Digital Transformation and ESG Finance: A Systematic Literature Review and Future Research Agenda

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Abstract

Digital transformation has become a strategic capability that enables organizations to enhance competitiveness, sustainability, and long term value creation, while Environmental, Social, and Governance (ESG) finance has emerged as an important framework for responsible investment and corporate sustainability. Despite the growing body of literature, existing studies remain fragmented across multiple disciplines and lack an integrated synthesis of emerging research trends, theoretical perspectives, and future research directions. Therefore, this study aims to systematically review the current literature on digital transformation and ESG finance to identify dominant research themes, theoretical foundations, methodological developments, and future research agenda. This study employed a Systematic Literature Review (SLR) following the PRISMA 2020 guideline. The literature search was conducted in the Scopus database, covering publications from January 2021 to June 2026. After applying predefined inclusion and exclusion criteria, 114 peer reviewed journal articles were selected for qualitative synthesis. The findings reveal that digital transformation has evolved beyond technological adoption into a strategic organizational capability that strengthens ESG implementation, sustainability reporting, corporate governance, green innovation, and sustainable finance. Artificial intelligence, blockchain, FinTech, and digital governance have emerged as key technologies supporting ESG performance and organizational resilience. The bibliometric analyses further indicate that digital transformation, ESG, sustainability, and artificial intelligence constitute the core intellectual structure of this research field, while generative artificial intelligence, stakeholder engagement, blockchain ecosystems, and green innovation represent promising directions for future research. This review contributes by integrating fragmented evidence into a comprehensive conceptual framework and providing practical insights and future research opportunities for scholars, practitioners, investors, and policymakers in advancing digitally enabled sustainable finance.

Keywords: Digital transformation, ESG finance, Sustainable finance, Artificial intelligence, Systematic literature review, PRISMA 2020

INTRODUCTION

Digital transformation has emerged as one of the most significant strategic developments shaping organizational competitiveness, corporate governance, and financial sustainability in the twenty-first century. The rapid diffusion of digital technologies, including artificial intelligence, big data analytics, blockchain, cloud computing, and financial technology, has fundamentally transformed how organizations create value, improve operational efficiency, and support strategic decision making. Consequently, digital transformation is no longer perceived merely as technological adoption but rather as an organizational capability that enables firms to respond effectively to dynamic market environments while strengthening innovation and long-term competitiveness (Chen et al., 2024).

Simultaneously, Environmental, Social, and Governance (ESG) has become an integral component of sustainable finance and corporate strategy. Increasing regulatory

pressure, stakeholder expectations, climate-related risks, and sustainable investment practices have encouraged organizations to incorporate ESG principles into financial decision-making and business operations. Investors increasingly consider ESG information alongside conventional financial indicators when evaluating firm performance, corporate resilience, and long-term value creation. This development has positioned ESG finance as one of the fastest-growing interdisciplinary research areas within finance, accounting, sustainability, and strategic management (Galeone et al., 2024).

Recent technological developments have further strengthened the relationship between digital transformation and ESG finance. Digital technologies improve the efficiency, transparency, and credibility of ESG reporting while facilitating sustainability disclosure, responsible investment, and environmental performance monitoring. Furthermore, digital transformation enhances organizational capabilities that support innovation, knowledge creation, and sustainability-oriented decision-making, thereby contributing to improved ESG performance and sustainable corporate development (Chen et al., 2023). Similarly, organizations that successfully integrate digital technologies into their strategic processes are increasingly capable of creating sustainable competitive advantages while simultaneously responding to environmental and social challenges (Ali et al., 2025).

The increasing convergence between digital transformation and ESG finance has stimulated considerable academic interest. Existing studies have examined various issues, including ESG disclosure, technological innovation, sustainable finance, digital governance, green finance, corporate sustainability, and artificial intelligence within financial systems. These studies collectively indicate that digital transformation has become an important enabler for sustainable finance by improving information quality, supporting corporate transparency, strengthening governance mechanisms, and facilitating responsible investment practices (Borrero-Domínguez et al., 2024). In addition, recent empirical evidence suggests that digital transformation contributes to higher ESG performance through improved technological capabilities and innovation capacity (Guo et al., 2026).

