

# Enhancing Workforce Agility for Digital Transformation in Public Sector Organizations: A System Literature Review

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## Abstract

This study presents a systematic literature review on workforce agility as a strategic capability to drive digital transformation in public sector organizations. By synthesizing studies from 2021–2025, we analyze how leadership, organizational culture, structural design, learning orientation, and technology adoption interact to enable agile behavior among civil servants. The review finds that workforce agility enhances service innovation, task performance, responsiveness, and employee well-being particularly in hybrid and crisis contexts. Key enablers include transformational/empowering leadership, goal clarity, trust in leadership, a collaborative culture, psychological empowerment, knowledge sharing, and data-driven feedback. Major barriers comprise rigid bureaucracy, digital inertia, and resistance to change. We propose a conceptual model positioning workforce agility as a core capability that links managerial practices and organizational architecture with digital transformation outcomes and sustainable public value. Policy implications highlight the development of competencies through project-based learning, adaptive job design, and agile performance systems that connect service metrics with citizen outcomes.

**Keywords:** Workforce Agility; Digital Transformation; Transformational Leadership; Organizational Culture; Knowledge Sharing; Agile Performance

## 1. Introduction

Conducting a Systematic Literature Review (SLR) on workforce agility is crucial to understanding this evolving concept and its role in organizational success. Workforce agility encompasses critical dimensions such as proactivity, flexibility, adaptability, resilience, and competence, which enable organizations to respond effectively to rapid changes in the business environment (Tessarini Junior & Saltorato, 2021). Nevertheless, definitions and measurements of workforce agility are often unclear and inconsistent across studies (Alviani et al., 2024; Utomo & Latukismo, 2022). Therefore, an SLR serves to synthesize existing definitions, theories, and measurements, providing a unified understanding and a coherent framework for further research (Alviani et al., 2024).

This SLR also helps identify the main themes within workforce agility, such as leadership agility, organizational agility, and IT-enabled agility, which are essential in fostering workforce agility within organizations (Tandon et al., 2025). Furthermore, SLR plays a vital role in identifying the evolution of research on workforce agility and revealing trends and patterns in existing literature. Several emerging themes include adaptive leadership and organizational agility, which enable more effective implementation of workforce agility (Tallon et al., 2019). By mapping the historical development of this topic, the SLR helps identify gaps in the literature that require further

exploration and provides insights into how the concept of workforce agility is applied across various organizational and industrial contexts. The SLR thus offers a clear guide for the theoretical and practical development of workforce agility and leads to a deeper understanding of its application in workplace settings (Hameed Marhoon & Omar, 2024).

An SLR also enhances methodological rigor in workforce agility research. By employing structured methodologies such as PRISMA, bibliometric analysis, and thematic synthesis, the SLR provides a systematic and comprehensive analysis of the existing literature, thereby improving the reliability and validity of findings (Latukismo et al., 2024). The combination of qualitative and quantitative analyses offers a holistic perspective on workforce agility, which is highly valuable for researchers, managers, and policymakers in formulating practical strategies to enhance workforce agility within organizations through training programs, human resource management, and strengthening organizational culture (Petermann & Zacher, 2022).

The bibliometric analysis complements the review by quantifying the distribution and impact of publications related to workforce agility across various journals, focusing on studies published up to October 24, 2025. Therefore, this SLR provides a solid foundation for developing both theory and practice of workforce agility within organizational contexts and offers a clear roadmap for future research and implementation.

## **2. Literatur Review**

Workforce agility refers to the ability of individuals and organizations to adapt quickly to changes in a dynamic work environment. Workforce agility involves various characteristics such as adaptability, proactivity, and resilience, which enable employees to respond effectively to challenges (Muduli, 2016). This concept not only encompasses the capability to perform tasks efficiently and effectively but also includes the ability to innovate, learn, and collaborate with colleagues in uncertain environments. Research indicates that an agile workforce can sustain organizational performance, enhance productivity, and foster innovation (Sherehiy & Karwowski, 2014). In this context, workforce agility becomes a crucial factor in supporting the long-term success of organizations in highly competitive markets.

