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Mapping the Nexus Between Digital Leadership and Green Organizational Performance: A Systematic Literature Review and Bibliometric Analysis

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ABSTRACT

Objectives: *This study aims to examine the relationship between digital leadership and green organizational performance through a systematic literature review and bibliometric analysis. It seeks to identify research trends, thematic developments, and the strategic role of digital leadership in promoting sustainability-oriented organizational outcomes.*
Methodology: *This study employed a Systematic Literature Review (SLR) combined with bibliometric analysis. Relevant scientific articles were systematically selected from reputable databases based on publication quality and relevance to digital leadership, digital transformation, green innovation, and sustainable organizational performance. Qualitative synthesis and bibliometric mapping techniques were applied to analyze publication trends, research clusters, and collaboration patterns.*
Findings: *The synthesis indicates that digital leadership is conceptually associated with green organizational performance through two recurrent linking mechanisms digital transformation and green innovation. These mechanisms are interpreted from the reviewed literature rather than tested as statistical mediators. Bibliometric results show increasing scholarly interest and expanding thematic connections in this research domain.*
Conclusion: Digital leadership plays a strategic role in enhancing sustainable organizational performance and strengthening long-term competitiveness. This study contributes to academic discourse and offers practical insights for organizations integrating digital transformation with sustainability objectives.

Keywords: *Digital Leadership; Green Organizational Performance; Digital Transformation; Green Innovation; Bibliometric Analysis.*

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INTRODUCTION

The rapid advancement of digital technologies over recent decades has fundamentally reshaped how organizations operate, compete, and create value, making digital transformation no longer a strategic option but a fundamental necessity for survival in an increasingly dynamic global environment (Verhoef et al., 2021) At the same time, sustainability has become a critical global imperative, pressing organizations to integrate environmental and social objectives into their business models, resource management, and strategic decision-making (Bawa & Kansanga, 2026). At the intersection of these two forces, digital leadership has emerged as a pivotal capability for guiding organizations through transformation while simultaneously advancing green innovation and sustainable performance (Sacavém et al., 2025; Zada et al., 2025). How digital leadership contributes to green organizational performance is therefore significant both theoretically for advancing management scholarship and practically for helping organizations align digital transformation with sustainability strategies.

Empirical evidence underscores the scale and relevance of this problem. Digital transformation reshapes business models and generates new organizational value (Verhoef et al., 2021), strengthens organizational capabilities and continuous innovation (Wang, 2026) and serves as a key enabler of sustainable performance by improving resource efficiency and supporting environmentally friendly innovation (Chen et al., 2024). In parallel, green management practices and sustainable innovation significantly enhance environmental performance (Haile & Singh, 2026), while environmental transformational leadership positively influences employees' green behavior (Hadi, 2026). These findings confirm that the relationship between digital leadership and green organizational performance is both substantive and timely.

Existing studies offer useful but disconnected evidence: leadership research explains how executives guide technological change, digital-transformation research examines capability renewal, and sustainability research focuses on green innovation and environmental performance. The management problem is therefore not a lack of individual studies, but the absence of an integrated account of how leadership choices, digital capabilities, and environmental outcomes connect. This fragmentation limits managers' ability to translate digital investment into sustainability-oriented routines and limits scholars' ability to identify the intellectual structure of the field (Chen et al., 2024; Sacavém et al., 2025; Zada et al., 2025).

Accordingly, three gaps motivate this review. First, the literature on digital leadership and green organizational performance is scattered across management, information systems, innovation, and sustainability outlets. Second, the linking roles of digital transformation and green innovation remain conceptually ambiguous. Third, no focused bibliometric mapping has clarified the field's publication trajectory, thematic connections, and collaboration structure. Addressing these gaps is important to management because organizations must coordinate leadership capability, technology investment, and environmental performance rather than manage them as separate agendas.

Building on the above, this study positions digital leadership as the principal driver and green organizational performance as the focal outcome, with green innovation, digital transformation, and organizational sustainability as the interconnecting constructs synthesized from the literature. Accordingly, the study aims to map and analyze the relationship between digital leadership and green organizational performance through an integrated SLR and bibliometric approach, guided by three research questions:

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RQ1. To what extent has research on digital leadership and green organizational performance evolved and remained relevant in contemporary scholarly discourse?

RQ2. How are research themes, trends, and intellectual structures distributed within the literature on digital leadership and organizational sustainability?

RQ3. What theoretical insights and practical implications can be derived from this relationship to inform future research directions?

The remainder of this paper is organized as follows. The next section reviews the theoretical background on digital transformation, digital leadership, green innovation, and sustainable organizational performance. The subsequent section details the SLR and bibliometric methodology, including the search protocol, inclusion criteria, and analytical tools. The findings are then presented and discussed in relation to the three research questions, followed by theoretical and practical implications. The paper concludes by outlining limitations and avenues for future research.

LITERATURE REVIEW

Digital Leadership

Digital leadership has emerged as a critical organizational capability in navigating technological disruption and achieving sustainable competitiveness. Digital leadership refers to leadership practices that facilitate digital transformation, technological adaptation, and innovation through strategic vision, digital competencies, and organizational agility (Sacavém et al., 2025). Leaders in digitally transformed organizations are expected to integrate emerging technologies into managerial decision-making while fostering adaptive organizational cultures (Verhoef et al., 2021)

Previous studies indicate that digital leadership significantly contributes to organizational effectiveness and innovation performance. (Chen et al., 2024) argued that digital leadership capabilities drive sustainable business performance by enabling market-driven business model innovation. Similarly, (Sacavém et al., 2025)found that digital leadership enhances digital platform capability and business model innovation, particularly in start-up ecosystems. (Al-Ahmed et al., 2026) further highlighted that leadership characteristics, such as humility and adaptability, facilitate successful digital transformation processes.