Although the existing literature has grown substantially, current knowledge remains fragmented. Most empirical studies investigate digital transformation, ESG performance, sustainable finance, green finance, and FinTech as independent research streams rather than examining their interaction through an integrated conceptual perspective. As a result, existing evidence primarily explains isolated relationships without providing a comprehensive understanding of how digital transformation creates value within ESG finance ecosystems (Cardillo & Basso, 2025). Moreover, the diversity of research contexts, analytical approaches, and theoretical perspectives has produced inconsistent findings regarding the mechanisms linking digital capability with sustainable financial performance.

Another important limitation concerns previous review studies. Existing literature reviews have predominantly employed bibliometric techniques that map publication trends, citation networks, and keyword co-occurrences. While these studies successfully illustrate the evolution of research topics, they provide limited theoretical synthesis explaining why digital transformation influences ESG finance and how different theoretical perspectives complement one another. Consequently, important theoretical issues regarding organizational capabilities, stakeholder relationships, institutional pressures, innovation processes, and sustainable value creation remain insufficiently integrated within a coherent

conceptual framework (Kozar & Bolimowski, 2025).

This limitation becomes increasingly important because emerging technologies continue to evolve rapidly. Artificial intelligence, generative AI, blockchain, digital governance, ERP systems, and intelligent financial platforms are continuously transforming corporate finance and sustainability practices. However, studies addressing these emerging technologies are dispersed across accounting, finance, innovation management, information systems, and sustainability literature, making it difficult to establish cumulative knowledge regarding their collective contribution to ESG finance (Chen & Perry, 2026).

Based on these observations, a comprehensive Systematic Literature Review is necessary to consolidate fragmented evidence and develop a more integrated understanding of digital transformation within ESG finance. Unlike previous reviews that primarily emphasize bibliometric mapping, this study synthesizes emerging research trends, dominant theoretical perspectives, methodological developments, and future research opportunities. Through this approach, the present study seeks to strengthen theoretical development while providing a comprehensive future research agenda for scholars, practitioners, regulators, and policymakers interested in advancing digitally enabled sustainable finance.

RESEARCH METHODOLOGY

This study employed a Systematic Literature Review (SLR) to systematically identify, evaluate, and synthesize previous studies concerning digital transformation and ESG finance. Page et al. (2021) emphasized that the PRISMA 2020 guideline provides a transparent and reproducible framework for conducting systematic reviews. Accordingly, this study adopted the PRISMA 2020 guideline to ensure methodological rigor, transparency, and consistency throughout the literature review process.

The review was designed to provide a comprehensive understanding of the evolution of digital transformation within the context of ESG finance by identifying emerging research trends, dominant theoretical perspectives, methodological developments, and future research opportunities. Following the recommendations of Page et al. (2021), the review process consisted of five sequential stages, namely research planning, literature identification, study screening, data extraction, and qualitative synthesis.

The primary literature search was conducted using the Scopus database because it provides comprehensive coverage of high-quality peer-reviewed journals in business, finance, accounting, sustainability, innovation management, and information systems. Cardillo and Basso (2025) demonstrated that Scopus has become one of the principal databases for systematic reviews investigating ESG-related topics. Therefore, Scopus was selected as the primary source of literature, while Google Scholar was employed as a complementary database to identify additional relevant studies.

The search strategy focused on publications discussing digital transformation and ESG finance together with related concepts, including sustainable finance, green finance, ESG disclosure, ESG performance, financial technology, artificial intelligence, blockchain, digital governance, and responsible investment. Galeone et al. (2024) highlighted the increasing integration of digital technologies within ESG and sustainable finance research, supporting the selection of these keywords. Boolean operators (AND and OR), phrase searching, and synonym combinations were applied to improve search

accuracy while minimizing irrelevant search results.

The primary search string employed in Scopus was:

TITLE-ABS-KEY (("Digital Transformation" OR Digitalization OR Digitalisation OR "Digital Innovation" OR "Digital Technology" OR "Artificial Intelligence" OR Blockchain OR FinTech) AND (ESG OR "ESG Finance" OR "Sustainable Finance" OR "Green Finance" OR "ESG Disclosure" OR "Responsible Investment"))

Only peer-reviewed journal articles published in English between 2020 and 2026 were included in this review because this period represents the rapid development of research concerning digital transformation and ESG finance. Following the PRISMA 2020 guideline proposed by Page et al. (2021), conference proceedings, editorials, book chapters, dissertations, duplicate publications, and articles lacking sufficient methodological information were excluded from the final review.