The main dimensions of workforce agility are adaptability to change and resilience in facing challenges. Agile employees must be capable of multitasking, managing diverse tasks, and adapting to rapid organizational changes, including the adoption of new technologies (Petermann & Zacher, 2022). Agility also involves continuous learning, wherein employees acquire new skills aligned with evolving job demands (Yu & Pitafi, 2024). By improving the ability to adapt and manage change, organizations can maintain competitiveness and effectively face market challenges. Therefore, developing workforce agility should be a priority for organizations seeking to remain relevant and competitive in ever changing industries.

The importance of workforce agility lies not only in individuals' ability to adapt but also in how organizations design systems and policies that support workforce flexibility. Organizations must foster a culture that encourages collaboration, engagement, and self-development among employees. This includes developing empowering leadership that supports employees in continuous learning and growth (Alavi et al., 2014). Organizations must also ensure that their

internal processes promote flexibility and inter team collaboration. Consequently, workforce agility becomes a foundation for employees to sustain and thrive amidst ongoing organizational and market challenges (Muduli, 2016). Thus, creating and maintaining an agile workforce enhances organizational sustainability and innovation.

The definition of workforce agility in 24 reviewed articles, as illustrated by 15 representative studies sourced from the Scopus database, is presented as examples in this study.

Table 1. Elements of Workforce Agility Definition

No	Elements of Workforce Agility Definition	Reference (Citation)
1	Workforce agility is the ability of employees to be proactive, adaptive, and resilient in responding to rapid and unpredictable environmental changes. It includes skills such as interpreting change, developing new competencies, and collaborating effectively.	Chotisam & Muduli, 2016)
2	Workforce agility is the ability of employees to adapt and grow quickly, providing innovative solutions to various problems during any phase of a project or program.	(Sherehiy, Karwowski, & Layer, 2007; Braun et al., 2017)
3	Workforce agility is the ability of employees to quickly and actively adapt to unpredictable changes in organizational components, which is essential for success in today's competitive environment.	(Muduli, 2016; Petermann & Zacher, 2022)
4	Workforce agility is the ability of individuals and organizations to adapt quickly and effectively to changes in the business environment, which is crucial for maintaining competitiveness in dynamic markets.	(Herlina et al., 2021; Pitafi et al., 2019)
5	Workforce agility is the organization's ability to adjust its workforce in response to changing demands and environments. This concept emphasizes employee engagement, where instilling commitment to organizational goals and culture is vital to enhance workforce agility and reduce voluntary turnover.	(Alavi et al., 2014; Petermann & Zacher, 2022)
6	Workforce agility is the individual and collective capacity to navigate rapid transitions and face challenges in the workplace, characterized by adaptability, resilience, and the ability to absorb new situations while maintaining innovation under changing conditions.	(Muduli, 2016; Pitafi et al., 2019)
7	Workforce agility is the ability of workers to adapt and perform multiple tasks effectively, which is essential to achieving agility in manufacturing environments. It includes characteristics such as continuous learning, self-development, problem solving ability, and comfort with change and new technologies.	(Sherehiy & Karwowski, 2007; Pitafi et al., 2019)

8	Workforce agility (WA) is the employees' ability to adapt to changes in the work environment effectively and efficiently. It comprises two main aspects: the capacity of the workforce to optimally respond to environmental changes and the perception of challenges as opportunities.	(Muduli, 2016; Petermann & Zacher, 2022)
9	Workforce agility (WFA) is the organization's ability to respond quickly and flexibly to unexpected changes in internal and external environments, emphasizing environmental responsiveness in turbulent contexts.	(Pitafi et al., 2019; Sherehiy & Karwowski, 2007)
10	Workforce agility is the ability of employees to respond rapidly and adapt to changes in their medical work environment and evolving patient needs.	(Al Hammouri et al., 2023; Pitafi et al., 2022)
11	Workforce agility is the ability of nurses to adapt to unexpected changes, operate effectively under stress, and meet new job demands in dynamic healthcare environments.	(Sherehiy & Karwowski, 2007; Petermann & Zacher, 2022)
12	Workforce agility is the individual's ability to proactively adapt to change, learn quickly, and operate effectively in unpredictable environments. In healthcare, agile nurses are more likely to respond constructively to crises and maintain performance despite systemic dysfunction.	(Al Hammouri et al., 2023; Pitafi et al., 2019)
13	Workforce agility refers to the speed of employees' actions and flexibility toward change, enabling them to adapt quickly in ever-changing business environments. It implies that employees proactively innovate and develop their skills even before urgent needs arise.	(Muduli, 2016; Petermann & Zacher, 2022)
14	Workforce agility refers to a team's ability to adapt quickly and effectively in response to changes in the business environment, particularly in the context of AI-driven transformation. It is essential for building resilience and maintaining competitive advantage in entrepreneurial ventures.	(Alavi et al., 2014; Petermann & Zacher, 2022)
15	Workforce agility (WA) is the ability of individuals within an organization to quickly and successfully adapt to new situations, which is crucial for organizational and manufacturing agility. It includes three main characteristics: proactivity, flexibility, and resilience, which positively influence new product innovation in the manufacturing sector.	(Muduli, 2016; Petermann & Zacher, 2022)

