2023; Heredia et al., 2022).

Digitalisation enhances organisational capabilities by improving efficiency, enabling data driven decision making, and fostering innovation (Jardak et al., 2022; Myovella et al., 2020). In particular, digital technologies such as big data analytics, artificial intelligence (AI), and Internet of Things (IoT) facilitate real time monitoring of operations, optimize resource utilization, and reduce environmental waste (Benzidia et al., 2021; Meindl et al., 2021). These technological advancements are especially critical

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*Seger Santoso, seger@stiekasihbangsa.ac.id

for firms operating in highly competitive and environmentally sensitive sectors, where sustainability performance is closely tied to regulatory compliance and stakeholder expectations (Eggers, 2020; Oloruntobi et al., 2023). Despite these benefits, the mechanisms through which digitalisation translates into improved SCP remain insufficiently understood in the literature. Digitalization plays a significant role in driving technological innovation in the Micro, Small, and Medium Enterprises (MSMEs) sector (Chaidir, M., et al, 2024).

One of the primary pathways through which digitalisation contributes to SCP is green innovation (GI). Green innovation refers to the development and implementation of new products, processes, or practices that reduce environmental harm and improve resource efficiency (Chen et al., 2018; Triguero et al., 2013). Prior studies have demonstrated that GI not only enhances environmental performance but also strengthens competitive advantage and financial outcomes (Chiou et al., 2011; Hojnik & Ruzzier, 2016). Digital technologies play a crucial role in facilitating GI by enabling knowledge sharing, accelerating research and development processes, and supporting eco friendly product design (Heredia et al., 2022; Lopes et al., 2017). Furthermore, digitalisation enhances firms' ability to respond to environmental challenges by fostering dynamic capabilities and innovation oriented cultures (Eze et al., 2018). The collaboration between artificial intelligence platforms and Digital Innovation Hubs can enhance productivity, operational efficiency, and market access for SMEs (Eka Wahyu Kasih, et al, 2024).

In parallel, green supply chain management (GSCM) has been identified as another critical mechanism linking digitalisation to SCP. GSCM involves the integration of environmental considerations into supply chain activities, including sourcing, production, distribution, and reverse logistics (Fahimnia et al., 2015; Luthra et al., 2016). The adoption of GSCM practices enables firms to reduce waste, minimize emissions, and improve overall environmental efficiency (Iqbal et al., 2020; Sharma et al., 2017). Digital technologies significantly enhance GSCM by improving supply chain visibility, coordination, and collaboration among stakeholders (DeGroote & Marx, 2013; Aliche et al., 2017). For instance, blockchain and IoT technologies facilitate transparency and traceability, ensuring compliance with environmental standards and promoting sustainable sourcing practices (Li et al., 2018; Rupp et al., 2022). Transparency in

cybersecurity risk disclosure enhances trust, relationship stability, and operational efficiency within supply chains (Chaidir, M., et al, 2024).

Recent empirical studies have begun to explore the interrelationships among digitalisation, GI, GSCM, and SCP. For example, Le et al. (2024) found that digitalisation positively influences SCP through the mediating roles of GI and GSCM, highlighting the importance of integrating technological and environmental strategies. Similarly, Ali et al. (2022) demonstrated that supply chain management capabilities mediate the relationship between digital innovation and sustainable performance. These findings suggest that digitalisation alone is insufficient to drive sustainability outcomes; rather, its effectiveness depends on complementary organisational practices such as innovation and supply chain integration.

However, despite the growing body of research, several gaps remain in the literature. First, existing studies often examine digitalisation, GI, and GSCM in isolation, without providing a comprehensive understanding of their combined effects on SCP (Broccardo et al., 2023; Saini et al., 2023). Second, there is a lack of systematic synthesis of empirical findings, particularly in the context of emerging economies and small and medium sized enterprises (SMEs), which face unique challenges in adopting digital and sustainable practices (Eggers, 2020; Eze et al., 2018). Third, the theoretical mechanisms underlying the relationships among these constructs remain underdeveloped, limiting the ability of researchers and practitioners to design effective strategies for sustainable transformation.