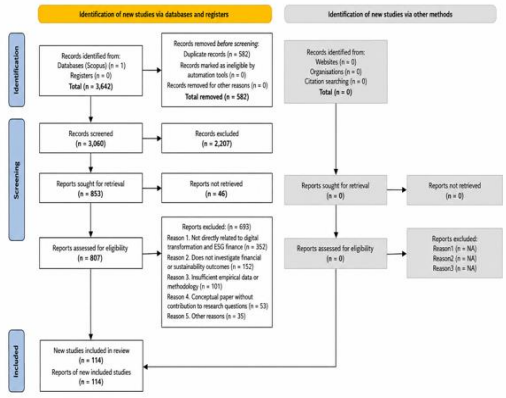
After completing the identification stage, duplicate records were removed before title and abstract screening was conducted. Subsequently, full-text assessment was performed to determine the conceptual relevance and methodological quality of each study. Page et al. (2021) recommended documenting every stage of article selection through the PRISMA flow diagram to improve transparency and reproducibility. Therefore, the complete article selection procedure was documented using the PRISMA 2020 flowchart.

A structured data extraction matrix was developed to systematically collect relevant information from every selected article. The extracted information included publication year, journal, country, research objectives, theoretical perspectives, research methodology, analytical techniques, digital technologies investigated, ESG dimensions, principal findings, and managerial implications. Kozar and Bolimowski (2025) demonstrated that systematic data extraction facilitates comparison across studies and enables the identification of dominant research themes within digital transformation and ESG research.

The selected articles were synthesized using qualitative thematic analysis. Rather than statistically aggregating empirical findings, this study compared previous evidence to identify recurring concepts, theoretical developments, methodological approaches, emerging research trends, and unresolved research gaps. Ali et al. (2025) suggested that qualitative synthesis provides a comprehensive understanding of rapidly evolving interdisciplinary topics, particularly those involving digital technologies and financial innovation.

Finally, only studies published in reputable peer-reviewed journals were synthesized to ensure the credibility and reliability of the review findings. Guo et al. (2026) indicated that recent research has increasingly emphasized the relationship between digital transformation and ESG performance, making contemporary peer-reviewed publications particularly important for developing an integrated understanding of digital transformation within ESG finance. Consequently, the final synthesis focused on high-quality studies that directly contributed to the objectives of this review.

Figure 1. PRISMA 2020 Flow Diagram for digital Transformation and ESG Finance: A Systematic Literature Review and Future Research Agenda



Study Selection Process

The study selection process followed the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA 2020) guideline proposed by Page et al. (2021). The selection procedure comprised four sequential stages, namely identification, screening, eligibility, and inclusion, to ensure transparency, methodological rigor, and reproducibility throughout the systematic review.

During the identification stage, a comprehensive literature search was conducted in the Scopus database on 28 June 2026, covering publications published between January 2021 and June 2026. The search strategy yielded 3,642 records. Since Scopus served as the sole source of literature, no additional records were identified through registers, websites, organizations, or citation searching. Subsequently, 582 duplicate records were removed before the screening process, leaving 3,060 unique records for further evaluation.

During the screening stage, the titles and abstracts of the 3,060 records were independently assessed to determine their relevance to the research objectives. Articles that did not address digital transformation, ESG finance, sustainability, or related digital technologies were excluded. As a result, 2,207 records were removed because they did not satisfy the predefined inclusion criteria. Consequently, 853 reports were sought for full-text retrieval, although 46 reports could not be accessed.

The eligibility stage involved a detailed assessment of the full texts of the remaining 807 studies. Each article was evaluated against the predefined inclusion and exclusion criteria. Following this assessment, 693 studies were excluded for several reasons. Specifically, 352 studies did not directly investigate the relationship between digital transformation and ESG finance, 152 studies did not examine financial or sustainability outcomes, 101 studies provided insufficient empirical evidence or methodological information, 53 conceptual papers did not contribute directly to the research objectives, and 35 studies were excluded for other methodological reasons.

Following the eligibility assessment, 114 studies fulfilled all inclusion criteria and were included in the final qualitative synthesis. These studies formed the evidence base for analysing emerging research trends, dominant theoretical perspectives, methodological developments, and future research directions in digital transformation and ESG finance. The complete study selection procedure in Figure 1.