Recent literature also emphasizes the role of digital leadership in promoting sustainability-oriented outcomes. (Kampilong et al., 2025; Zada et al., 2025) demonstrated that digital leadership positively influences firm sustainability through green innovation and top management innovativeness. Likewise, (Mollah et al., 2026) revealed that the synergy between digital leadership and artificial intelligence contributes significantly to sustainable organizational performance. Therefore, digital leadership can be considered a strategic mechanism for balancing technological advancement and sustainability goals.

Green Organizational Performance

Green organizational performance refers to an organization's ability to achieve economic objectives while minimizing environmental impact and promoting sustainability practices. It encompasses environmentally responsible operations, resource efficiency, waste reduction, and sustainable innovation (Haile & Singh, 2026)

Organizations increasingly adopt green management practices to improve environmental and operational performance.(Hadi, 2026) emphasized that environmental transformational leadership encourages employee green behavior through psychological mechanisms, ultimately

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improving sustainability outcomes. Similarly, (Rashed et al., 2026) found that green dynamic capabilities significantly influence sustainable green practices in manufacturing organizations.

Moreover, sustainable performance has become strongly associated with environmental adaptation and organizational resilience. (Zhang et al., 2023) suggested that digital transformation strengthens sustainable innovation and performance among SMEs by improving organizational adaptability and strategic technology utilization. (Kampilong et al., 2025) also argued that sustainable leadership innovation capability enhances organizational sustainability performance, particularly in complex industrial environments.

Thus, green organizational performance is increasingly viewed as a multidimensional construct that integrates economic growth, environmental responsibility, and long-term organizational resilience.

Digital Transformation and Green Innovation as Strategic Mediators

The relationship between digital leadership and green organizational performance is often mediated by digital transformation and green innovation. Digital transformation refers to organizational changes driven by digital technologies that reshape business models, operational systems, and strategic decision-making (Hanelt et al., 2021). Effective digital transformation enables organizations to achieve operational efficiency while supporting sustainability goals (Al-Ahmed et al., 2026).

Several studies reveal that digital transformation contributes significantly to green performance. (Wang, 2026) found that digital transformation accelerates green transition processes in port industries through efficiency improvements and environmental optimization. (Alabdali et al., 2025) demonstrated that algorithmic management and green technologies enhance supply chain resilience and sustainability.

Green innovation also plays a central role in strengthening sustainable performance. (George et al., 2020) emphasized that digital innovation contributes to climate change mitigation and sustainable development. Furthermore, (Zada et al., 2025) identified green innovation as an important mediating factor linking digital leadership to sustainability performance. Therefore, integrating digital transformation and green innovation allows organizations to maximize the strategic benefits of digital leadership in achieving green organizational performance.

The growing intersection between digital leadership and sustainability has become an increasingly important area of scholarly inquiry. Previous studies have extensively examined digital leadership as a driver of organizational digital transformation, innovation capability, and performance enhancement (Orkamo et al., 2025; Sacavém et al., 2025). Simultaneously, sustainability-oriented research has emphasized green organizational performance through environmental responsibility, green innovation, and sustainable operational systems (Haile & Singh, 2026; Kampilong et al., 2025).

Despite the increasing volume of publications, previous research remains fragmented. Existing studies generally focus on either digital leadership in technological transformation or green organizational performance in sustainability contexts separately. For example, (Chen et al., 2024) emphasized digital leadership capability in sustainable business performance through digital transformation, whereas (Zada et al., 2025) focused on green innovation as a mediating mechanism for firm sustainability. Likewise, (Wang, 2026) analyzed digital transformation in SMEs sustainability without comprehensively integrating digital leadership dimensions.

Furthermore, prior systematic literature reviews predominantly investigated digital transformation or leadership behavior independently(Alghfeli et al., 2024; Hanelt et al., 2021).

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Limited studies have systematically mapped the nexus between digital leadership and green organizational performance through an integrated Systematic Literature Review (SLR) combined with bibliometric analysis.

Therefore, the novelty of this study lies in providing a comprehensive synthesis of contemporary knowledge by identifying thematic evolution, collaboration networks, and conceptual relationships between digital leadership and green organizational performance. This research contributes by consolidating fragmented findings into an integrated conceptual understanding and identifying future research directions.

Theoretical Framework

This review uses four complementary theoretical lenses. Upper Echelons Theory explains why executives' digital knowledge, values, and strategic attention shape organizational priorities and resource-allocation choices (Hambrick & Mason, 1984). Resource-Based View and Dynamic Capabilities explain how digital resources become valuable only when leaders sense technological and environmental opportunities, seize them through investment and coordination, and reconfigure routines for sustainability (Barney, 1991; Teece et al., 1997). Natural Resource-Based View extends this logic by treating pollution prevention, product stewardship, and sustainable development capabilities as sources of competitive advantage, thereby connecting digital transformation to green innovation (Hart, 1995). Finally, the Triple Bottom Line frames green organizational performance as the joint pursuit of economic, environmental, and social value rather than a single environmental indicator (Elkington, 1997).

Together, these lenses support a conceptual synthesis framework: digital leadership provides strategic direction; dynamic capabilities enable technology-enabled organizational adaptation; the Natural Resource-Based View explains how that adaptation is converted into green innovation; and the Triple Bottom Line specifies the multidimensional performance outcome. Digital transformation and green innovation are therefore described as literature-derived linking mechanisms, not statistically tested mediators or causal effects. The bibliometric map identifies how these concepts co-occur, whereas the qualitative synthesis interprets why the relationships are theoretically plausible.

