JURNAL ECONOMINA
e-ISSN: 2963-1181
Volume 5, Number 10, October 2026
Homepage: ejournal.45mataram.ac.id/index.php/economina

The Development of Change Management Topics in the Era of Digital Transformation

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Article History
Received: 01-10-2026
Revised: 06-10-2026
Published: 30-10-2026

Keywords: Change Management, Digital Transformation, Bibliometric Analysis

ABSTRACT

Introduction/Main Objectives: This study systematically maps publication trends, thematic patterns, and scientific collaboration networks in change management research within the digital transformation era, providing a comprehensive intellectual landscape of this rapidly evolving field. Background Problems: Despite exponential growth in digital transformation literature, systematic synthesis of intellectual structures, collaboration patterns, and integration of technological and human dimensions in change management remains critically limited. This necessitates investigation into: What are the publication trends, dominant themes, collaboration patterns, and intellectual structures shaping change management research in digital transformation? Novelty: This study presents the first comprehensive bibliometric analysis holistically integrating technological innovation with human-centric dimensions, identifies critical collaboration gaps across geographical boundaries, and offers an integrated framework bridging technology adoption, adaptive leadership, and sustainability imperatives. Research Methods: Bibliometric analysis of 1,002 Scopus-indexed documents employing co-citation and co-word mapping techniques via VOSviewer software to visualize intellectual structures and international collaboration networks. Finding/Results: Publications surged dramatically since 2019, revealing two dominant thematic clusters: sustainability-oriented digital transformation and adaptive leadership paradigms. Germany and Italy emerge as leading contributors; however, cross-country collaboration remains limited, indicating fragmented knowledge development. Conclusion: This research establishes the critical integration of technology, adaptive leadership, and sustainability as foundational pillars for successful organizational transformation, highlights the urgent need for enhanced international collaboration, and provides a strategic roadmap for balancing technological innovation with human-environmental considerations.

INTODUCTION

Digital transformation has become a critical driver for organizations to swiftly adapt to technological advancements to maintain their competitive edge. According to (Schwab, 2017), digital transformation involves adopting technology alongside profound cultural and operational changes. According to (McKinsey, 2022) report, 70% of digital transformation initiatives fail, primarily due to inadequate leadership, employee resistance, and cultural misalignment. This highlights the need for structured change management approaches that address both technological and human factors to ensure successful implementation.

Change management provides a structured approach to addressing significant changes in technology, processes, or organizational structure. Successful organizations are those that can strategically adapt to external dynamics (Kotter, 2012). Nevertheless, digital transformation frequently encounters challenges such as cultural misalignment, resistance to change, and employees' unpreparedness (Pulido & Taherdoost, 2023). These challenges underscore the necessity of a holistic approach that integrates technological and human dimensions to develop adaptive change management strategies.

While previous studies have extensively explored digital transformation, most have focused either on technological or human aspects in isolation (Bellantuono et al., 2021; Oludapo et al., 2024; Pacolli, 2022). The lack of comprehensive understanding of the synergy between these elements creates a gap in the literature. This study aims to bridge this gap by employing bibliometric analysis to map trends, thematic patterns, and the relationship between technology, people, and change management in digital transformation.

The study addresses three research questions:

RQ 1 : How does research related to change management in the context of digital transformation develop every 5 years, from 2000 to 2025?

RQ 2 : What is the distribution and development of research on the topic of change management in the era of digital transformation in the top 10 countries grouped by continent?

RQ 3 : What are the patterns of lead author contributions and collaborations in change management-related research, and how are these trends evolving?

RQ 4 : What are the uncovered research areas in the study of digital transformation and change management, and what are the recommendations for future research?

By answering these questions, this research not only provides broader theoretical insights but also offers strategic recommendations for organizations navigating the challenges of digital transformation.

METHOD DATA AND ANALYSIS

2.1. Research Design

This study employs a bibliometric analysis approach to examine research trends, thematic patterns, and collaborations in the field of change management within the digital

transformation context. Bibliometric analysis is a quantitative technique widely used to map the intellectual structure of research fields by identifying publication trends, co-citation networks, and keyword associations (Sweileh, 2020). This approach provides a systematic overview of the evolution of scholarly work, highlighting both established and emerging topics.

2.2. Data Collection

The bibliographic data were sourced from the Scopus database, chosen for its high standards of academic quality and broad coverage of peer-reviewed journals (Baas et al., 2020). A systematic search was conducted using predefined keywords such as "change management," "digital transformation," and "organizational change," appearing in article titles, abstracts, and author keywords.

Inclusion and exclusion criteria:

1. Articles must be published in Scopus-indexed journals.
2. No restriction was placed on publication years to allow for a comprehensive longitudinal analysis.
3. Only journal articles were included, excluding conference papers, editorials, and book chapters.

The search process initially identified 162,832 documents, which were filtered by subject area (business, management, and accounting) and document type (articles only), yielding 5,596 documents. A final filtering based on relevance to the research theme reduced the dataset to 1,002 articles. The entire data collection and screening process is illustrated in Figure 1.