RESULTS AND DISCUSSION

Figure 2. Co-occurrence Network of Author Keywords

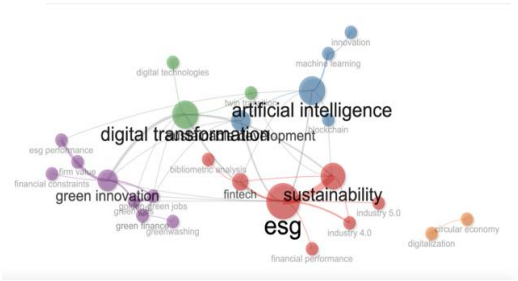


Figure 2 presents the co-occurrence network of author keywords generated using Bibliometrix to visualize the intellectual structure of research on digital transformation and ESG finance. In this network, each node represents an author keyword, whereas the size of the node indicates the frequency of keyword occurrence within the selected literature. The connecting lines represent the co-occurrence relationships between keywords, and different colors indicate distinct thematic clusters. Keywords with larger nodes and stronger interconnections represent the dominant research topics that have received substantial scholarly attention.

The network demonstrates that digital transformation, artificial intelligence, ESG, and sustainability are the most prominent keywords, indicating that these concepts constitute the core intellectual foundation of the current research landscape. Their large node sizes and extensive interconnections suggest that recent studies increasingly examine digital transformation as a strategic mechanism for improving environmental, social, and governance performance while simultaneously promoting sustainable development. The close proximity among these keywords further indicates that researchers frequently investigate them together rather than as independent research topics.

The blue cluster is primarily centered on artificial intelligence**,** which is closely connected with machine learning**,** innovation**,** blockchain, and digital transformation. This cluster suggests that advanced digital technologies have become increasingly important in supporting organizational innovation, intelligent decision-making, ESG reporting, and technology-enabled sustainable finance. The strong linkage between artificial intelligence and digital transformation also indicates a growing research interest in integrating intelligent technologies into sustainable business practices.

The green cluster is dominated by digital transformation, which is associated with digital technologies and sustainable development. This finding indicates that digital transformation is increasingly viewed not merely as technological adoption but as a strategic capability that enables organizations to improve operational efficiency, accelerate sustainability initiatives, and enhance long-term organizational resilience. The position of digital transformation at the center of the network further demonstrates its bridging role between technological innovation and ESG-related research.

The red cluster highlights ESG and sustainability as fundamental concepts within the existing literature. These keywords exhibit strong relationships with FinTech**,** Industry 4.0, and financial performance, indicating that sustainability research has expanded beyond environmental reporting to encompass digital financial innovation, industrial digitalization, and value creation. The close association between ESG and sustainability further confirms that these concepts continue to serve as the primary conceptual foundation of sustainable finance research.

The purple cluster is characterized by green innovation, which is connected with ESG performance**,** firm value**,** financial constraints**,** green jobs, and greenwashing. This cluster

illustrates that contemporary research increasingly examines how digital transformation contributes to environmentally sustainable innovation while simultaneously improving corporate performance and addressing financial and governance challenges. The emergence of greenwashing also suggests growing academic concern regarding the credibility and transparency of corporate ESG practices.

Several emerging keywords, including digital technologies**,** machine learning**,** innovation**,** blockchain, and FinTech, occupy intermediary positions connecting multiple thematic clusters. Their bridging roles indicate that these technologies are becoming interdisciplinary research topics linking digital transformation, ESG performance, sustainable finance, and corporate innovation. Such connections demonstrate that the research field is evolving from isolated technological applications toward integrated digital ecosystems supporting sustainable business development.

Overall, the co-occurrence network reveals that research on digital transformation and ESG finance has developed into an interdisciplinary knowledge domain integrating digital technologies, sustainability, corporate governance, innovation, and financial performance. The network further indicates that digital transformation functions as the central connecting concept linking emerging digital technologies with ESG oriented sustainable value creation. This finding supports the argument that future research should increasingly focus on interdisciplinary perspectives that integrate digital capability, artificial intelligence, sustainable finance, and corporate governance into a unified conceptual framework.