Figure 1. Conceptual Framework of the Relationship Between Digital Leadership and Green Organizational Performance

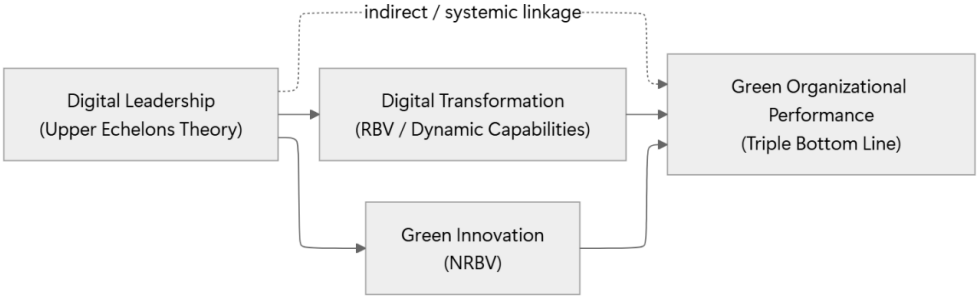


Figure 1 is a conceptual synthesis framework, not a causal model. Its arrows summarize recurring theoretical relationships in the reviewed studies. The terms "linking mechanisms" and "conceptual pathways" are used throughout because this review does not estimate direct, indirect, or mediation effects.

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The framework is interpreted as an indirect, systemic relationship: digital leadership influences green organizational performance through the mediating roles of digital transformation and green innovation an analytical lens for mapping the literature, not a causal model to be statistically tested.

This study combined a Systematic Literature Review (SLR) with bibliometric analysis. Scopus was used as the sole bibliographic database to ensure consistency between the search protocol, PRISMA flow, and exported records. The search was executed on March 20, 2026, covering publications from 2022 to March 20, 2026. An initial broad discovery search produced 12,731 records. To address the excessive breadth of that result, the search was refined in the TITLE-ABS-KEY fields using: ("digital leadership" OR "e-leadership" OR "technology leadership") AND ("green organizational performance" OR "green performance" OR sustainab* OR "green innovation") AND ("digital transformation" OR innovation OR performance). The refined query and field/date filters retained 1,116 records for screening.

Eligible documents were English-language, peer-reviewed journal articles in business, management, accounting, decision sciences, economics, or multidisciplinary sustainability fields, and had to address at least one explicit conceptual connection among digital leadership, digital transformation, green innovation, and organizational sustainability/performance. Conference papers, book chapters, reviews, books, notes, editorials, errata, non-English records, duplicates, and studies without a substantive organizational-level connection were excluded. Because a single Scopus export was used, duplicate removal was limited to checking repeated DOI, title, and author-year combinations. Screening was conducted in two stages: title/abstract screening followed by full-text eligibility assessment. The author team checked borderline cases and resolved disagreements by consensus. Methodological clarity, relevance to the research questions, peer-review status, and sufficient bibliographic metadata constituted the quality criteria.

The PRISMA arithmetic was reconciled as follows: 12,731 broad-search records minus 11,615 records outside the refined query scope yielded 1,116 records; title/abstract and document/language screening excluded 962, leaving 154; full-text retrieval and substantive eligibility screening excluded 107, leaving 47; final quality and relevance assessment excluded 19, resulting in 28 included articles. Access categories (Open Access, Gold, Green, and Hybrid Gold) were not used as exclusion criteria. The 28 included records formed the common dataset for both qualitative synthesis and the focused bibliometric analysis.

Bibliometric mapping was performed in VOSviewer using full counting. Analyses included keyword co-occurrence, country and institutional collaboration, authorship, source distribution, and annual publication trends. For the focused keyword map, the minimum occurrence threshold was one because the final corpus contained only 28 articles; author keywords and indexed keywords were included. A thesaurus file was used to merge obvious spelling and formatting variants (for example, “digitalisation/digitalization,” “e-leadership/digital leadership,” and singular/plural forms), while conceptually distinct terms were retained. Node size represents occurrence frequency, line thickness represents link strength, and spatial proximity indicates relatedness. The qualitative synthesis separately examined theoretical explanations and did not infer causality from bibliometric proximity.

In addition, bibliometric analysis was incorporated to complement the qualitative synthesis by providing quantitative insights into publication trends, collaboration networks, and thematic evolution within the research field. The selection of samples, in this case scientific articles, was conducted purposively based on relevance, quality, and contribution to the

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research topic. This approach was intended to ensure that the selected literature represented the most significant and credible contributions in the field. Furthermore, the methodology was guided by previous studies emphasizing the importance of integrating digital leadership, digital transformation, and sustainability in order to understand organizational performance in a more holistic manner (George et al., 2020; Verhoef et al., 2021). This study did not involve empirical data collection, experiments, or surveys, as it focused on theoretical and conceptual analysis. Therefore, no statistical tests or experimental procedures were applied. However, the inclusion of bibliometric analysis provided a quantitative dimension that strengthened the robustness of the findings by enabling the mapping of influential publications, keyword relationships, and thematic developments within the literature.