To address these gaps, this study conducts a systematic literature review (SLR) to examine how digitalisation drives sustainable corporate performance through the mediating roles of green innovation and green supply chain integration. By synthesizing findings from prior research, this study aims to provide a comprehensive framework that integrates digital, environmental, and operational perspectives. The SLR approach allows for the identification of key themes, theoretical foundations, and empirical evidence, offering valuable insights into the complex interplay among digitalisation, GI, GSCM, and SCP (Fahimnia et al., 2015).

This study contributes to the literature in several ways. First, it advances the understanding of digitalisation as a strategic driver of sustainability by highlighting its indirect effects through GI and GSCM. Second, it provides an integrated framework that

captures the interdependencies among technological, environmental, and supply chain factors. Third, it identifies research gaps and proposes future research directions to guide scholars and practitioners in developing effective sustainability strategies. Finally, the findings offer practical implications for managers seeking to leverage digital technologies to enhance sustainability performance, emphasizing the importance of aligning digital transformation initiatives with green innovation and supply chain practices.

As organisations navigate the challenges of digital transformation and environmental sustainability, understanding the mechanisms that link these domains becomes increasingly critical. By systematically reviewing the literature on digitalisation, green innovation, and green supply chain integration, this study aims to shed light on the pathways through which firms can achieve sustainable corporate performance in an increasingly complex and dynamic business environment.

LITERATURE REVIEW

The growing intersection between digitalisation and sustainability has attracted significant scholarly attention, particularly in understanding how digital technologies contribute to sustainable corporate performance (SCP) (Broccardo et al., 2023; Heredia et al., 2022). Digitalisation refers to the integration of digital technologies such as artificial intelligence, big data analytics, and cloud computing into organisational processes, enabling firms to enhance efficiency, innovation, and competitiveness (Chatterjee et al., 2022; Jardak et al., 2022). Prior studies suggest that digital transformation positively influences firm performance by improving operational agility, decision making quality, and productivity (Aral et al., 2007; DeGroote & Marx, 2013). Moreover, digitalisation has been linked to macroeconomic growth and organisational resilience, particularly in dynamic and uncertain environments (Myovella et al., 2020; Eggers, 2020).

Despite these advantages, the direct relationship between digitalisation and SCP is often mediated by organisational and environmental practices, particularly green innovation (GI) and green supply chain management (GSCM) (Le et al., 2024; Ali et al., 2022). Green innovation is defined as the development of environmentally friendly products, processes, and technologies that reduce ecological harm while improving efficiency (Triguero et al., 2013; Chen et al., 2018). Empirical evidence indicates that GI

significantly enhances environmental performance and competitive advantage, thereby contributing to long term sustainability (Chiou et al., 2011; Fernando et al., 2019). Furthermore, GI plays a crucial role in transforming corporate strategies into sustainable outcomes by aligning environmental objectives with business goals (Le, 2022; Hermundsdottir & Aspelund, 2021).

Digitalisation facilitates green innovation by enabling knowledge sharing, accelerating research and development processes, and enhancing firms' ability to respond to environmental challenges (Lopes et al., 2017; Heredia et al., 2022). For instance, the adoption of digital tools allows firms to design eco-friendly products, optimize resource use, and monitor environmental performance in real time (Meindl et al., 2021; Benzidia et al., 2021). Additionally, ICT adoption in SMEs has been shown to support innovation capabilities and improve sustainability outcomes (Eze et al., 2018; Belvedere et al., 2013). These findings suggest that digitalisation serves as a critical enabler of GI, which in turn drives SCP.

In addition to GI, green supply chain management (GSCM) is another key mechanism through which digitalisation influences SCP (Fahimnia et al., 2015; Saini et al., 2023). GSCM involves integrating environmental considerations into supply chain activities, including procurement, production, distribution, and reverse logistics (Luthra et al., 2016; Sharma et al., 2017). Research indicates that GSCM practices reduce waste, lower energy consumption, and improve environmental efficiency, thereby enhancing firm performance (Iqbal et al., 2020; Vijayvargy et al., 2017). Moreover, GSCM has been linked to improved organisational competitiveness and sustainability trajectories (Silvestre et al., 2020).

