Digital Leadership and Dynamic Capabilities Research Shows Growing Strategic Adaptability Trends

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Abstract. General Background: The accelerated pace of digital transformation since 2019 has reshaped organizational leadership, capability development, and strategic decision-making across sectors. Specific Background: Digital leadership is increasingly recognized as a key driver of organizational adaptability, while dynamic capability theory provides a framework for understanding how firms sense opportunities, seize resources, and reconfigure competencies in turbulent environments. Knowledge Gap: Despite their conceptual alignment, research integrating digital leadership and dynamic capabilities remains fragmented and lacks comprehensive mapping. Aims: This study aims to systematically map the intellectual structure and research trends on digital leadership and dynamic capabilities through a bibliometric analysis of Scopus-indexed publications from 2019 to 2025. Results: An analysis of 244 journal articles using Biblioshiny (Bibliometrix R-package) reveals a rapid increase in research output beginning in 2022, indicating growing scholarly interest. Co-citation analysis identifies three dominant clusters: foundational leadership theory, capability-based digital transformation, and classical leadership models. The thematic map highlights key themes such as dynamic capability, digital agility, AI-enabled innovation, and business model innovation, alongside emerging topics including sustainable digital transformation, VUCA leadership, and ecosystem adaptability. Novelty: This study positions digital leadership as a microfoundation of dynamic capabilities through an integrated bibliometric mapping approach. Implications: The findings provide strategic insights for scholars, practitioners, and policymakers to support the development of resilient, innovative, and sustainable digital organizations.

Keywords: Digital leadership; dynamic capabilities; bibliometric analysis; innovation

1 Introduction

The acceleration of digital transformation since 2019 has reshaped organizational leadership, innovation processes, and strategic decision-making across sectors. In an increasingly turbulent and technology-driven environment, digital leadership has emerged as a critical enabler of organizational competitiveness by strengthening the ability of firms to sense opportunities, seize resources, and transform structures

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effectively [1,2]. Parallel to this, the dynamic capabilities framework has gained renewed attention as a lens to explain how organizations reconfigure internal and external competencies to navigate volatility and sustain long-term performance [3].

Recent studies show a conceptual convergence between digital leadership and dynamic capabilities, highlighting leadership's role in building agility, innovation capability, learning mechanisms, and digital culture [4–6]. Despite this alignment, research in this domain remains fragmented, with existing studies examining leadership, capabilities, or digital transformation in isolation, leaving limited synthesis of their intellectual evolution and thematic landscape. Consequently, deeper insight is needed to understand how digital leadership operates as a microfoundation of dynamic capabilities.

This study addresses these gaps by conducting a comprehensive bibliometric analysis of global research published between 2019 and 2025. Using 244 Scopus-indexed journal articles and the Biblioshiny interface of Bibliometrix, this research maps publication patterns, intellectual foundations, thematic structures, and emerging research frontiers. The study contributes by:
(1) conceptualizing digital leadership as a strategic enabler of dynamic capabilities;
(2) providing a systematic overview of global research trends; and
(3) offering insights for organizations and policymakers to strengthen leadership-driven digital transformation.

2 Methods

This study employs a quantitative bibliometric approach to analyze the evolution of scientific knowledge on digital leadership and dynamic capabilities. Bibliometric methods offer systematic and reproducible techniques for revealing research structures, intellectual roots, and thematic developments within a field [2].

Data were retrieved from the Scopus database using the following Boolean query executed in October 2025:

TITLE-ABS-KEY ("digital leadership" AND "dynamic capabilities") OR TITLE-ABS-KEY ("digital transformation" AND "leadership") AND PUBYEAR > 2018 AND PUBYEAR < 2026 AND (LIMIT-TO(DOCTYPE,"ar")) AND (LIMIT-TO(SUBJAREA,"BUSI")) AND (LIMIT-TO(SRCTYPE,"j")) AND (LIMIT-TO(LANGUAGE,"English")) AND (LIMIT-TO(OA,"all"))

This search produced 244 English-language journal articles published between 2019 and 2025 in the Business subject area. All records were exported in BibTeX format and processed using Biblioshiny, with data cleaning performed to normalize author names and harmonize keyword variations. The analysis consisted of three components:
(1) Descriptive analysis to assess annual publication growth and author productivity;
(2) Intellectual structure analysis using document co-citation analysis with the Louvain clustering algorithm to identify foundational theories; and
(3) Conceptual structure analysis through keyword co-occurrence and thematic mapping to classify motor, basic, niche, and emerging themes. Association strength normalization and a minimum keyword frequency threshold of five were applied to ensure robustness.