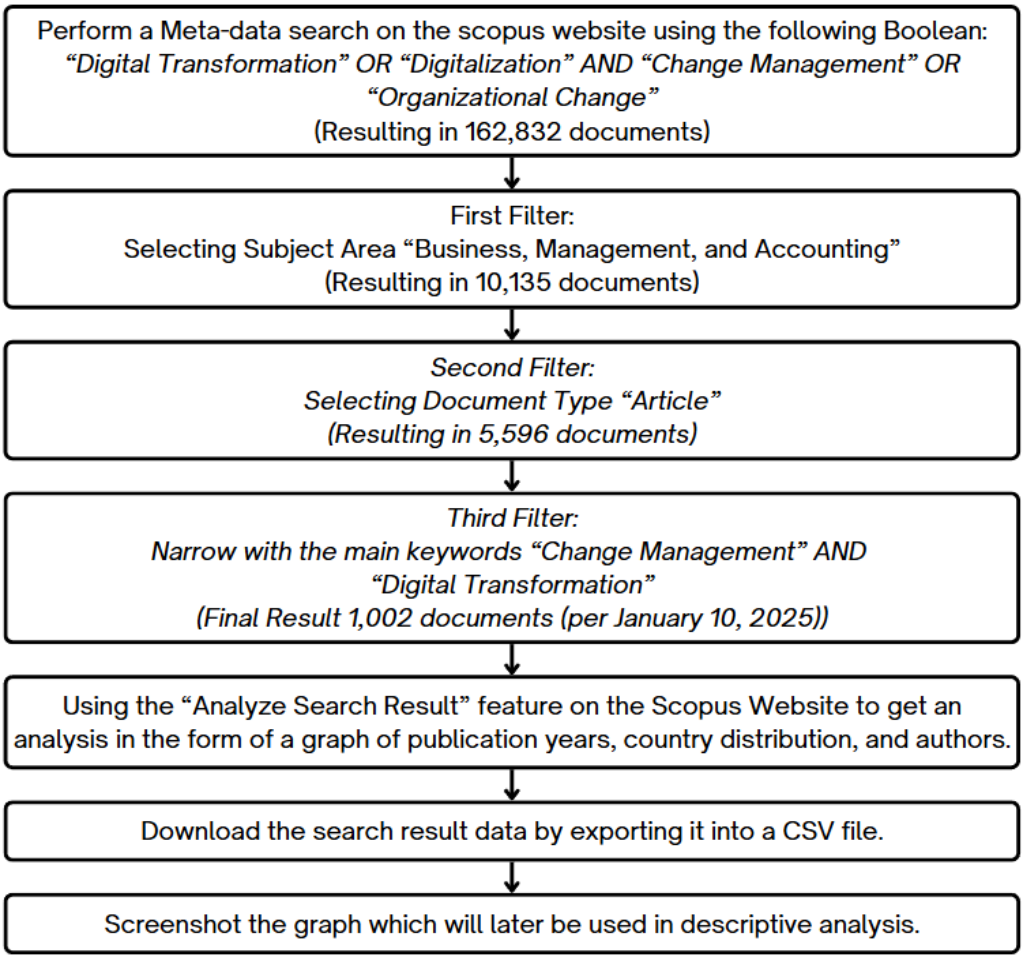

Figure 1. Research Data Collection and Screening Step

2.3. Data Analysis

Data analysis was conducted using VOSviewer (version 1.6.20), a specialized software tool for constructing and visualizing bibliometric networks. The analysis comprised the following steps, as outlined in Figure 2:

- Co-Citation Analysis: This technique identifies relationships between articles based on the frequency with which they are cited together, revealing influential works and intellectual structures within the research field.
- Co-Word Analysis: This method examines the co-occurrence of keywords in the dataset, allowing for the identification of dominant themes and emerging trends.
- Threshold Setting: This research sets threshold values at 1, 3, and 5 to measure the level of interrelationship between the components to be analyzed. The determination of this threshold value aims to simplify the data, focus the analysis on the most relevant and significant research, and support the data-driven decisionmaking process (Li, 2019).
- Data Visualization: With VOSviewer, we created data visualizations in the form of network maps. This visualization makes it easier to understand the relationships

between articles, authors, and keywords, and provides a clear picture of the knowledge structure in this field.

To make it easier to understand, here are the steps taken in analyzing data from Scopus using VOSviewer Software (Version 1.6.20).

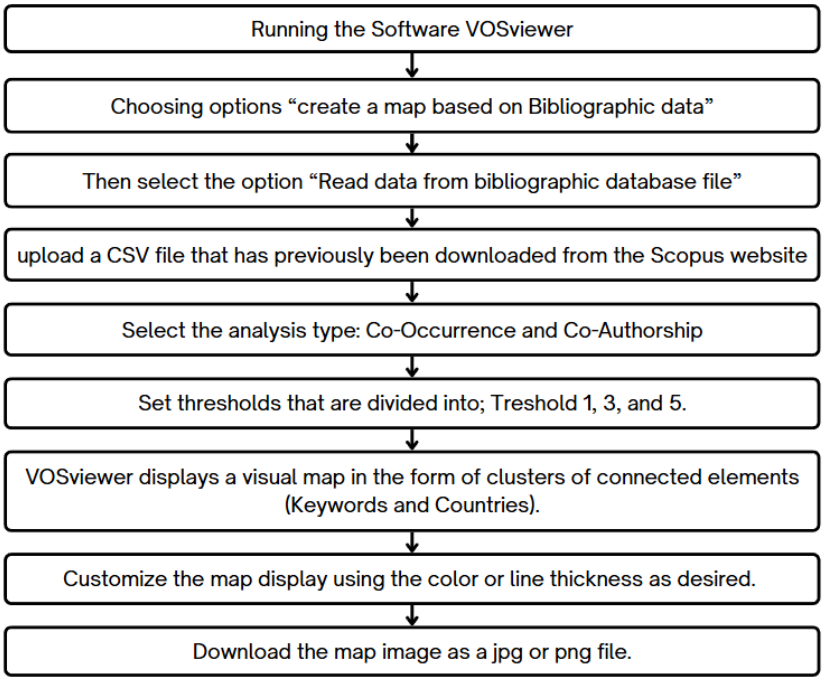

Figure 2. Step for Processing Data with VOSviewer

2.4. Data Validation

To ensure the reliability and accuracy of the dataset, several validation steps were undertaken:

- Duplicate Removal: Automated deduplication was performed using Microsoft Excel and Scopus' built-in tools to eliminate redundancies.
- Relevance Check: Articles were manually reviewed to ensure their direct relevance to the research objectives.

These processes ensured the final dataset of 1,002 documents was both comprehensive and free from data inconsistencies.

RESULT AND DISCUSSION

2.5. Trends in Research Publication

The development of research on change management within the context of digital transformation is depicted through two key visualizations. Figure 3 highlights the annual number of publications, showing a consistent upward trend, while Figure 4 presents the thematic evolution of research topics over time. Together, these figures provide a comprehensive overview of the growth and focus areas in this field.