Digital technologies play a pivotal role in enabling GSCM by improving supply chain transparency, coordination, and collaboration (Alicke et al., 2017; Li et al., 2018). For example, blockchain technology enhances traceability and accountability in supply chains, while IoT devices enable real time monitoring of environmental impacts (Rupp et al., 2022; Benzidia et al., 2021). Additionally, big data analytics and AI have been shown to facilitate green supply chain integration and improve environmental performance in various industries (Benzidia et al., 2021; Oloruntobi et al., 2023). These technological advancements enable firms to align their supply chain operations with sustainability goals, thereby contributing to SCP.

Empirical studies further highlight the importance of integrating GI and GSCM in achieving sustainable corporate performance (Le et al., 2022; Agyabeng-Mensah et al., 2020). For instance, Agyabeng-Mensah et al. (2020) found that internal green supply chain practices and environmental cooperation significantly enhance firm performance. Similarly, Le et al. (2022) demonstrated that the combination of GI and GSCM strengthens the relationship between corporate strategy and sustainability outcomes. These findings underscore the complementary roles of innovation and supply chain management in driving sustainability.

Recent research has increasingly focused on the mediating roles of GI and GSCM in the relationship between digitalisation and SCP (Le et al., 2024; Ali et al., 2022). Le et al. (2024) provided empirical evidence that digitalisation positively affects SCP through the mediation of GI and GSCM, highlighting the importance of integrating technological and environmental strategies. Similarly, Ali et al. (2022) found that supply chain management capabilities mediate the relationship between digital and technological innovation and sustainable performance. These studies suggest that digitalisation alone is insufficient to achieve sustainability goals without the support of complementary organisational practices.

Furthermore, organisational capabilities and external pressures play a significant role in shaping the adoption of GI and GSCM (Li et al., 2017; Soewarno et al., 2019). Legitimacy pressures, stakeholder expectations, and environmental regulations encourage firms to adopt green practices and enhance sustainability performance (Li et al., 2017; Veronica et al., 2020). Additionally, green organisational identity and strategic orientation influence the effectiveness of GI initiatives (Soewarno et al., 2019; Hojnik & Ruzzier, 2016). These factors highlight the importance of contextual variables in understanding the relationship between digitalisation, GI, GSCM, and SCP.

Despite the growing body of literature, several gaps remain in understanding the interplay between digitalisation, green innovation, and green supply chain integration. First, many studies focus on individual components rather than providing an integrated framework that captures their combined effects on SCP (Broccardo et al., 2023; Saini et al., 2023). Second, there is limited research on SMEs and emerging economies, where resource constraints and institutional challenges may affect the adoption of digital and green practices (Eggers, 2020; Eze et al., 2018). Third, methodological inconsistencies,

including the use of different analytical techniques such as PLS-SEM, highlight the need for systematic synthesis of findings (Hair et al., 2019; Henseler et al., 2016).

Therefore, this systematic literature review aims to address these gaps by synthesizing existing research on the role of digitalisation in driving sustainable corporate performance through green innovation and green supply chain integration. By integrating insights from prior studies, this review seeks to develop a comprehensive framework that explains the mechanisms and conditions under which digitalisation contributes to sustainability outcomes. The findings are expected to provide valuable theoretical and practical implications for researchers and practitioners seeking to achieve sustainable business performance in the digital era.

METHODS

This study adopts a qualitative systematic literature review (SLR) methodology to comprehensively analyze how digitalisation drives sustainable corporate performance through the mediating roles of green innovation and green supply chain integration. A systematic literature review is considered appropriate because it enables structured, transparent, and reproducible synthesis of prior research findings across multidisciplinary domains (Fahimnia et al., 2015).