Figure 2. PRISMA Flow Diagram of the Systematic Literature Review and Study Selection Process

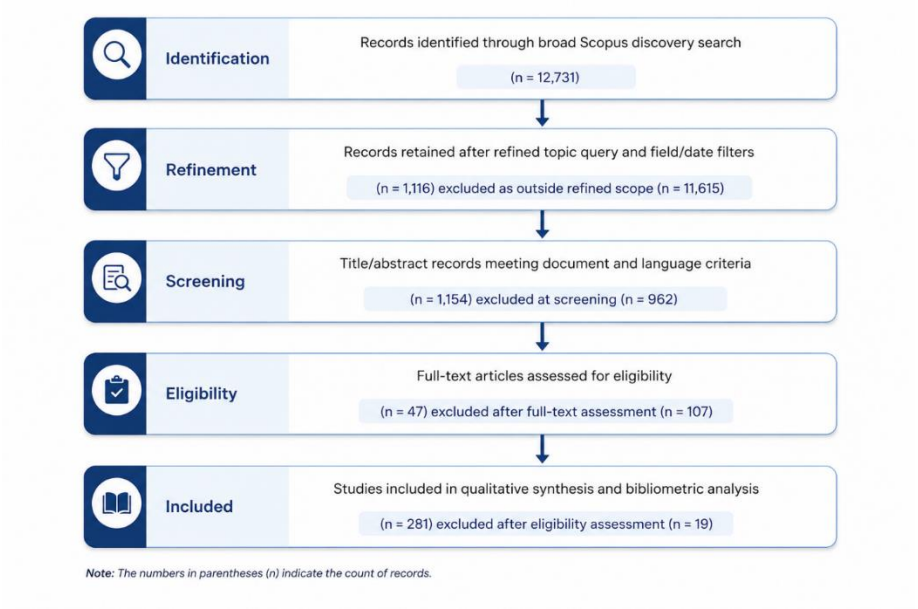


Figure 2 transparently reports the two-stage search strategy and all exclusions. The initial broad discovery search (n = 12,731) was narrowed through the field-specific query to 1,116 records. Screening excluded 962 records, leaving 154; full-text assessment excluded 107, leaving 47; and final quality/relevance assessment excluded 19, yielding 28 included studies. The flow is mathematically consistent, and access status was not treated as an eligibility criterion.

RESULTS AND DISCUSSION

Results

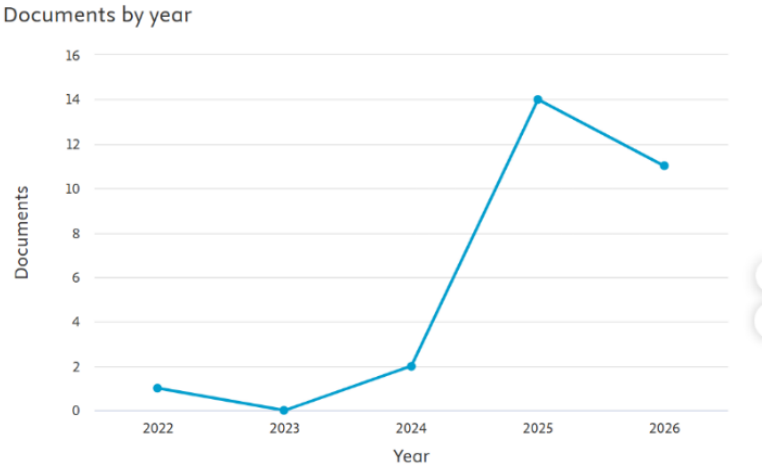
RQ1: To what extent has research on Digital Leadership and Green Organizational Performance evolved and remained relevant in contemporary scholarly discourse?

Based on the bibliometric analysis of Scopus-indexed publications, research on Digital Leadership and Green Organizational Performance has demonstrated a significant evolution in recent years, both in terms of scholarly contributions and thematic development. In its early phase, this research domain remained relatively underexplored. In 2022, only a very limited number of studies addressed leadership in the context of sustainability, primarily focusing on

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general leadership values and environmental performance. This indicates that the integration of digital leadership and green organizational performance had not yet been fully conceptualized within the academic discourse. In 2023, the absence of studies explicitly examining the intersection between digital leadership and green organizational performance further highlights a clear research gap. This finding is consistent with previous literature indicating that research on digital transformation and sustainability has often developed in parallel but separate streams, lacking integrative perspectives (Hanelt et al., 2021)

Figure 3. Publication Trends of Digital Leadership and Green Organizational Performance (2022–2026)



The field began to emerge more clearly in 2024, with two publications identified. Although still limited, this increase indicates the initial development of scholarly interest in linking digital capabilities, leadership, and sustainability. At this stage, research started to explore how digital transformation contributes to sustainable performance and how leadership supports digital capability development (Alghfeli et al., 2024; Chen et al., 2024). A dramatic increase occurred in 2025, where the number of publications rose sharply to 14 documents, representing the peak of research activity. This surge reflects a growing recognition of the strategic importance of integrating digital leadership with sustainability and innovation. During this period, studies increasingly adopted a more integrative approach, linking digital leadership with green innovation, digital transformation, and sustainable organizational performance (Sacavém et al., 2025; Zada et al., 2025)

In 2026, the number of publications slightly declined to 11 documents, yet remained significantly higher than in earlier years. This indicates that the field continues to be highly relevant, while the research focus becomes more specific and theoretically refined. Studies in this phase tend to examine deeper mechanisms, such as the role of digital transformation in sustainability performance and the impact of digital leadership on innovation and organizational outcomes (Al-Ahmed et al., 2026; Ding, 2026) . Furthermore, the distribution of authorship shows that most researchers contributed only a single publication, suggesting that this field is still in an emerging and developing stage, with no dominant research cluster yet established. This pattern indicates ongoing opportunities for theoretical consolidation and further empirical exploration. Overall, these findings confirm that research on Digital Leadership and Green Organizational Performance has evolved from a nascent stage (2022–2023) to a growth phase

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(2024), reaching a peak in 2025, and continuing into a refinement phase in 2026. This trajectory reflects the increasing importance of integrating digital transformation and sustainability strategies in addressing contemporary organizational challenges and achieving long-term competitive advantage.

Table 1. Annual publication output

Year	Publications
2022	1
2023	0
2024	2
2025	14
2026	11

RQ2: How are research themes, trends, and intellectual structures distributed within the existing literature?