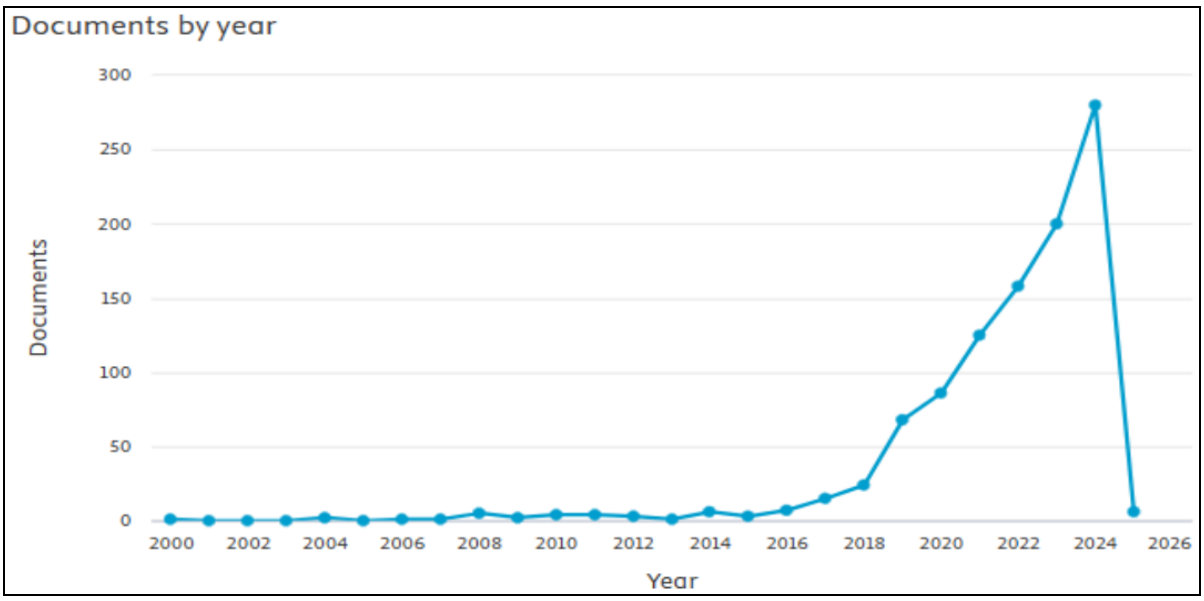

Figure 3. Number of Publications per Year

Figure 3 illustrates the annual number of publications addressing the topic of change management in the context of digital transformation over the period from 2000 to 2024. This data reveals significant trends in scholarly attention toward this research area, as described below:

- 2000–2015: Period of Minimal Research Activity
  During this period, the number of publications remained consistently low, with fewer than 10 documents published annually. This trend suggests that the topic had not yet gained substantial academic attention. Possible explanations include the limited adoption of digital transformation initiatives in organizations during the early 2000s and the nascent stage of digital technologies' integration into business processes.
- 2016–2020: Moderate Growth in Research Interest
  The period from 2016 to 2020 demonstrates a gradual increase in the number of publications. This moderate growth reflects the increasing importance of digital transformation in organizational strategy and the recognition of change management as a critical factor for its successful implementation. The growth aligns with the proliferation of digital technologies such as cloud computing, big data, and artificial intelligence, which began to influence organizational practices during this time.
- 2021–2025: Rapid Acceleration in Research Output
  A sharp increase in the number of publications is observed after 2021, with the count reaching its peak in 2024 (approximately 300 publications). This exponential growth can be attributed to several key factors:
  a. The global acceleration of digital transformation efforts, particularly during and after the COVID-19 pandemic, which forced organizations to rapidly adapt to digital solutions.

b. A heightened awareness of the critical role of change management in overcoming resistance, fostering employee adoption, and ensuring the successful integration of new digital tools and processes.
c. Increased funding and focus from academic and industry stakeholders on studying change management frameworks tailored for digital transformation initiatives.

The trends observed in Figure 3 highlight the growing academic interest in the intersection between change management and digital transformation, especially in the context of recent global challenges such as the COVID-19 pandemic. The exponential growth in publications post-2020 underscores the increasing recognition of change management as an important driver of successful digital transformation initiatives. Future research should focus on developing robust frameworks and methodologies to address the evolving challenges of managing organizational change in a rapidly digitizing environment.

After discussing the number of publications on the topic of change management in the context of digital transformation in several countries, this research also discusses the top 10 authors who have made significant contributions to this topic. These authors have published in journals that are influential in the development of change management, digital transformation, and the challenges and opportunities that have great potential in the future.

Table 1. Author with The Highest Number of Publications on This Topic

No	Author	Number of Publication
1.	Beata Gavurova	4 documents
2.	Sascha Kraus	4 documents
3.	Vinit Parida	4 documents
4.	Vladimir F. Ukolov	4 documents
5.	Sheshadri Chatterje	3 documents
6.	Ranjan Chaudhuri	3 documents
7.	Pasquale Del Vecchio	3 documents
8.	Hans Joachim Gergs	3 documents
9.	Katharina Gilli	3 documents
10.	Christian Kowalkowsi	3 documents

Source: Scopus

The ten authors with the highest number of authors in Scopus on the topic of change management in the era of digital transformation have each published 4 documents related to this topic, including Gavurova, B; Kraus, S; Parida, V; and Ukolov, V.F. In addition, Chatterje, S; Chaudhuri, R; Del Vecchio, P; Gerrgs. H.J; Gili, K; and Kowalkowski, C. who have each published 3 documents.

Figure 4 below illustrates the evolution of research topics on change management in the era of digital transformation. From this figure, we can observe how research priorities have shifted over time, reflecting the increasing complexity of digital transformation.