Figure 3. Thematic Map of Research on Digital Transformation and ESG Finance

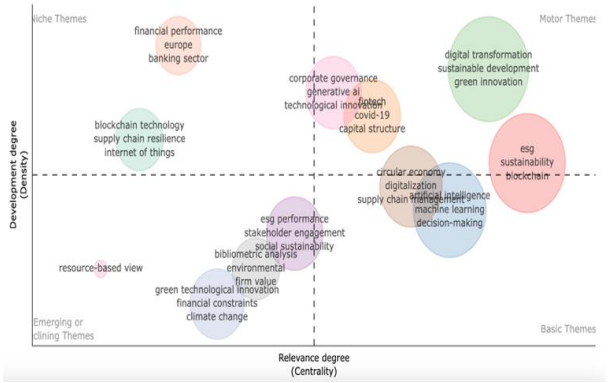


Figure 3 presents the thematic map generated using the Bibliometrix package to identify the conceptual structure and maturity of research themes related to digital transformation and ESG finance. The thematic map classifies research topics according to two dimensions, namely centrality (horizontal axis) and density (vertical axis). Centrality represents the degree of interaction between a theme and other research themes, indicating its overall importance within the research field. In contrast, density reflects the internal development and maturity of a particular theme. Based on these two dimensions, the thematic map categorizes research topics into four quadrants: Motor Themes**,** Basic Themes**,** Niche Themes, and Emerging or Declining Themes**.**

The Motor Themes, located in the upper-right quadrant, represent highly developed and strategically important research areas characterized by high centrality and high density. In the present study, digital transformation**,** sustainable development, and green innovation constitute the dominant motor themes. Their position indicates that these topics have become the principal drivers of contemporary research on digital transformation and ESG finance. The strong integration of these themes suggests that recent studies increasingly recognize digital transformation as a strategic capability that

enhances organizational sustainability, stimulates green innovation, and supports sustainable development. Their prominent location also reflects their extensive connections with other research domains, demonstrating that they play a central role in shaping the evolution of this interdisciplinary field.

The Basic Themes, located in the lower-right quadrant, represent fundamental concepts that possess high relevance but remain less developed internally. This quadrant includes ESG**,** sustainability, and blockchain, together with themes such as digitalization**,** artificial intelligence**,** machine learning**,** decision making**,** management**,** supply chain resilience, and circular economy. These findings indicate that ESG continues to function as the conceptual foundation of the research field, while emerging digital technologies increasingly support its implementation across organizational and financial contexts. Although these themes are highly connected to the overall research domain, they still offer substantial opportunities for theoretical refinement and empirical investigation, particularly regarding the integration of artificial intelligence and blockchain into ESG finance.

The Niche Themes, positioned in the upper-left quadrant, comprise highly developed but relatively specialized topics with limited interaction with the broader research field. The thematic map identifies financial performance**,** Europe**,** and the banking sector as niche themes. Their location suggests that existing studies have extensively investigated these topics within specific contexts; however, their influence on the broader development of digital transformation and ESG finance remains relatively limited. Similarly, blockchain technology**,** internet of things, and supply chain resilience appear as specialized technological themes that have matured within their respective domains but have not yet become central components of the wider ESG finance literature.

The Emerging or Declining Themes, located in the lower-left quadrant, include resource-based view**,** green technological innovation**,** climate change**,** financial constraints**,** firm value**,** environmental**,** social sustainability**,** stakeholder engagement, and ESG performance**.** Their position indicates that these themes are either in the early stages of development or currently experiencing limited scholarly attention relative to more established research areas. Nevertheless, several of these topics, particularly stakeholder engagement, ESG performance, climate change, and green technological innovation, possess considerable potential for future research because of increasing regulatory attention, technological advancement, and corporate sustainability commitments.

Another noteworthy observation concerns the intermediate themes positioned near the center of the thematic map, including corporate governance**,** generative AI**,** technological innovation**,** FinTech**,** COVID-19, and capital structure. Their proximity to the intersection of centrality and density suggests that these themes are transitioning toward greater conceptual maturity and may evolve into future motor themes. In particular, the emergence of generative AI highlights a rapidly developing research direction with significant implications for ESG reporting, intelligent decision-making, sustainability analytics, and digital financial systems.

Overall, the thematic map demonstrates that research on digital transformation and ESG finance is evolving toward an increasingly integrated interdisciplinary domain. The coexistence of mature themes such as digital transformation and sustainable development with emerging topics including generative AI, blockchain, stakeholder engagement, and ESG performance indicates that the research

field is expanding beyond traditional sustainability discussions toward technology-enabled sustainable finance ecosystems. These findings further reveal that future studies should emphasize interdisciplinary integration by combining digital technologies, corporate governance, artificial intelligence, innovation management, and ESG finance within more comprehensive theoretical frameworks.