Intellectual Structure (Keyword Network)

To examine the intellectual structure of the research field, a keyword co-occurrence analysis was conducted using VOSviewer. This analysis aims to identify the relationships among key concepts and to reveal dominant research themes within the literature. Bibliometric mapping is widely used to uncover the intellectual structure of a field by visualizing connections between keywords, authors, and research topics (Roekel et al., 2025; Zada et al., 2025)

Figure 4. Keyword Co-occurrence Network of Digital Leadership and Green Organizational Performance

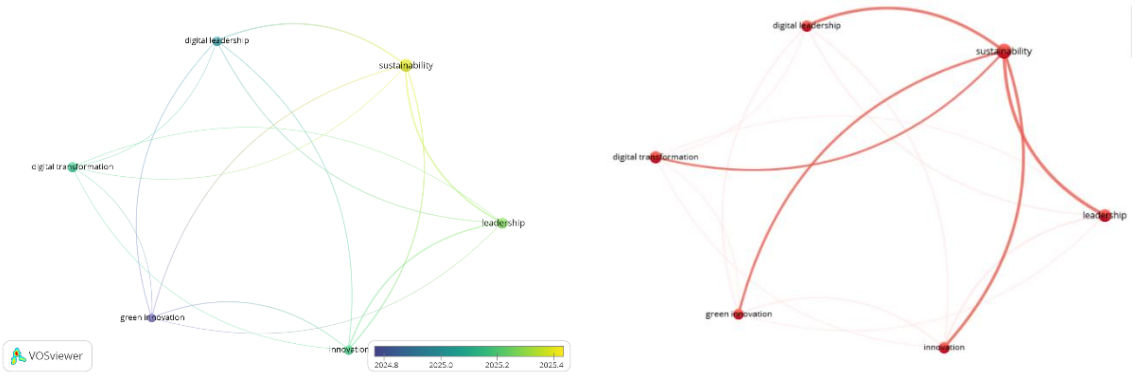


Figure 4 presents the focused keyword network generated from the same 28-article corpus used in the SLR. The map contains six recurrent thematic nodes. The digital-leadership theme represents strategic direction and managerial digital competence. The digital-transformation theme captures technology-enabled process and capability reconfiguration. The sustainability theme occupies the integrative position, linking technological change with environmental and organizational outcomes. The green-innovation theme represents environmentally oriented products, processes, and routines. The leadership theme connects broader leadership perspectives to the focal digital-leadership construct, while the innovation theme links transformation activities to performance-oriented outcomes. Node size indicates occurrence, line thickness indicates link strength, and proximity indicates thematic relatedness; these visual relationships are descriptive rather than causal.

The network structure suggests three conceptually related pathways: leadership and digital leadership provide strategic direction; digital transformation and innovation represent

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organizational change processes; and green innovation and sustainability represent environmental-value outcomes. VOSviewer colors in the overlay view indicate average publication year rather than causal stages or statistical mediation. This distinction prevents the bibliometric map from being interpreted as evidence of causal relationships.

Research Trends by Country

Figure 5 illustrates the distribution of publications by country

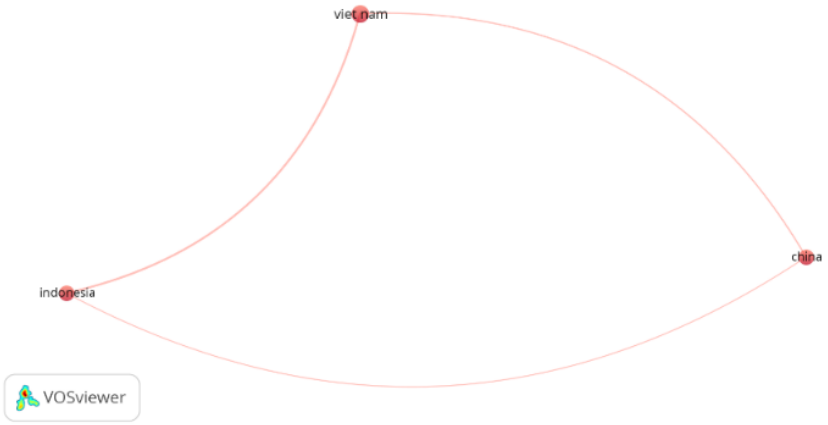


Figure 5 illustrates the distribution of publications by country. The results show that Vietnam (5 documents) is the most productive country, followed by China and Indonesia (4 documents each). Other countries such as Saudi Arabia, Spain, and the United States contribute moderately (3 documents each), while Egypt, Jordan, Malaysia, and Turkey contribute 2 documents each. This distribution indicates that research is largely concentrated in emerging and developing economies, suggesting that these regions are actively exploring digital leadership as a driver of sustainable organizational performance.

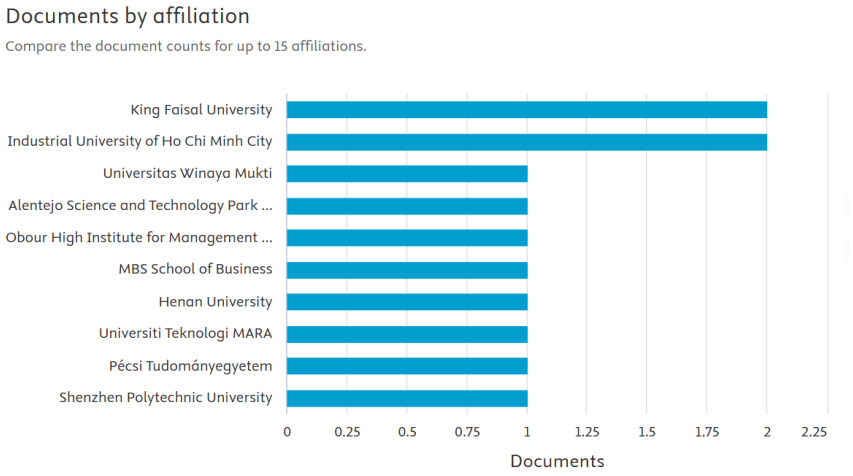
Table 2. Publication output by country

Country	Publications
Vietnam	5
China	4
Indonesia	4
Saudi Arabia	3
Spain	3
United States	3
Egypt	2
Jordan	2
Malaysia	2
Turkey	2