Digital transformation in the public sector refers to the adoption of digital technologies in governmental operational processes and public service delivery to enhance efficiency,

transparency, and service quality for citizens. This process involves the implementation of emerging technologies such as artificial intelligence (AI), big data, and cloud computing to optimize decision-making, accelerate responses to public needs, and increase citizen participation in governance. In the public sector, digital transformation also aims to create a more responsive and inclusive bureaucracy that better serves public interests ((Liu et al., 2021); West, 2022).

Furthermore, digital transformation in the public sector refers to the integration of digital technologies across various aspects of organizational management and public service delivery. In the context of governance, this includes changes in organizational structures and processes, the adoption of new technologies, and transformations in how institutions interact with the public (Margetts & Dunleavy, 2021). The objective of this process is to reshape the way governments operate from traditional bureaucracies to more efficient systems that are responsive to the evolving needs of society.

The application of digital technologies in the public sector can yield significant improvements in multiple areas, ranging from government administration to public service delivery. One of the most notable examples is the implementation of e-government, which enables direct interaction between the government and citizens through digital platforms. Additionally, the adoption of technologies such as the Internet of Things (IoT) in smart city management, as well as the use of big data and AI in evidence-based policymaking, further accelerates digitalization within the sector (Tse & Wirtz, 2022).

However, digital transformation also faces substantial challenges, particularly in the public sector. One of the main obstacles is resistance to change within entrenched bureaucratic structures, as well as limitations in managing the cultural transformation required to support new technology adoption. Moreover, existing policies and regulations are often unprepared to fully accommodate the implementation of digital technologies (Liu et al., 2021). Therefore, digital transformation requires a holistic approach that encompasses changes in leadership, policy, and competency development for civil servants.

An essential component of this process is **workforce agility**, which enables employees to quickly adapt to changes driven by new technology adoption. Workforce agility is particularly critical in the context of digital transformation, as agile organizations can respond to change more rapidly and effectively, while fostering innovation in public service delivery (Petermann & Zacher, 2022).

### **3. Materials and Method**

The systematic literature review employs a bibliometric quantitative approach to evaluate the literature, identifying trends, patterns, and key research entities within the discipline. Using frameworks such as PRISMA, this approach ensures a comprehensive and replicable examination of the literature, providing a clear and transparent overview of the topic under study. A systematic literature review employing a bibliometric approach quantitatively evaluates the literature to identify trends, patterns, and key research entities within a given discipline. Using frameworks such as PRISMA, this approach ensures a comprehensive and replicable examination of the literature, providing a clear and transparent overview of the topic under study (Chotisam & Phuthong, 2025; Hadi et al., 2020). The inclusion criteria established are as follows: (1) articles

published up to October 24, 2025, (2) publications written in English, and (3) a focus on the topic of Workforce Agility. The bibliometric analysis was conducted using VOSviewer to visualize bibliographic data, analyze citation networks, author collaborations, and frequently occurring keywords, thereby revealing the intellectual structure and dynamics of the research field. The combination of bibliometric and systematic review analyses assists researchers in synthesizing empirical findings and mapping the research landscape, including identifying key contributors and emerging trends (Ni & Abdullah, 2025). The integration of these two approaches provides a comprehensive understanding of the topic (van Oyen et al., 2001; Chotisam & Phuthong, 2025; Hadi et al., 2020). The inclusion criteria established for this study are as follows: (1) Articles published up to October 24, 2025; (2) Publications written in English; and (3) Focus on the topic of Workforce Agility.