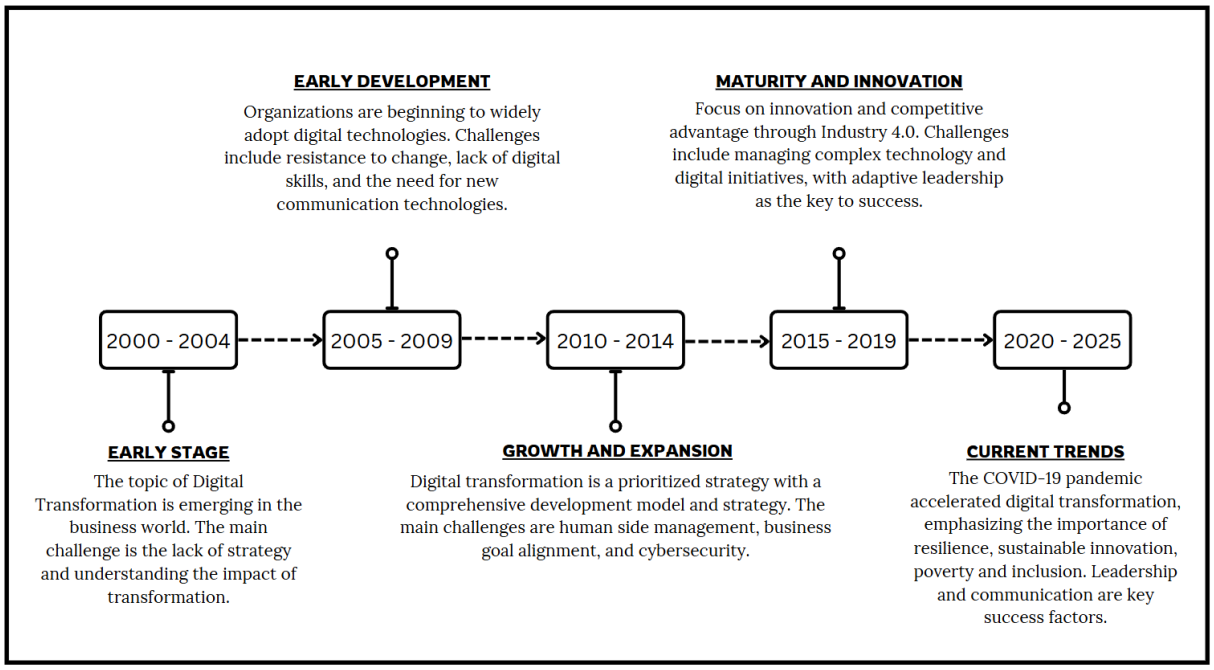

Figure 4. Evolution of Change Management Topics in Area of Digital Transformation

The figure highlights key milestones, including the initial focus on technological adoption, the integration of human-centric approaches, and the incorporation of dynamic capabilities. Recent years have seen the development of holistic frameworks and strategies emphasizing sustainability and adaptive leadership.

In the early period of 2000–2004, research predominantly focused on the adoption of basic digital technologies and the automation of individual processes. Change management was in its early stages, as organizations began recognizing the necessity of structured approaches to handle technological changes. The emphasis during this phase remained largely on technical implementations, with limited attention to human and organizational aspects (Becker et al., 2018).

Between 2005 and 2009, the integration of Information and Communication Technology (ICT) became more prevalent, enabling automation of more complex organizational processes. Research in this phase began emphasizing the importance of leadership and effective communication to address resistance and manage the human dimensions of technological change (Becker et al., 2018).

During the period 2010–2014, organizations increasingly focused on building dynamic capabilities to maintain competitiveness in rapidly changing technological environments. Change management frameworks began to incorporate these capabilities, shifting the focus to continuous adaptation and proactive strategies for managing change.

The period 2015–2019 marked a sharp increase in research output, driven largely by the COVID-19 pandemic. This phase witnessed the development of comprehensive change management frameworks that integrated key components such as leadership, communication,

and inclusivity. Adaptive leadership became a central focus, highlighting the need for leaders to navigate rapid technological advancements and motivate teams effectively (Al-Moaid & Almarhdi, 2024; Candrasa et al., 2024; Fischer et al., 2024).

Post-pandemic, the period from 2020 to 2025 has seen advanced developments in digital transformation strategies. Research during this phase focuses on the holistic integration of change management with digital transformation processes, ensuring that all phases—from planning to execution—are addressed comprehensively. The pandemic underscored the necessity of robust change management practices to support widespread technological adoption and mitigate resistance to change (Bellantuono et al., 2021; Ciobanu (Spânu), 2024).

The evolution of research from 2000 to 2025 highlights several critical trends and challenges. Key advancements include the incorporation of adaptive leadership, comprehensive change management frameworks, and dynamic capabilities. Challenges such as resistance to change, socio-economic influences, and technological conflicts have shaped the trajectory of this field. The pandemic further accelerated research and highlighted the need for sustainable outcomes in digital transformation, emphasizing a balance between technological innovation and human-centric strategies.

2.6. Geographic Distribution of Research

The geographic analysis reveals that European countries, particularly Germany and Italy, dominate research contributions in this field. Table 2 highlights the top 10 countries with the highest number of publications, with Germany leading with 135 publications, followed by Italy (103) and the United States (103).

Tabel 2. Countries with The Highest Number of Publications on This Topic

No	Country	Number of Publication
1.	Germany	135 documents
2.	Italy	103 documents
3.	United States	103 documents
4.	United Kingdom	101 documents
5.	China	62 documents
6.	Russia	53 documents
7.	Sweden	52 documents
8.	France	50 documents
9.	India	47 documents
10.	Spain	47 documents

Source: Scopus Analyze Search Result (per 10 January 2025)

The European continent emerges as the leading contributor to research publications on change management within the context of digital transformation. Germany ranks first, with a total of 135 publications, followed by other European nations included in the top 10; Italy (103 publications), the United Kingdom (101 publications), Sweden (52 publications), France

(50 publications), and Spain (47 publications). This high volume of publications from European countries can be attributed to several factors, including advanced digital infrastructure, a strong economic and technological foundation, proactive government policies, and EU-supported initiatives that prioritize innovation and collaboration. Moreover, the presence of prestigious educational and research institutions further fosters an environment conducive to extensive research activities and publication outputs in this field (Ostapiuk & Solsona, 2021; Pinto et al., 2023; Santos & Malta, 2024).

In the Americas, the United States holds a significant position, ranking third overall with 103 publications. The prominence of the U.S. in this research area reflects a strong alignment between cultural and economic factors and a robust focus on advancing global understanding of digital transformation processes. Research interest in this region demonstrates a consistent emphasis on addressing challenges and opportunities within change management and digital transformation frameworks. Although regional differences in research methodologies and socioeconomic contexts are evident, these factors contribute to shaping a globally relevant discourse on the subject (Panisson et al., 2023; Urs et al., 2024).

In Asia, China (62 publications) and India (47 publications) occupy fourth and ninth positions, respectively. Their growing contributions reflect rapid economic development, regional disparities, and culturally unique approaches to digital transformation. These countries also exhibit global research relevance by addressing distinct challenges related to workforce adaptation and technological integration. However, increasing the visibility and accessibility of local academic journals could enhance the impact of research from these regions. Furthermore, while the abstracts provide valuable insights into these contributions, they often lack explicit discussion on the implications for global knowledge dissemination and adoption (Abad-Segura et al., 2020; Espina-Romero et al., 2023; Liu et al., 2024).

Russia is another notable contributor to research publications on change management in digital transformation. Its achievements are driven by unique national contexts, including challenges in strategic management, adaptation to technological shifts, and economic modernization. The acceleration of digital transformation efforts during the COVID-19 pandemic, combined with government-led initiatives such as the “Digital Economy of the Russian Federation,” has strengthened research outputs. Additionally, Russia’s focus on institutional risks, technological infrastructure, and business model innovations plays a key role in shaping its academic landscape. Active participation in international collaborations and efforts to increase the global visibility of Russian academic work further contribute to its high volume of publications (Pinto et al., 2023; Santos & Malta, 2024; Urs et al., 2024).