3 Results

3.1 Publication Trends

The annual scientific production demonstrates a strong upward trajectory over the seven-year period. As shown in Figure 1, the number of publications remained modest between 2019 and 2021, followed by a substantial rise beginning in 2022. Research output more than doubled between 2022 and 2023 and continued to accelerate, reaching its highest level in 2025. This pattern reflects heightened scholarly and managerial interest as organizations intensified digital transformation initiatives in the post-pandemic era.

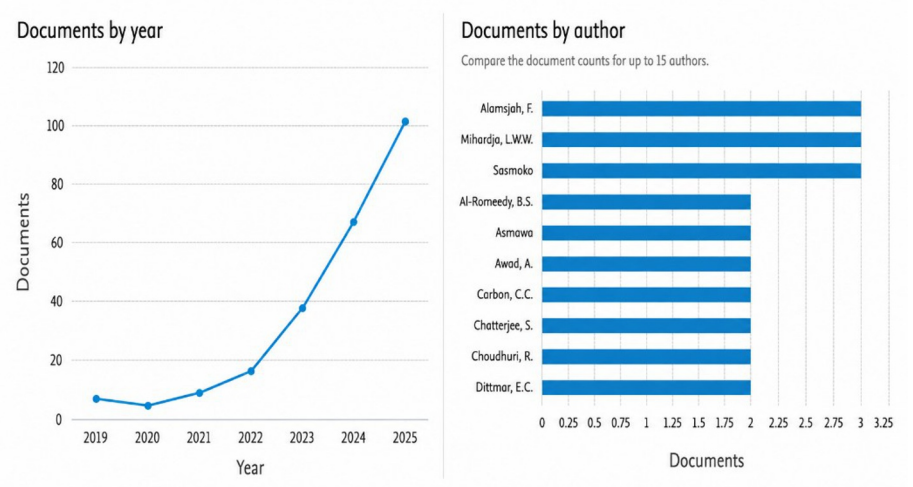

Fig. 1. Publication Trends

Figure 1 also highlights the most productive authors, with Alamsjah, Mihardjo, and Sasmoko emerging as leading contributors, each producing three publications during the analysis period. The presence of multiple authors with comparable productivity indicates a growing and distributed research community, suggesting that the domain is gaining maturity and attracting greater academic attention.

3.2 Intellectual Structure

Co-citation analysis reveals three dominant intellectual clusters, as shown in Table 1. Cluster 1 comprises foundational leadership theories, including Avolio's seminal work on e-leadership, establishing the conceptual base for digital leadership as technology-mediated behavior [4]

Table 1. Table Intellectual Structure Based on Document Co-citation Clusters

Cluster	Document	Conceptual Focus
Cluster 1 (Foundational Leadership Theory)	- Avolio, B. (2014)[7] - Avolio, B. (2000)[4]	E-leadership, leadership behavior, technology-mediated leadership
Cluster 2 (Digital Transformation, Innovation & Dynamic Capabilities)	- Alnuaimi, 2022 (leadership agility & digital strategy) [8]- Appio, 2021 (digital transformation & innovation management) [9] - Abbu Haroon, 2022 (digital capabilities) [10] - Andriole, 2017 (digital strategy) [11]- Aria & Cuccurullo, 2017 (Bibliometrix)[2]- MCIS (2016)[12]	Digital transformation, innovation capability, agility, digital capability development
Cluster 3 (Classical Leadership Foundations)	- Bass & Stogdill (1990) [13]- Transformational Leadership (2006)[14]	Transformational leadership, classical leadership models

Cluster 2, the largest and most contemporary, includes research connecting digital leadership with innovation, agility, and digital capability development [4], [15]]. This cluster underscores digital leadership as a microfoundation of dynamic capabilities by enabling sensing, seizing, and transforming processes. Cluster 3 contains classical theories such as transformational leadership, demonstrating that traditional leadership frameworks continue to shape modern digital leadership scholarship [9].