Table 1. Characteristics of Selected Studies

Authors	Title	Country	Aim	Method	Key Findings	Journal
Chen et al. (2023)	ESG Disclosure and Technological Innovation ...	China	Examine the relationship between ESG disclosure and innovation capability	Quantitative	ESG disclosure strengthens technological innovation capability	Research in International Business and Finance
Galeone et al. (2024)	ESG and FinTech: Are They Connected ?	Italy	Explore the relationship between FinTech and ESG	Review	FinTech accelerates ESG implementation	Research in International Business and Finance
Guo et al. (2026)	Corporate Digital Transformation and ESG Performance	China	Investigate digital transformation and ESG performance	Quantitative	Digital transformation improves ESG performance	Journal of Innovation & Knowledge

He reviewed studies consistently indicate a substantial increase in scholarly attention toward the integration of digital transformation and ESG finance after 2021. Most empirical investigations originate from China and European countries, reflecting strong regulatory support for digitalization and sustainability. Furthermore, the literature demonstrates a gradual

transition from examining digital transformation solely as a technological capability toward recognizing its strategic role in facilitating ESG performance, sustainable finance, and responsible investment. Nevertheless, the existing literature remains concentrated in several regions, leaving emerging economies relatively underrepresented. This finding indicates the necessity for broader geographical coverage and comparative international studies.

DISCUSSION

According to van Noordt and Tangi (2023), digital transformation should not be viewed merely as technological adoption but as an organizational capability that enhances public value creation through artificial intelligence and data driven decision making. The findings of this systematic literature review are consistent with this perspective, indicating that digital transformation has become the primary driver of ESG finance by improving transparency, organizational resilience, and sustainability performance. The increasing integration of artificial intelligence, blockchain, big data analytics, and enterprise digital platforms demonstrates that digital technologies facilitate the implementation of ESG strategies while strengthening long-term organizational competitiveness.

Borrero Domínguez et al. (2024) argued that voluntary digital transformation disclosure has become increasingly important in improving corporate transparency and reducing information asymmetry. This review supports those findings by demonstrating that digital transformation enhances ESG disclosure quality through more reliable sustainability reporting, better stakeholder communication, and stronger corporate governance practices. Consequently, digital transformation contributes not only to operational efficiency but also to greater organizational legitimacy among investors and other stakeholders.

The relationship between digital transformation and green innovation is also evident throughout the reviewed literature. Almansour et al. (2026) found that ERP-enabled digital transformation significantly strengthens green innovation by improving organizational coordination, operational visibility, and sustainability verification processes. These findings support the Resource-Based View, suggesting that digital capabilities represent valuable organizational resources capable of generating sustainable competitive advantage through innovation and environmental performance.

The findings further indicate that artificial intelligence has emerged as one of the most influential technologies supporting ESG finance. As emphasized by van Noordt and Tangi (2023), successful AI implementation depends not only on technological infrastructure but also on organizational capability, leadership commitment, and governance quality. This review extends that perspective by highlighting that organizations integrating AI within broader digital transformation strategies are better positioned to improve ESG performance, manage sustainability risks, and strengthen strategic decision-making.

From a theoretical perspective, this review extends the Dynamic Capabilities Theory, Stakeholder Theory, and Resource-Based View by integrating digital transformation, ESG finance, and sustainability into a unified conceptual framework. Cardillo and Basso (2025)

emphasized that inconsistencies in previous ESG studies largely result from differences in research contexts, methodological approaches, and moderating variables. The present review contributes by synthesizing fragmented evidence into a comprehensive understanding of how digital capabilities create sustainable organizational value while simultaneously identifying promising directions for future interdisciplinary research.

CONCLUSION

This systematic literature review provides a comprehensive synthesis of the rapidly expanding body of knowledge on the relationship between digital transformation and Environmental, Social, and Governance (ESG) finance. By systematically reviewing the literature published between January 2021 and June 2026, this study demonstrates that digital transformation has evolved beyond a technological initiative to become a strategic capability that supports sustainable finance, corporate governance, and long-term organizational resilience. The review also identifies the dominant research themes, theoretical perspectives, methodological developments, and future research directions that characterize this interdisciplinary field.