2.7. Collaborative Pattern Among Author

The co-authorship network analysis, depicted in Figure 5, reveals clusters of collaborative research groups. Each cluster represents authors who frequently co-publish, indicating shared interests and research synergies. Notable clusters include collaborations led by Beata Gavurova and Sascha Kraus, emphasizing adaptive leadership and sustainability.

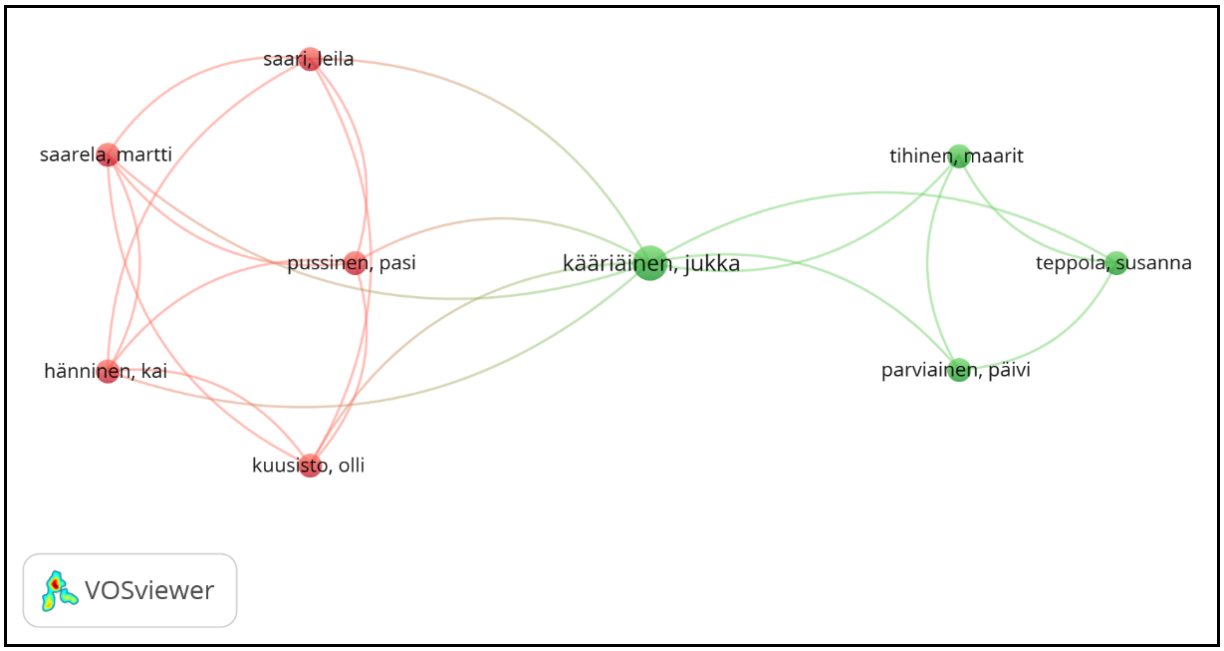

Figure 5. Co-Authorship Unit of Analysis Author

Figure 5 illustrates the co-authorship collaboration network within the field of research on change management and digital transformation. Each node on the map represents an author, with the size of the node indicating the author's contribution level, measured by the number of publications in the collaboration network. The connections between nodes represent co-publication relationships, and clusters are differentiated by colors, highlighting groups of authors with frequent and intense collaborations.

For instance:

- Green cluster: This cluster showcases strong collaborative relationships among authors such as Kääriäinen, Jukka; Tihinen, Maarit; Teppola, Susanna; and Parviainen, Päivi. Their close synergies suggest a shared focus on specific research themes or projects.
- Red cluster: This group predominantly features collaborations between authors like Saari, Leila; Saarela, Martti; and Hänninen, Kai, along with contributions from Kuusisto, Olli, and Pussinen, Pasi, forming another prominent research community.

From the visualization, several key patterns emerge:

1. Intra-cluster collaboration: Authors within a cluster exhibit intense collaboration, often reflecting common research goals or participation in coordinated projects.
2. Limited cross-cluster interaction: The lack of significant connections between clusters indicates that collaboration is often confined within specific communities, with minimal cross-community engagement.
3. Strategic insights: This visualization highlights dominant research groups, providing valuable insights into existing networks, potential influencers, and areas for fostering broader collaboration.

Understanding the patterns from the co-authorship collaboration map offers strategic opportunities to strengthen research networks, foster interdisciplinary collaborations, and identify synergies. Enhancing cross-cluster interactions could contribute to greater research diversity, increased impact, and sustainability in scientific contributions.

2.8. Thematic Patterns in Research

The thematic patterns of research on digital transformation are visualized in Figure 5, which displays the results of a keyword co-occurrence analysis with a threshold set at 1. This visualization encompasses both established and emerging themes, illustrating the interconnectedness and complexity of the research landscape in this field.