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Understanding the development, historical trajectory, and future direction of the research field is highly beneficial in interdisciplinary studies, as it provides deeper insights (Marzi et al., 2025; Wang & Yi, 2025). Bibliometric analysis also serves strategic purposes in scholarly publishing; it was first introduced by Bertrand et al. (1970) to evaluate scientific journals based on their economic weight.

The initial stage of this scholarly examination involves keyword selection, which can be performed through a macro (top-down) methodology, starting from broad search trajectories and narrowing down to more specific studies and topics. Therefore, after evaluating the limitations of previous studies and the scarcity of research addressing Workforce Agility, this study adopted the keyword "workforce agility" as the focal term in the title, abstract, and keywords of the selected articles.

In addition, the Scopus database was utilized by researchers for various investigative purposes, including conducting literature reviews, identifying subject-matter experts, and monitoring research trends.

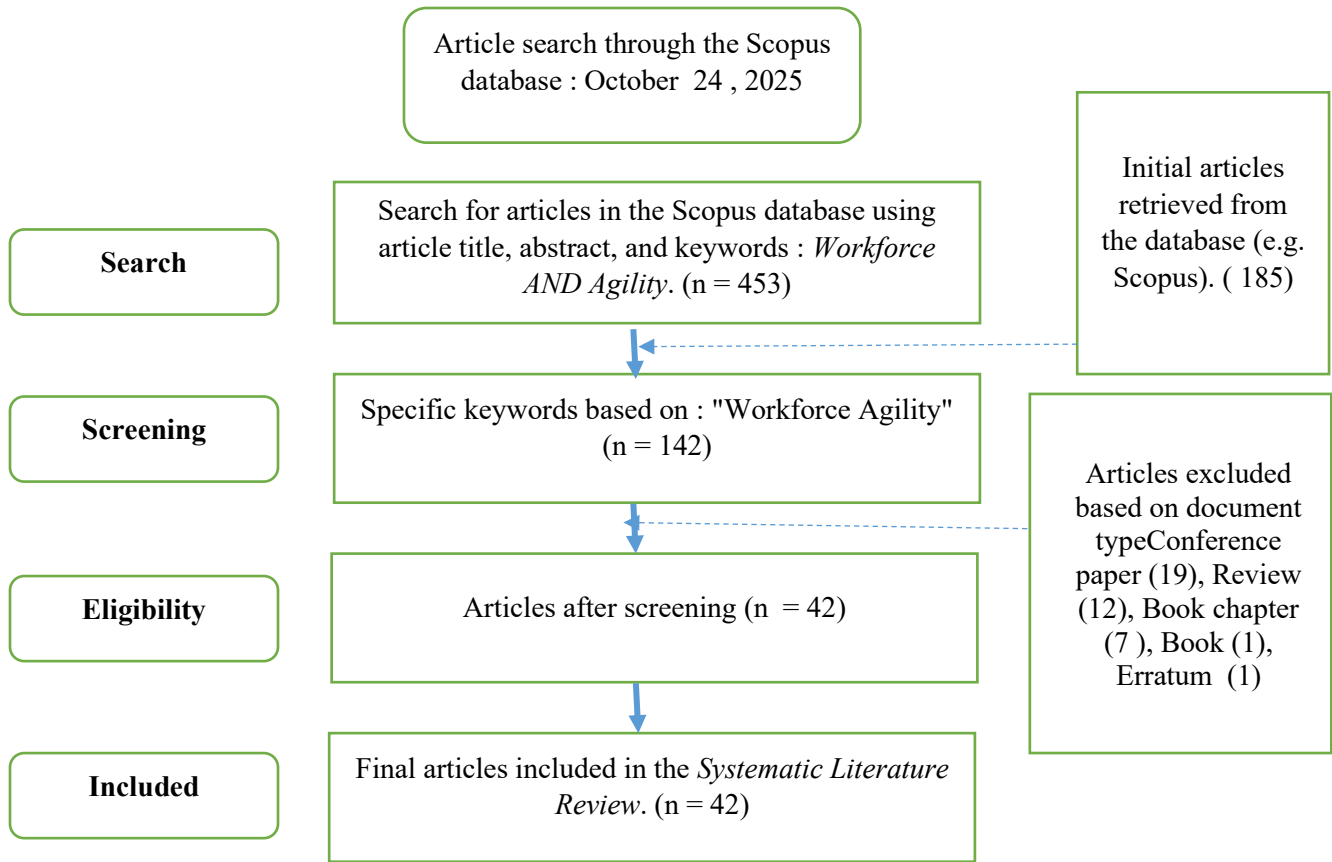


Figure 1. Information Flow of the Systematic Literature Review using PRISMA

According to the search results retrieved on October 24, 2025, from the Scopus database using article titles, abstracts, and keywords: “Workforce AND Agility”, which covered various academic disciplines and publications ranging from the first in 2001 to the most recent in 2025, the total number of articles on Workforce Agility was 453 documents (see Figure 1). Based on these findings, the screening process filtered the documents