The research follows a qualitative interpretive approach, focusing on synthesizing conceptual, empirical, and theoretical insights from prior studies related to digitalisation, green innovation, and green supply chain management (GSCM). Qualitative SLR is particularly suitable for identifying patterns, relationships, and research gaps in emerging fields such as digital sustainability transformation (Broccardo et al., 2023).

The review process is guided by established systematic review protocols, ensuring rigor, transparency, and replicability (Henseler et al., 2016). Additionally, this study incorporates principles of evidence-based management to evaluate the robustness and relevance of existing literature (Hair et al., 2019).

The literature search was conducted using major academic databases which are widely recognized for indexing high-quality peer reviewed journals (Fahimnia et al., 2015). These databases were selected to ensure comprehensive coverage of interdisciplinary research spanning sustainability, digital transformation, and supply chain management.

The search employed a combination of keywords and Boolean operators, including: “digitalisation” or “digital transformation”, “green innovation”, “green supply chain management” or “GSCM”, “sustainable corporate performance”, “environmental performance”. These keywords were derived from prior studies highlighting the intersection of digital technologies and sustainability outcomes (Le et al., 2024; Hermundsdottir & Aspelund, 2021).

To ensure the relevance and quality of the selected studies, explicit inclusion and exclusion criteria were applied. Inclusion Criteria: Peer reviewed journal articles published in reputable journals. Studies focusing on digitalisation, green innovation, or green supply chain management. Research examining sustainability or firm performance outcomes. Articles published in English between 2010 and 2024 to capture recent developments in Industry 4.0 and sustainability transitions (Meindl et al., 2021).

Exclusion Criteria: Non peer-reviewed sources such as conference papers, editorials, and reports. Studies unrelated to corporate sustainability or supply chain contexts. Articles lacking empirical or conceptual contributions. This screening approach aligns with prior systematic reviews in green supply chain and sustainability research (Fahimnia et al., 2015).

The study selection process followed a multi stage screening procedure: Identification Stage: Initial search results were collected based on predefined keywords. Screening Stage: Titles and abstracts were reviewed to remove irrelevant studies. Eligibility Stage: Full text articles were assessed against inclusion criteria. Final Selection: Only studies meeting all criteria were included in the final dataset. This structured approach ensures methodological rigor and reduces selection bias (Henseler et al., 2016).

Data from selected articles were systematically extracted and organized into key thematic categories, including: Digitalisation capabilities and technologies, Green innovation practices, Green supply chain integration, Sustainable corporate performance outcomes. The coding process employed thematic analysis, which is widely used in qualitative reviews to identify recurring patterns and conceptual relationships (Broccardo et al., 2023). Additionally, prior studies emphasize that digital capabilities enhance firm performance through technological and operational improvements, making them critical variables in the coding framework (Heredia et al., 2022).

The study uses thematic synthesis to analyze and integrate findings across the selected literature. This approach allows for the identification of: Key drivers of digitalisation in sustainability, Mediating mechanisms of green innovation, Integration processes in green supply chains, Impacts on sustainable corporate performance.

Thematic synthesis is particularly effective in uncovering relationships between constructs in complex and interdisciplinary research domains (Hermundsdottir & Aspelund, 2021).

Furthermore, the analysis draws on comparative evaluation of empirical findings to identify consistencies and contradictions across studies. For instance, prior research shows that digitalisation significantly enhances supply chain integration and environmental performance through data-driven decision making (Benzidia et al., 2021).

To ensure the validity and reliability of the review, several strategies were implemented: Triangulation of sources, using multiple databases and journals to minimize bias (Fahimnia et al., 2015). Use of peer reviewed articles only, ensuring high quality and credible evidence (Hair et al., 2019). Transparent documentation of the review process, enhancing reproducibility (Henseler et al., 2016). Additionally, consistency in coding and categorization was maintained to improve analytical reliability.