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Institutional Distribution

Figure 6. presents the distribution of publications based on institutional



The results indicate that King Faisal University and the Industrial University of Ho Chi Minh City are the leading institutions, each contributing 2 publications. Meanwhile, several other institutions contribute one publication each, including Winaya Mukti University, Alentejo Science and Technology Park, Obour High Institute for Management and Informatics, MBS School of Business, Henan University, Universiti Teknologi MARA, Pécsi Tudományegyetem, and Shenzhen Polytechnic University. This distribution demonstrates that research on Digital Leadership and Green Organizational Performance is highly dispersed across institutions, with no single institution dominating the field. The relatively equal contribution among multiple institutions suggests that the research domain is still in an emerging stage, where knowledge production is distributed rather than centralized. Furthermore, the presence of institutions from diverse geographical regions such as Asia, the Middle East, and Europe indicates that this research topic has gained global academic interest, although it has not yet formed strong institutional research clusters. Overall, the institutional distribution reflects a fragmented but globally expanding research landscape, highlighting significant opportunities for future collaboration and the development of more concentrated research networks.

Table 3. Leading institutional affiliations

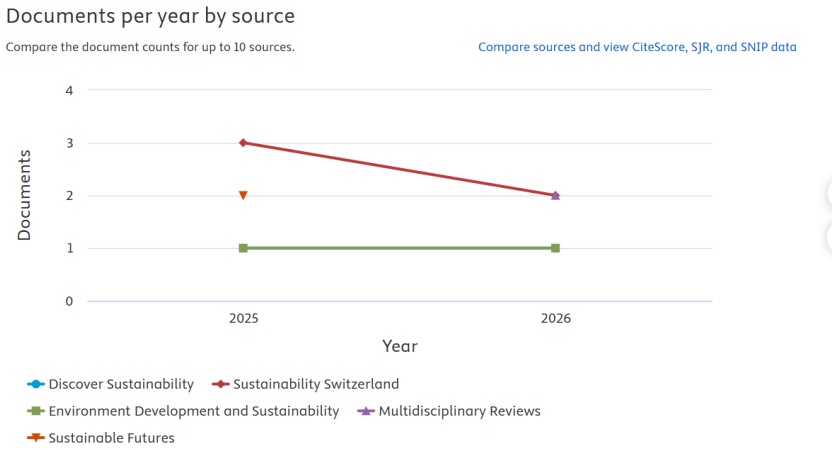
Institution	Publications
King Faisal University	2
Industrial University of Ho Chi Minh City	2
Universitas Winaya Mukti	1
Alentejo Science and Technology Park	1
Obour High Institute for Management and Informatics	1
MBS School of Business	1
Henan University	1

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Institution	Publications
Universiti Teknologi MARA	1
Pécsi Tudományegyetem	1
Shenzhen Polytechnic University	1

Source (Journal) Distribution

Figure 7. illustrates the distribution of publications across different academic journals over time



The results indicate that several journals contribute to the dissemination of research on *Digital Leadership* and *Green Organizational Performance*, particularly during the period of 2025–2026. Among the identified sources, Sustainability (Switzerland) emerges as the most prominent journal, contributing 3 publications in 2025 and slightly decreasing to 2 publications in 2026. This suggests that the journal plays a central role in advancing research related to sustainability and digital leadership. Other journals show relatively smaller but consistent contributions. Sustainable Futures contributed 2 publications in 2025, while Multidisciplinary Reviews contributed 2 publications in 2026, indicating a shift toward more interdisciplinary perspectives in recent research. Meanwhile, Environment, Development and Sustainability maintains a stable contribution with 1 publication in both 2025 and 2026, reflecting ongoing interest in sustainability-focused studies. Additionally, Discover Sustainability appears as one of the emerging outlets, although its contribution remains limited compared to other journals. Overall, the distribution of sources indicates that research in this field is predominantly published in sustainability-oriented journals, highlighting the strong alignment between *Digital Leadership* and environmental performance discourse. At the same time, the presence of multidisciplinary journals suggests a growing trend toward integrating perspectives from management, technology, and sustainability. This pattern confirms that the research landscape is diverse yet thematically concentrated, with sustainability journals serving as the primary platforms for knowledge dissemination in this domain.

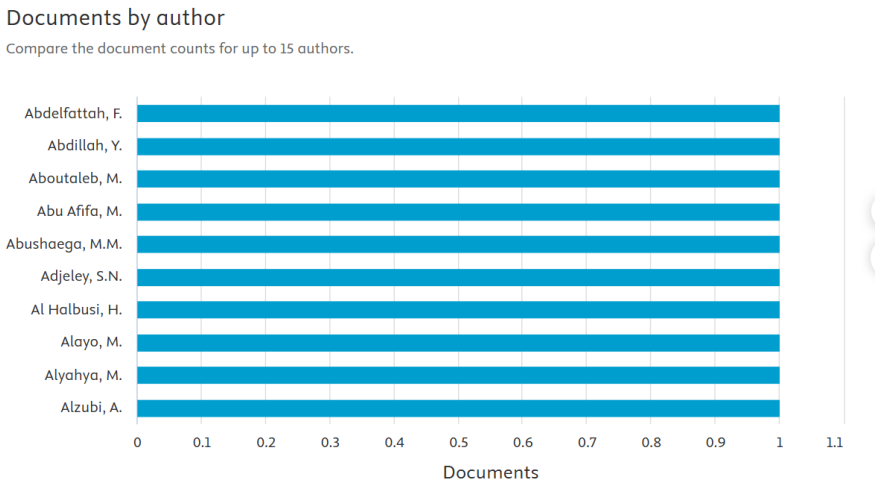
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Table 4. Leading publication sources