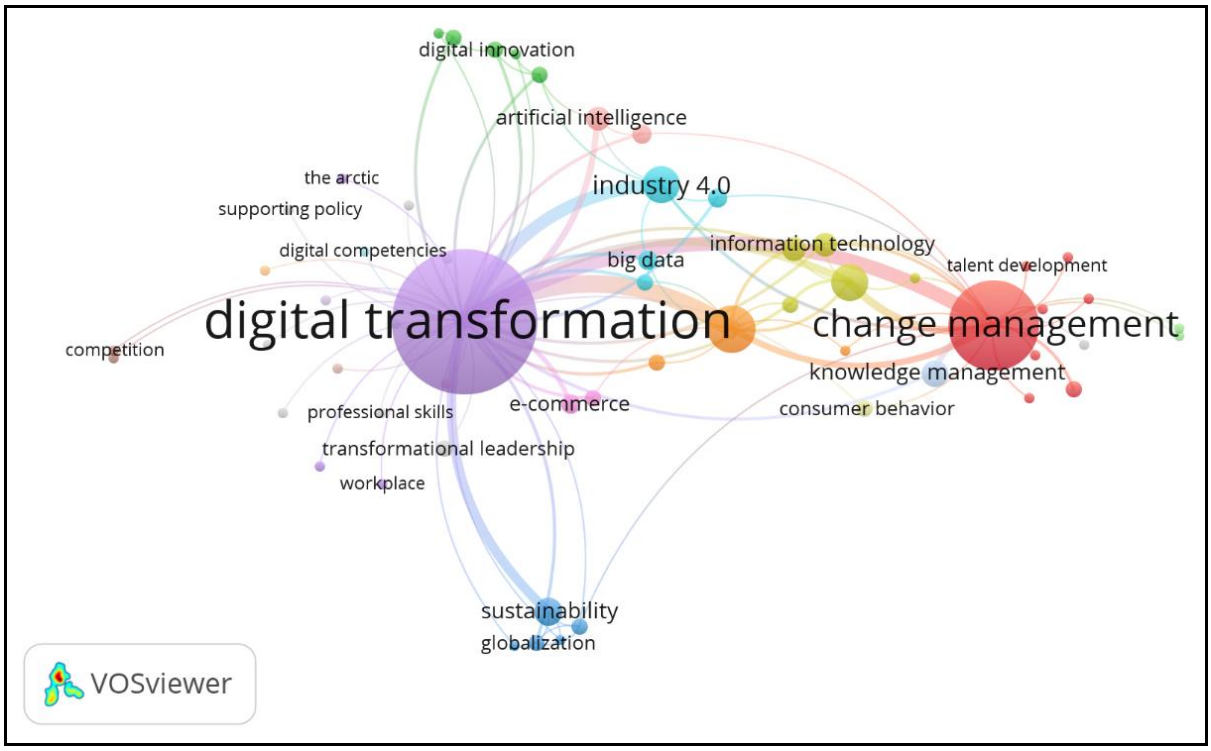

Figure 6. Network Visualization of Co-Occurance of Keyword (Treshold 1)

The network map places the keyword “digital transformation” at the center, representing its critical role as the foundation of scholarly discussions. It is closely linked to technological themes such as “Industry 4.0,” “big data,” and “artificial intelligence,” which highlight the technological drivers of organizational change. In addition to technology-focused themes, significant clusters also include “change management,” “knowledge management,” and “talent development.” These connections emphasize the integration of human resources and organizational strategies as central to the digital transformation process.

Emerging themes such as “sustainability” and “e-commerce” align with global priorities, including the pursuit of sustainable business models and the rapid expansion of digital markets. Keywords such as “digital competencies” and “transformational leadership” further underscore the importance of equipping professionals with relevant skills and adopting leadership approaches to guide organizations through complex changes. Specific themes such

as “consumer behavior” and “workplace” reflect the impacts of digital transformation on individual and organizational behaviors. Additionally, smaller but relevant clusters like “supporting policy” provide insights into niche areas that warrant further exploration.

The results of this mapping confirm that digital transformation is a multidimensional process, requiring an understanding of its interplay between technology, organizational strategies, and human elements. While widely discussed themes such as technological innovation and change management are well-represented, significant gaps remain in areas like sustainability, policy development, and employee engagement. These findings offer strategic insights for future research to explore these underrepresented themes.

The analysis also reveals a tendency for researchers to focus predominantly on one of two primary dimensions—technology or human factors—often at the expense of their interconnections. For example, studies centered on technology adoption frequently overlook organizational challenges such as fostering cultural readiness and managing employee resistance to change. Conversely, research prioritizing human dimensions may not adequately address the technical complexities of digital initiatives (Bellantuono et al., 2021; Oludapo et al., 2024).

To address this imbalance, future research should adopt a holistic perspective that integrates technological advancements with human-centered approaches. While technology accelerates the change process, its long-term success depends on factors such as employee engagement, cultural adaptation, and transformational leadership. These human-centric factors are essential for overcoming resistance to change and fostering organizational commitment.

Future studies should emphasize the development of integrative strategies that combine technological innovation with organizational adaptability. Such efforts can provide organizations with a robust framework to address the challenges of modern digital transformation while fostering sustainable and adaptive growth.

Furthermore, based on the results of Co-Occurance Threshold 3 in Figure 6, shows a Visual Overlay that provides a more detailed picture of the relationship between keywords that appear with lower frequency but are connected in a more specific context.

Tabel 3. Cluster Distribution Based on This Topic

Cluster	Keyword
Cluster 1	Agility, Automation, Information Technology, Leadership, Technological Change, Technology Adoption.
Cluster 2	Digital Transformation, E-Commerce, Metadata, Supply Change Management, Sustainability, Sustainable Development.
Cluster 3	Artificial Intelligence, Digital Economy, Innovation Management, Internet Of Things.

Cluster 4	Digital Marketing, Industry 4.0, Integration.
Cluster 5	Big Data, Digital Technologies, Innovation.
Cluster 6	Change Management, Knowledge Management.

Source: Scopus

Cluster groups indicate a set of items that have a stronger similarity or association with each other compared to other items in the dataset. Each cluster represents a closely related topic or research area based on the Co-Occurance, Co-Citation, or Co-Authors patterns of the analyzed articles. Through these clusters, the main trends in research on change management in the context of digital transformation can be identified. Meanwhile, total link strength refers to the level of strength or intensity of the relationship between two items in the network, such as keywords, authors, or interconnected documents. Total link strength gives an idea of how close the relationship is between two elements, reflecting the closeness of a particular topic or concept in the research. The greater the total link strength, the thicker the connecting line between the elements.