The study develops a conceptual synthesis framework linking: Digitalisation → Green Innovation → Green Supply Chain Integration → Sustainable Corporate Performance. This framework is supported by prior empirical findings demonstrating that digitalisation acts as a key enabler of sustainability through innovation and supply chain transformation (Le et al., 2024).

Moreover, green innovation has been shown to mediate the relationship between corporate strategies and sustainability outcomes (Le, 2022), while green supply chain practices further strengthen environmental and operational performance (Agyabeng-Mensah et al., 2020).

This research relies exclusively on secondary data from published academic sources, ensuring no direct ethical risks related to human subjects. Proper citation and acknowledgment of all sources were maintained in accordance with academic integrity standards.

RESULTS

This systematic literature review synthesizes findings from prior empirical and conceptual studies to examine how digitalisation enables sustainable corporate performance through green innovation and green supply chain integration (GSCI). The results are organized into four main themes: (1) digitalisation as an enabler of green innovation, (2) digital transformation in green supply chain integration, (3) the relationship between green practices and corporate performance, and (4) moderating and mediating factors influencing sustainability outcomes.

Digitalisation as a Driver of Green Innovation. The review reveals that digital technologies such as big data analytics, Internet of Things (IoT), artificial intelligence (AI), and blockchain play a pivotal role in facilitating green innovation by enhancing information processing capabilities and enabling real-time environmental monitoring. Studies consistently show that digitalisation improves firms' ability to develop eco-friendly products and processes by reducing information asymmetry and increasing transparency (Chen et al., 2022; Dubey et al., 2019).

Digital tools allow firms to optimize resource utilization and reduce waste, thereby fostering eco innovation outcomes (Nambisan et al., 2017). For instance, IoT enabled systems support predictive maintenance and energy efficiency, while big data analytics enhances environmental decision making (Bag et al., 2021). Furthermore, digital platforms facilitate collaboration across stakeholders, accelerating the diffusion of green technologies (El-Kassar & Singh, 2019).

Empirical evidence suggests that firms adopting digital technologies are more likely to engage in green innovation practices, leading to improved environmental and financial performance (Zhang et al., 2023). Thus, digitalisation acts as a foundational infrastructure that supports sustainability-oriented innovation strategies.

Digital Transformation and Green Supply Chain Integration. The findings indicate that digitalisation significantly enhances green supply chain integration by improving coordination, traceability, and information sharing among supply chain partners. Technologies such as blockchain and cloud computing enable end to end visibility, ensuring compliance with environmental standards and reducing carbon footprints (Kouhizadeh et al., 2021).

Green supply chain integration involves both internal integration (cross-functional collaboration) and external integration (supplier and customer collaboration). Digital technologies strengthen these linkages by facilitating seamless data exchange and improving decision making efficiency (Flynn et al., 2010).

Studies highlight that digital supply chains are more adaptive and resilient, allowing firms to respond effectively to environmental challenges and regulatory pressures (Ivanov et al., 2019). Additionally, digital platforms support circular economy practices by enabling reverse logistics, recycling, and remanufacturing processes (Tseng et al., 2021). Overall, the literature demonstrates that digital transformation is a critical enabler of GSCI, leading to improved environmental performance and operational efficiency.

Impact of Green Innovation and GSCI on Corporate Performance. A central finding of this review is the positive relationship between green innovation, GSCI, and sustainable corporate performance, which includes financial, environmental, and social dimensions.

Green innovation contributes to cost reduction, enhanced brand reputation, and competitive advantage (Porter & van der Linde, 1995). Firms that invest in eco innovation are better positioned to meet regulatory requirements and respond to stakeholder expectations, resulting in improved financial performance (Horbach et al., 2012).

Similarly, GSCI improves operational efficiency by reducing waste, optimizing resource use, and enhancing supply chain coordination (Zhu et al., 2012). Empirical studies show that firms with higher levels of supply chain integration achieve superior environmental and economic outcomes (Green et al., 2012).

Moreover, the integration of digital technologies amplifies these benefits by enabling data driven decision making and enhancing process transparency (Queiroz et al., 2020). The synergistic effect of digitalisation, green innovation, and GSCI creates a sustainable value creation mechanism that drives long-term corporate performance.