Although the dataset consists only of publications from 2019–2025, the co-citation analysis includes earlier works because it examines the references frequently cited together by the articles in the dataset. Therefore, seminal studies published prior to 2019 appear as foundational intellectual roots of the field.

3.3 Conceptual Structure and Emerging Themes

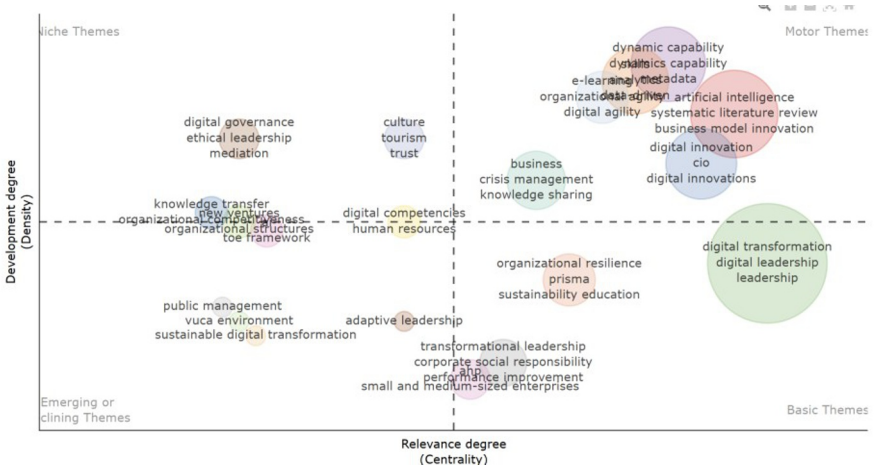

Fig. 2. Thematic map

The thematic map as shown in figure 2, shows four categories of themes. Motor themes include dynamic capability, digital agility, AI-enabled innovation, and business model innovation, indicating advanced and highly central research directions. Basic themes, such as digital leadership, digital transformation, and organizational resilience, represent core yet less-developed constructs. Niche themes involve digital governance and ethical leadership, offering specialized but peripheral insights. Emerging themes include sustainable digital transformation, VUCA leadership, and ecosystem adaptability, signaling future scholarly opportunities, especially in sustainability-oriented digital transformation.

4 Discussion

The results demonstrate rapid growth and conceptual consolidation in the field of digital leadership and dynamic capabilities. Publication trends reflect increasing global recognition of leadership's strategic role in driving digital transformation. The intellectual clusters highlight how digital leadership scholarship remains anchored in classical leadership theory while expanding into capability-based and technology-enabled perspectives. This supports the notion that digital leadership is an extension, not a replacement of traditional leadership constructs.

The conceptual structure shows the domain's progression toward innovation-, agility-, and AI-driven themes. The prominence of dynamic capability, digital agility, and AI-enabled leadership indicates a shift toward examining how leaders orchestrate digital resources to enhance organizational adaptability. Emerging themes such as sustainability, VUCA conditions, and ecosystem-based capability development highlight the growing importance of responsible and future-ready digital transformation. Collectively, these findings reveal a maturing research domain that integrates behavioral, technological, and strategic dimensions of leadership.

5 Conclusion and Implication

This study provides a comprehensive overview of research at the intersection of digital leadership and dynamic capabilities between 2019 and 2025. The findings show that the field is expanding rapidly and adopting increasingly integrated theoretical perspectives. Digital leadership is positioned as a critical microfoundation for dynamic capabilities, shaping organizational sensing, seizing, and transformation processes necessary for digital-era competitiveness.

Practically, organizations should strengthen leadership development initiatives by emphasizing digital fluency, innovation culture, and ethically guided AI adoption. Policymakers should support leadership capability-building across sectors to ensure inclusive and sustainable digital transformation. This bibliometric mapping also offers a foundation for future empirical studies examining multi-level leadership effects, AI human collaboration, and sustainable digital ecosystems.

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