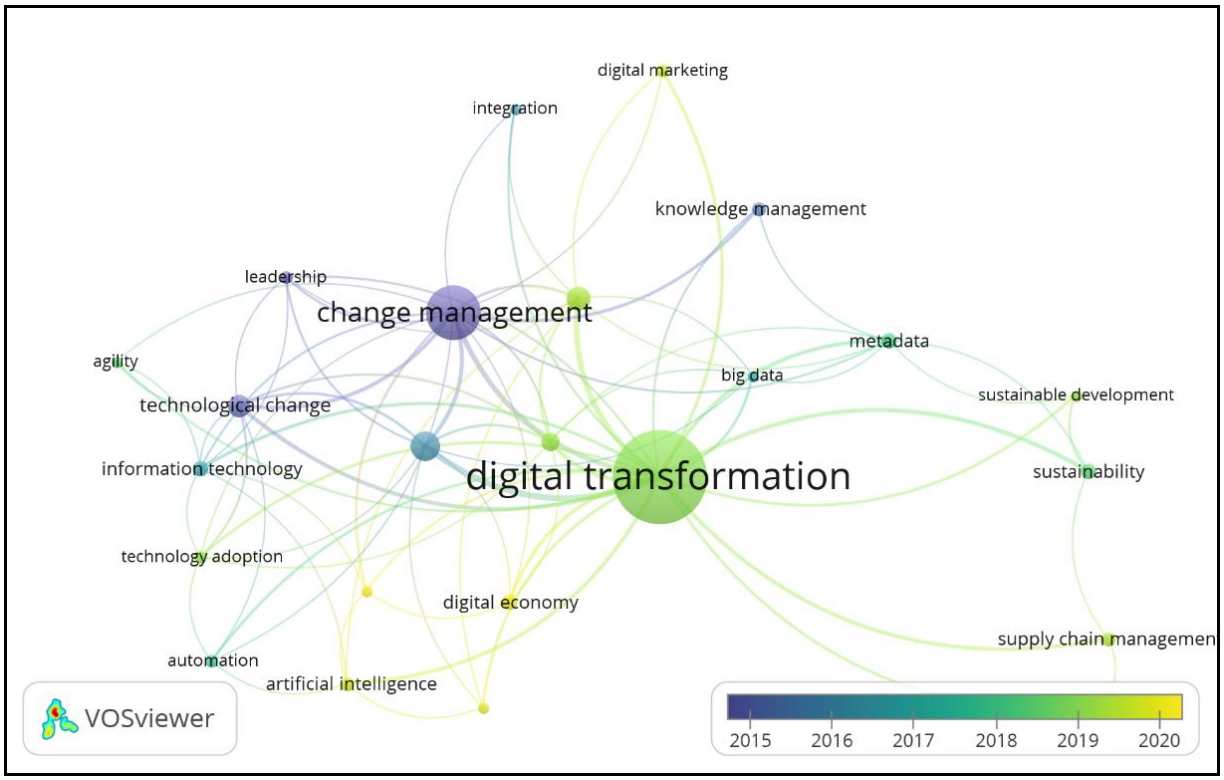

Figure 7. Visual Overlay of Co-Occurances of Keyword (Treshold 3)

Figure 7 shows an Overlay Visualization that illustrates the relationship between keywords in research related to "digital transformation" based on bibliometric analysis. The size of the circles (nodes) reflects the frequency of occurrence of the keywords in the research

documents, while the connecting lines between the nodes indicate the degree of interrelationship between the keywords based on their co-occurrence.

The largest nodes, such as "digital transformation", indicate that this is the main topic in the analyzed research. Different colors indicate clusters of related topics. For example:

- Green cluster: Relates to sustainability, supply chain management, and sustainable development.
- Blue cluster: Focuses on change management, technological change, and information technology.
- Yellow cluster: Touches on themes such as the digital economy, artificial intelligence, and automation.

The color gradations in this map show the research trends over time (2015-2020). The blue color indicates topics that were more frequently covered at the beginning of the period, such as "change management" and "technological change", while the yellow color highlights newer topics, such as "artificial intelligence", "big data", and "sustainability".

This trend indicates that the research focus has shifted from the initial concept of digital transformation towards more innovative applications of technology to support the sustainability and management of modern organizations. This map provides important insights into the evolution of digital transformation research and the potential for future development of new themes.

2.9. Implications for Future Research

The findings indicate that while substantial progress has been made, gaps remain in understanding the integration of technological and human dimensions in digital transformation. Figure 7, which provides a density overlay of keyword relationships, reveals areas that require further exploration, such as workforce well-being and the role of digital leadership.

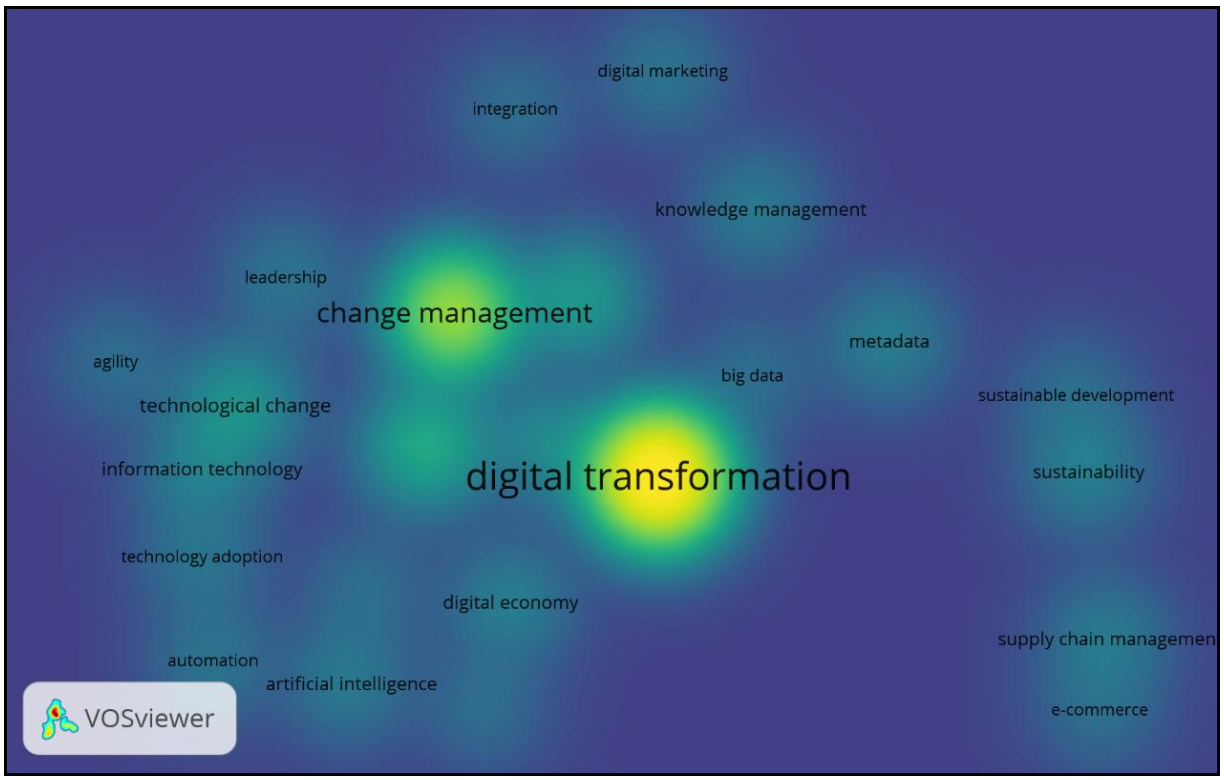

Figure 8. Density Overlay of Co-Occurances of Keyword (Treshold 3)

Based on Figure 8 above, the map shows the density of relationships between keywords in research related to "digital transformation." The yellow color indicates areas with very high relationship density. the most frequently occurring and interconnected keywords, such as "digital transformation" and "change management." Moving towards blue, the density of relationships between keywords is lower, reflecting a smaller frequency of occurrence or interconnectedness of keywords, such as "e-commerce" and "supply chain management."