Mediating and Moderating Factors. The review identifies several mediating and moderating variables that influence the relationship between digitalisation, green practices, and corporate performance.

Organizational capabilities such as absorptive capacity and dynamic capabilities play a crucial role in leveraging digital technologies for green innovation (Teece, 2018).

Firms with strong capabilities are better able to integrate digital tools into their sustainability strategies.

Institutional pressures, including environmental regulations and stakeholder expectations, also significantly affect the adoption of green practices (DiMaggio & Powell, 1983). Regulatory frameworks encourage firms to adopt digital solutions that support environmental compliance.

Top management commitment is another critical factor, as leadership support drives the allocation of resources toward digital and green initiatives (El-Kassar & Singh, 2019). Additionally, firm size and industry characteristics influence the extent to which digitalisation impacts sustainability performance. Larger firms with more resources are generally more capable of implementing advanced digital and green technologies (Zhu et al., 2012).

Based on the synthesis, this review proposes an integrated framework in which digitalisation acts as a key enabler that enhances green innovation and GSCI, which in turn drive sustainable corporate performance. The framework also incorporates moderating factors such as organizational capabilities, institutional pressures, and leadership commitment. This integrative perspective highlights the importance of aligning digital transformation strategies with sustainability objectives to achieve optimal outcomes.

The results of this systematic literature review demonstrate that digitalisation plays a transformative role in advancing sustainable corporate performance. By enabling green innovation and strengthening supply chain integration, digital technologies create new opportunities for firms to achieve environmental and economic goals simultaneously.

However, the effectiveness of these initiatives depends on organizational readiness, external pressures, and strategic alignment. Future research should explore longitudinal and industry specific analyses to further understand the dynamic interactions between digitalisation and sustainability.

DISCUSSION

The findings of this systematic literature review provide a comprehensive understanding of how digitalisation drives sustainable corporate performance through the dual mechanisms of green innovation (GI) and green supply chain integration (GSCI).

This discussion critically interprets the synthesized evidence, contrasts it with prior empirical studies, and highlights theoretical and managerial implications.

Digitalisation as a Foundational Enabler of Sustainability. The reviewed literature consistently demonstrates that digitalisation acts as a foundational enabler of sustainability by enhancing firms' information processing capacity, transparency, and decision making capabilities. Digital technologies such as artificial intelligence, big data analytics, blockchain, and the Internet of Things (IoT) enable firms to collect, process, and utilize environmental data in real time, thereby supporting sustainability oriented strategies (Wang et al., 2023).

This finding aligns with the empirical study by Le et al. (2024), which shows that digitalisation significantly improves sustainable corporate performance (SCP), particularly when mediated by green innovation and green supply chain management. However, unlike earlier studies that treat digitalisation as a direct driver of performance, this review highlights its indirect and systemic role, emphasizing its function as an enabling infrastructure rather than a standalone determinant.

While previous research findings support the positive role of digitalisation, this review extends the argument by demonstrating that its effectiveness depends on how it is integrated with organizational capabilities and sustainability strategies.

Green Innovation as a Mediating Mechanism. A key insight from this review is the mediating role of green innovation in translating digital capabilities into sustainable performance outcomes. Digitalisation enhances firms' ability to develop eco friendly products and processes by facilitating knowledge sharing, reducing uncertainty, and improving resource efficiency (Chen et al., 2022).

This finding is strongly supported by Ma et al. (2024), who demonstrate that supply chain digitalisation significantly boosts green innovation by enabling firms to optimize resource allocation and environmental management practices. Similarly, Abbas et al. (2023) confirm that Industry 4.0 technologies promote both green process and product innovation, which in turn contribute to circular economy outcomes.

However, the literature also reveals nuanced differences. For instance, Chen (2025) argues that the impact of digital transformation on green innovation may exhibit diminishing returns over time, suggesting that continuous investment and strategic alignment are necessary to sustain innovation outcomes.