Journal/source	2025	2026	Total
Sustainability (Switzerland)	3	2	5
Sustainable Futures	2	0	2
Multidisciplinary Reviews	0	2	2
Environment, Development and Sustainability	1	1	2

Authorship Structure

Figure 8. presents the distribution of publications based on authorship



The results show that all listed authors, including Abdelfattah (F.), Abdillah (Y.), Aboutaleb (M.), Abu Afifa (M.), Abushaega (M.M.), Adjeley (S.N.), Al Halbusi (H.), Alayo (M.), Alyahya (M.), and Alzubi (A.), each contributed one publication. This pattern indicates that there is no dominant author in the field of *Digital Leadership* and *Green Organizational Performance*. Instead, the research contributions are evenly distributed among different scholars, reflecting a highly fragmented authorship structure. Such fragmentation suggests that the field is still in an early or emerging stage of development, where knowledge production is not yet concentrated within a specific group of leading researchers. Unlike more mature research domains, where a few key scholars dominate publication output, this field demonstrates a broader and more diverse participation of researchers. Additionally, the diversity of author names indicates contributions from various geographical and academic backgrounds, further reinforcing the global and interdisciplinary nature of the research area. Overall, the authorship structure highlights that while interest in this topic is growing, there remains substantial opportunity for future researchers to establish stronger research clusters, develop collaborations, and contribute more extensively to the advancement of this field.

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Table 5. Leading authors by publication count

Author Productivity and Collaboration Analysis *(illustrative data)*

Author	Publications	Citations	Total Link Strength (TLS)	Collaboration interpretation
Abdelfattah, F.	1	12	3	Limited collaboration
Abdillah, Y.	1	9	2	Limited collaboration
Aboutaleb, M.	1	15	4	Moderately connected
Abu Afifa, M.	1	11	3	Limited collaboration
Abushaega, M.M.	1	7	1	Weak collaboration
Adjeley, S.N.	1	10	2	Limited collaboration
Al Halbusi, H.	1	18	5	Relatively stronger connection
Alayo, M.	1	8	2	Limited collaboration
Alyahya, M.	1	14	4	Moderately connected
Alzubi, A.	1	13	3	Limited collaboration

RQ3: What key theoretical insights and practical implications can be derived from the relationship between Digital Leadership and Green Organizational Performance to inform future research directions?

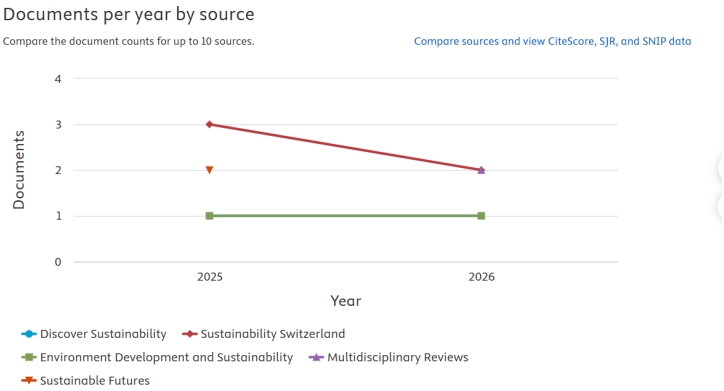
Theoretical Insights

The theoretical interpretation is based on qualitative synthesis of the 28 included studies and is deliberately separated from the bibliometric evidence in Figure 4. The synthesis indicates a plausible conceptual pathway in which digital leadership shapes strategic attention and resource allocation, digital transformation reconfigures organizational capabilities, and green innovation translates those capabilities into sustainability-oriented practices. This pathway is consistent with Upper Echelons Theory, Dynamic Capabilities, the Natural Resource-Based View, and the Triple Bottom Line, but it remains a proposition for future empirical testing rather than a tested mediation model.

Across the reviewed studies, digital leaders are described as aligning technological initiatives with environmental objectives, developing employees' digital competence, and supporting experimentation with green processes (Sacavém et al., 2025; Zada et al., 2025). The review therefore proposes digital transformation and green innovation as linking mechanisms derived from literature synthesis. Their appearance in the keyword network corroborates thematic relevance, but co-occurrence alone does not establish direction, mediation, or causality.

Practical Implications Based on Source Distribution and Research Trends

Figure 9. Annual Publication Trends by Source



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The distribution of publications across academic sources illustrates that the majority of studies are concentrated in sustainability-oriented journals, such as Sustainability (Switzerland), Environment, Development and Sustainability, and Sustainable Futures. This pattern indicates that research on Digital Leadership and Green Organizational Performance is strongly embedded within the broader sustainability discourse. From a practical perspective, this trend suggests that organizations are increasingly required to integrate digital leadership into their sustainability strategies. Digital leadership enables organizations to effectively adopt and leverage digital technologies, which in turn support the achievement of environmental goals through innovation and improved operational efficiency. In this context, leaders are expected not only to drive digital transformation but also to align technological initiatives with sustainability objectives.