This visual confirms that the topic of "digital transformation" is at the core of many studies, with a strong focus on technology, change management, and the integration of technology in various aspects of organizations and businesses. In addition, the map also shows the spread of research into areas such as "artificial intelligence," "big data," and "sustainability," indicating the diverse themes being addressed in the context of digital transformation.

The results emphasize the critical need for integrating technological and human dimensions in change management strategies to achieve sustainable digital transformation. This study also underscores the importance of fostering international collaboration and addressing underexplored areas such as employee engagement and organizational adaptability in the digital era.

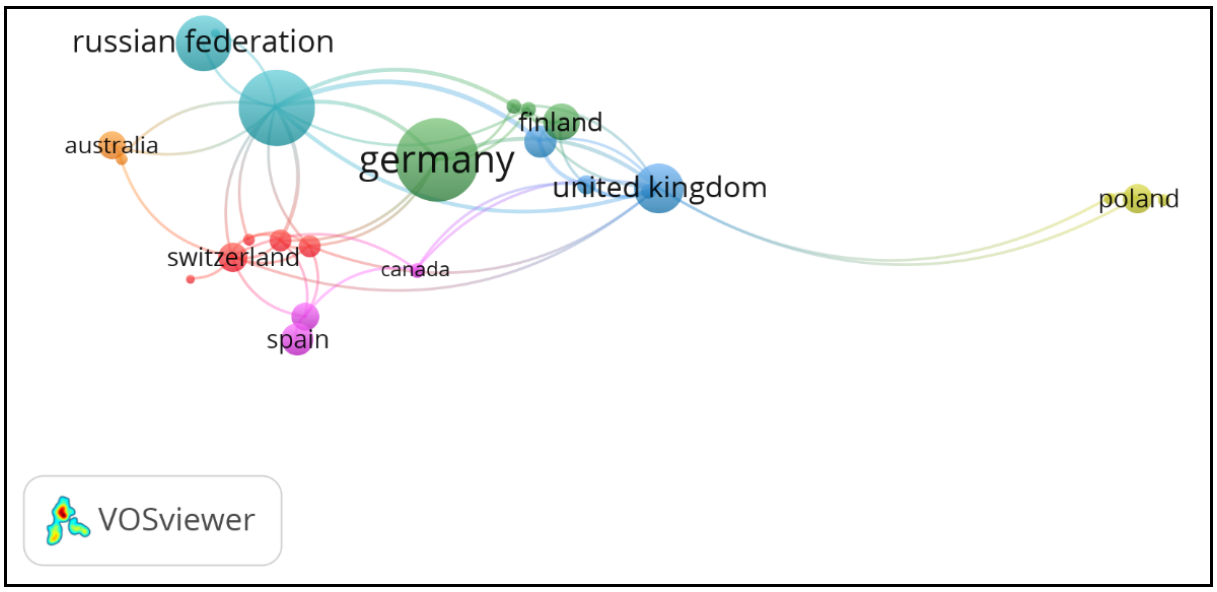

Figure 9. Bibliographic Coupling Unit of Analysis Country

Figure 9 shows the Bibliographic Coupling analysis by country unit of analysis using VOSviewer software. Germany is the center of connectivity with the largest node size, reflecting significant contributions in the analyzed research. Strong connections are seen between Germany and countries such as the United Kingdom, Finland, and Russia, indicating intensive research collaboration. The color clusters in this visualization indicate groups of countries with similar or related research relationships. In addition, countries such as Poland, Switzerland, Australia and Canada also have collaborative relationships, albeit at a lower intensity than the core countries. This analysis illustrates the pattern of scientific collaboration between countries with Germany as the main actor in the network.

CONCLUSION AND SUGGESTION

This research provides an in-depth analysis of the dynamics and development of research related to change management in the context of digital transformation through a bibliometric approach. Based on the results of the analysis, some of the main findings can be summarized as follows:

1. Trends in Research Evolution
   Research on change management in digital transformation shows a significant increase from 2000 to 2025, with a remarkable acceleration during the COVID-19 pandemic period. This period confirms the importance of a comprehensive and adaptive change management approach in facing the challenges of modern technological complexity and organizational dynamics.
2. Geographic Distribution and Research Trends
   The dominance of research comes from countries in Europe, such as Germany, Italy and the United Kingdom, which show significant contributions to the development of theory

and practice in this field. These countries are supported by superior digital infrastructure, progressive government policies, and cross-institutional academic collaboration. Meanwhile, Asian countries such as China and India are beginning to stand out as new contributors, reflecting the increasing attention to digital transformation in developing regions.

3. Author Collaboration Pattern
   The collaboration analysis shows substantial contributions from a number of lead authors such as Beata Gavurova and Sascha Kraus, who have built a strong academic collaboration network. This pattern emphasizes the importance of interdisciplinary and cross-institutional cooperation in accelerating the development of theory and understanding related to change management in the digital age.
4. Research Gap and recommendations
   This review identified significant gaps in the literature, particularly in the integration between technology and human dimensions, such as sustainability, workforce wellbeing, and adaptation strategies to complex business environments. To address this gap, future research is recommended to explore a holistic approach with a focus on digital leadership, organizational sustainability, and human engagement in the technology transformation process.

This research offers both theoretical and practical contributions. Academically, it maps key literature and provides strategic guidance for future research. Practically, the results of this study provide insights to organizational leaders in designing and implementing adaptive and comprehensive change management strategies, to ensure the continued success of digital transformation.

In addition, this study has limitations on data coverage that only comes from the Scopus database, so there may be relevant literature from other sources such as Web of Science or PubMed that is not covered. Further research is recommended to expand the data coverage by using several scientific databases at once. In addition, other methodological explorations, such as meta-analysis, case studybased qualitative approaches, or more in-depth social network analysis, may provide a richer perspective in understanding the interactions between technology, people and policy.

Finally, this study emphasizes the importance of a multidimensional approach in change management research in the era of digital transformation. By integrating elements of technology, people, and adaptive strategies, future research is expected to produce innovative solutions to support organizational sustainability amidst evolving global challenges.

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