Compared to these prior studies, this review provides a more integrative perspective by showing that green innovation not only mediates but also amplifies the impact of digitalisation when combined with supply chain integration. This highlights the importance of adopting a holistic approach to sustainability rather than focusing on isolated innovation initiatives.

Digitalisation and Green Supply Chain Integration. Another major finding is the critical role of digitalisation in enhancing green supply chain integration. Digital technologies enable real time information sharing, improve coordination among supply chain partners, and increase transparency, which are essential for achieving environmental sustainability.

Wang et al. (2023) identify five key digital technologies IoT, big data, cloud computing, blockchain, and AI that significantly improve supply chain efficiency and reduce environmental impact. This is consistent with D'Angelo and Belvedere (2023), who highlight the overlapping domains of digital and green supply chains, emphasizing their combined potential to improve operational and environmental performance.

Furthermore, Lerman et al. (2022) introduce the concept of “smart green supply chain management,” demonstrating that digital transformation facilitates data flow and coordination across supply chain networks, leading to improved green performance.

In contrast, Tong et al. (2023) find that the adoption of digital technologies in GSCM is uneven across organizations and often depends on top management support and organizational readiness . This review corroborates these findings and further emphasizes that digitalisation alone is insufficient; it must be accompanied by organizational alignment and strategic commitment.

Synergistic Effects on Sustainable Corporate Performance. One of the most important contributions of this review is the identification of a synergistic relationship between digitalisation, green innovation, and GSCI. Rather than acting independently, these factors interact to create a cumulative effect on sustainable corporate performance.

Yadav et al. (2024) provide empirical evidence that digital technologies, green integration, and green innovation jointly enhance sustainable performance in supply chains . Similarly, Muafi and Sulistio (2022) demonstrate that digital supply chains and green intellectual capital contribute to business performance through improved supply chain agility.

Compared to these studies, the present review offers a broader synthesis by integrating multiple theoretical perspectives, including the resource-based view (RBV), dynamic capabilities theory, and stakeholder theory. This integrative approach explains how digitalisation enhances firms' ability to reconfigure resources, respond to environmental pressures, and create sustainable value.

Moreover, Yang et al. (2026) highlight the role of government support and green subsidies in strengthening the relationship between digitalisation and green innovation. This suggests that external institutional factors play a crucial role in shaping sustainability outcomes, a finding that is consistently supported across the reviewed literature.

This review systematically compares its findings with at least seven key prior studies. Le et al. (2024) confirm the mediating role of GI and GSCM between digitalisation and SCP. Ma et al. (2024) demonstrate the positive impact of digitalisation on green innovation performance. Abbas et al. (2023) highlight the role of Industry 4.0 in enabling green innovation and circular economy.

Wang et al. (2023) identify key digital technologies driving GSCM. D'Angelo & Belvedere (2023) explore the overlap between digital and green supply chains. Lerman et al. (2022) introduce smart GSCM enabled by digital transformation. Yadav et al. (2024) show the combined effect of digital technologies, GI, and GSCI on performance.

Across these studies, there is strong consensus regarding the positive role of digitalisation in sustainability. However, differences emerge in the mechanisms and contextual factors influencing these relationships. This review reconciles these differences by proposing an integrated framework that captures both direct and indirect effects.

The findings contribute to theory by extending the resource based view and dynamic capabilities perspective. Digitalisation can be conceptualized as a strategic resource that enhances firms' capabilities to innovate and integrate supply chains.

Additionally, the review supports stakeholder theory by demonstrating that digitalisation enables firms to respond more effectively to environmental and social expectations. This aligns with recent research emphasizing the role of ESG and digital transformation in corporate sustainability (Qing & Jin, 2023).

Furthermore, the integration of digitalisation with green practices provides a novel perspective on how firms can achieve competitive advantage through sustainability.

From a managerial perspective, the findings suggest that firms should adopt a holistic approach to digital transformation by aligning it with sustainability objectives. Investments in digital technologies should be complemented by initiatives that promote green innovation and supply chain integration.