The findings reveal that digital transformation, supported by artificial intelligence, big data analytics, blockchain, enterprise resource planning, cloud computing, and other Industry 4.0 technologies, plays a significant role in improving ESG implementation, sustainability reporting, corporate transparency, green innovation, and sustainable value creation. Compared with traditional perspectives that primarily viewed digitalization as a tool for operational efficiency, the reviewed evidence indicates that digital transformation functions as a strategic organizational capability that facilitates ESG integration across business processes, strengthens stakeholder engagement, and improves data-driven decision making. This finding challenges the conventional assumption that technological adoption alone is sufficient to improve sustainability performance, demonstrating instead that organizational capabilities, governance quality, and innovation readiness are equally important determinants of successful ESG transformation.

This review makes several important scientific contributions. First, it integrates fragmented evidence from the digital transformation, sustainable finance, corporate governance, and innovation literature into a comprehensive conceptual understanding of digitally enabled ESG finance. Second, the study confirms the continued relevance of Dynamic Capabilities Theory, Stakeholder Theory, Resource Based View, Institutional Theory, and Legitimacy Theory in explaining how organizations utilize digital technologies to create sustainable competitive advantage and long-term stakeholder value. Third, this review identifies emerging research themes, including artificial intelligence-driven ESG analytics, digital governance, green innovation, blockchain enabled transparency, and sustainable digital ecosystems, which significantly enrich current academic discussions. Finally, the proposed future research agenda provides a structured roadmap for scholars by highlighting opportunities for interdisciplinary collaboration, longitudinal investigations, comparative international studies, and the application of emerging digital technologies within ESG finance.

Despite these contributions, several limitations should be acknowledged. First, this review is limited to journal articles indexed in the Scopus database and published between January 2021 and June 2026. Consequently, potentially relevant studies indexed in other databases, such as Web of Science, Dimensions, or IEEE Xplore, were

not included. Second, although the PRISMA 2020 protocol ensured a rigorous and transparent study selection process, the review remains dependent on the quality, methodological rigor, and reporting practices of the included studies. Third, the literature remains geographically concentrated in developed economies, particularly Europe and China, limiting the generalizability of current evidence to developing countries and emerging markets. Finally, the rapid evolution of digital technologies, particularly generative artificial intelligence, digital twins, explainable artificial intelligence, and advanced ESG analytics, suggests that the knowledge base will continue to evolve beyond the review period.

Based on these limitations, several recommendations for future research are proposed. Future studies should expand literature searches across multiple international databases to improve the comprehensiveness of systematic reviews. Researchers are also encouraged to investigate the mediating and moderating mechanisms linking digital transformation, organizational capabilities, ESG performance, financial performance, and corporate governance through longitudinal and mixed-method research designs. Comparative studies across industries, institutional environments, and developed and emerging economies are necessary to improve external validity. Furthermore, future research should examine the implications of generative artificial intelligence, blockchain ecosystems, digital twins, Internet of Things, and advanced sustainability analytics for ESG finance, sustainable investment, and corporate resilience. These directions are expected to strengthen theoretical development while providing practical guidance for managers, investors, policymakers, and regulators seeking to accelerate digitally enabled sustainable finance and responsible business transformation.

RECOMMENDATION

Based on the findings of this systematic literature review, several recommendations are proposed for researchers, practitioners, policymakers, and investors. Future studies should expand the scope of systematic reviews by incorporating multiple international databases, such as Web of Science, Dimensions, IEEE Xplore, and ScienceDirect, to obtain a more comprehensive understanding of the relationship between digital transformation and ESG finance. Researchers are also encouraged to employ longitudinal, mixed method, and cross-country comparative research designs to investigate the dynamic relationships among digital transformation, organizational capabilities, ESG performance, financial performance, and corporate sustainability across different institutional settings.

For business practitioners, digital transformation should be viewed as a strategic organizational capability rather than merely a technological investment. Organizations are encouraged to integrate artificial intelligence, blockchain, big data analytics, enterprise resource planning (ERP), and digital governance systems into ESG management to improve sustainability reporting, operational transparency, stakeholder engagement, and long-term value creation.

For policymakers and regulators, the findings highlight the importance of developing comprehensive digital governance frameworks and ESG reporting standards that encourage the adoption of emerging digital technologies while ensuring transparency, accountability, and sustainability. Public policies supporting digital infrastructure, responsible artificial intelligence, and sustainable finance ecosystems will further strengthen the implementation of ESG practices across industries.

Finally, investors and financial institutions are encouraged to incorporate digital transformation capability as an additional consideration in ESG investment assessment. Firms with strong digital capabilities are more likely to enhance ESG performance, improve corporate resilience, and create sustainable long term value, thereby supporting more informed and responsible investment decisions.

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