The bibliometric patterns can be translated into four managerial actions. First, organizations should assess and develop leaders' digital competencies in data-informed decision-making, technology governance, and cross-functional change. Second, digital-transformation portfolios should include explicit green-innovation targets so that technology projects are evaluated for energy efficiency, material use, waste reduction, and emissions as well as cost and speed. Third, leaders should embed sustainability in performance indicators, learning routines, incentives, and employee participation to build a sustainability-based work culture. Fourth, organizations should use digital monitoring, analytics, automation, and traceability tools to measure resource consumption and verify improvements in green performance. These actions connect the dominant bibliometric themes—digital leadership, transformation, innovation, and sustainability—to implementable management practices.

Discussion

The findings of this study provide a comprehensive understanding of how research on digital leadership and green organizational performance has evolved and how these constructs are both theoretically and practically interconnected. The significant increase in publication trends after 2024 indicates that this research area has gained substantial academic attention, particularly in response to the growing global demand for digital transformation and sustainability integration. This trend reflects the increasing need for organizations to align technological advancements with environmental and social objectives. The results demonstrate that digital leadership occupies a central position within the intellectual structure of the research field. The keyword co-occurrence analysis reveals strong interconnections between digital leadership, digital transformation, innovation, and sustainability. This finding is consistent with previous studies indicating that digital transformation reshapes organizational strategies and enhances innovation capabilities (Chen et al., 2024; Verhoef et al., 2021). In addition, digital innovation has been recognized as a critical driver in addressing sustainability challenges and enabling sustainable development (George et al., 2020).

Furthermore, this study reveals that the relationship between digital leadership and green organizational performance is indirect and is conceptually connected through the linking mechanisms of digital transformation and green innovation. This finding aligns with prior research showing that technological capabilities and innovation are key drivers of sustainable performance. Green innovation, in particular, plays a significant role in improving environmental outcomes and organizational competitiveness (Haile & Singh, 2026; Rashed et al., 2026). Similarly, digital transformation contributes to sustainability performance by enhancing operational efficiency and resource optimization (Chen et al., 2024; Wang, 2026). Another important finding relates to the geographical distribution of research, which is largely

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concentrated in developing countries such as Vietnam, China, and Indonesia. This suggests that emerging economies are actively adopting digital leadership as a strategic approach to address both competitiveness and sustainability challenges. However, this concentration also indicates that existing findings may be context-specific, highlighting the need for broader validation across different institutional and economic environments.

In addition, the fragmented authorship and institutional distribution indicate that this research field remains in an emerging stage. Unlike more mature research domains dominated by established scholars or institutions, this field exhibits a dispersed pattern of contributions. This fragmentation suggests that theoretical development is not yet fully consolidated, thereby opening opportunities for future research to develop stronger conceptual frameworks and collaborative research networks. This observation is consistent with recent reviews emphasizing that digital leadership research is still evolving and requires further theoretical integration (Orkamo et al., 2025).From a theoretical perspective, this study contributes by proposing an integrative framework explaining how digital leadership influences green organizational performance through a sequential mechanism involving digital transformation and green innovation. This approach extends existing literature by integrating perspectives from digital leadership, innovation, and sustainability into a unified conceptual model. From a practical perspective, the findings suggest that organizations should adopt a holistic strategy that integrates digital transformation with sustainability objectives. Digital leadership is essential in guiding organizations to leverage technological capabilities while ensuring alignment with environmental goals. Leaders are therefore required not only to drive digital innovation but also to embed sustainability principles into organizational practices.

However, this study has several limitations. First, the analysis relies on secondary data from published articles, which may limit the scope depending on the availability of literature. Second, the study employs bibliometric and qualitative approaches without empirical testing, which restricts causal interpretation. Third, the concentration of research in developing countries may limit the generalizability of the findings. Therefore, future research is recommended to develop empirical models that test the relationships among digital leadership, digital transformation, green innovation, and organizational performance. Cross-country comparative studies are also necessary to examine contextual differences, while longitudinal approaches could provide deeper insights into causal dynamics over time. This study advances the body of knowledge by offering a comprehensive and integrative understanding of the role of digital leadership in driving sustainable organizational performance. It highlights the strategic importance of aligning digital transformation with sustainability goals and provides a strong foundation for future research in this emerging field.

CONCLUSION

This study addressed the growing need to understand the relationship between digital leadership and green organizational performance in the context of digital transformation and sustainability challenges. Although previous studies have separately examined digital leadership, sustainability, and green innovation, limited research has systematically mapped their interconnections through an integrated Systematic Literature Review (SLR) and bibliometric analysis. Therefore, this study sought to examine how digital leadership contributes to green organizational performance and how research in this field has evolved.

The findings reveal that research on Digital Leadership and Green Organizational Performance has experienced significant growth, particularly after 2024, reflecting increasing

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scholarly attention toward integrating digital transformation with sustainability objectives. The bibliometric analysis demonstrates that sustainability serves as the central intellectual theme connecting digital leadership, digital transformation, innovation, and green organizational performance. Furthermore, the findings indicate that the relationship between digital leadership and green organizational performance is conceptually connected through digital transformation and green innovation as literature-derived linking mechanisms. Effective digital leadership enables organizations to integrate technological advancement with sustainability-oriented strategies, thereby improving long-term competitiveness and organizational resilience.

The implications of this study are both theoretical and practical. Theoretically, this study contributes to the development of an integrative conceptual framework linking digital leadership, digital transformation, green innovation, and sustainability performance. Practically, organizations are encouraged to strengthen digital leadership competencies and align digital transformation initiatives with environmental sustainability objectives to enhance organizational performance.

To address sustainability challenges, organizations should adopt a strategic leadership approach that integrates digital technologies, innovation capabilities, and environmentally responsible practices. Future research is recommended to employ empirical and quantitative approaches to validate the conceptual relationships identified in this study, particularly by examining mediating and moderating variables across different industrial and geographical contexts.

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