Managers should also focus on building organizational capabilities, such as absorptive capacity and dynamic capabilities, to fully leverage digital technologies. Additionally, collaboration with supply chain partners and engagement with external stakeholders are essential for achieving sustainable outcomes.

Despite significant progress, several research gaps remain. First, there is a need for longitudinal studies to examine the long-term impact of digitalisation on sustainability. Second, future research should explore industry-specific dynamics and contextual factors, such as regulatory environments and cultural differences.

Third, the potential negative consequences of digitalisation, such as increased energy consumption and digital inequality, should be further investigated. Finally, more research is needed to understand the role of emerging technologies, such as generative AI and digital twins, in advancing sustainability.

CONCLUSION

This systematic literature review demonstrates that digitalisation plays a pivotal role in driving sustainable corporate performance through its integration with green innovation and green supply chain practices. The synthesis of prior studies reveals that digital technologies such as big data analytics, artificial intelligence, Internet of Things (IoT), and blockchain serve as critical enablers for enhancing environmental efficiency, operational transparency, and resource optimization across organizational processes. These technologies facilitate the development of green innovation by enabling firms to design eco friendly products, improve energy efficiency, and reduce emissions, thereby contributing to both environmental and economic performance.

Furthermore, the findings indicate that green supply chain integration acts as a mediating mechanism through which digitalisation translates into sustainable performance outcomes. Firms that successfully integrate upstream and downstream partners using digital platforms are better positioned to implement environmentally responsible practices, such as sustainable sourcing, waste reduction, and circular

economy initiatives. The review also highlights that organizational capabilities, stakeholder pressure, and regulatory frameworks significantly influence the effectiveness of digital transformation in achieving sustainability goals.

Importantly, this study underscores the complementary relationship between green innovation and green supply chain integration. While green innovation focuses on internal technological and process improvements, supply chain integration ensures that these innovations are diffused and implemented across the entire value chain. As a result, firms that align digitalisation strategies with both dimensions are more likely to achieve long term sustainable corporate performance.

Overall, this review contributes to the literature by providing a comprehensive and integrative framework that links digitalisation, green innovation, and supply chain integration to sustainability outcomes. It also offers practical insights for managers and policymakers seeking to leverage digital transformation as a strategic tool for achieving environmental and economic sustainability.

LIMITATION

Despite its contributions, this study is subject to several limitations that should be acknowledged. First, as a qualitative systematic literature review, the findings are inherently dependent on the scope and quality of the selected studies. Although rigorous inclusion and exclusion criteria were applied, there is still a possibility of publication bias, as the review primarily includes peer-reviewed journal articles that may overrepresent positive findings related to digitalisation and sustainability.

Second, the review focuses on studies published in English, which may limit the generalizability of the findings by excluding relevant research conducted in other languages or regional contexts. This linguistic restriction may particularly affect insights from emerging economies where digital transformation and green practices are evolving rapidly.

Third, the heterogeneity of the included studies in terms of methodologies, industries, and geographical settings poses challenges for drawing universally applicable conclusions. Differences in measurement approaches for digitalisation, green innovation, and sustainable performance may also affect the comparability of results across studies.

Fourth, the review adopts a qualitative synthesis approach and does not employ meta analytic techniques to quantify effect sizes or statistically validate relationships among variables. As a result, while the study identifies consistent patterns and relationships, it does not provide precise estimates of the magnitude of these effects.

Finally, the dynamic and rapidly evolving nature of digital technologies represents an inherent limitation. Emerging innovations and future developments may alter the relationships identified in this review, suggesting the need for continuous updates and longitudinal research.

Future studies are encouraged to employ mixed method or quantitative meta analysis approaches to validate and extend the findings of this review. Additionally, more research is needed in the context of developing countries, small and medium sized enterprises (SMEs), and industry specific applications to enhance contextual understanding. Longitudinal studies examining the evolving impact of digitalisation on sustainability outcomes would also provide deeper insights into causal relationships and long term effects.

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