according to their classification. Articles were excluded based on document type: conference papers (19), reviews (12), book chapters (7), books (1), and errata (1), resulting in a total of 40 excluded documents. After the screening process, 42 articles categorized as journal articles were retained. These documents were then further analyzed to address the following research questions: **RQ1**: Is the exploration of Workforce Agility a subject that continues to hold significance for future scientific research?. **RQ2**: What is the current allocation of research related to Workforce Agility?. **RQ3**: What are the theoretical and practical implications from the perspective of future research?.

The findings of this study focus on the results derived from 42 articles in the Scopus database concerning Workforce Agility. The data were obtained by identifying the number of relevant articles. This study also highlights the most influential elements in Workforce Agility research, including the authors, their affiliations, and the countries involved.

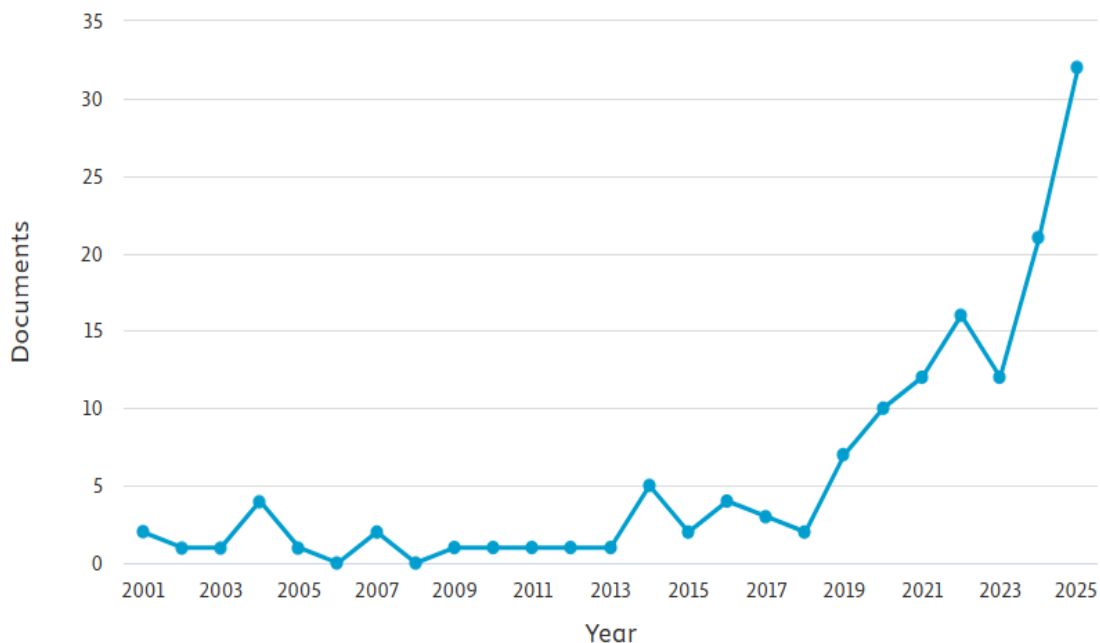
According to data retrieved from the Scopus database, it was confirmed that over more than two decades, scholarly works concerning Workforce Agility comprise 42 articles; this indicates that research on Workforce Agility remains relatively scarce.

RQ1: Is the exploration of Workforce Agility a subject that continues to hold significance for future scientific research?

Based on data from the Scopus database, it was verified that over more than two decades, scientific publications related to Workforce Agility amount to 42 articles; this demonstrates that the topic remains relatively limited in scope, as illustrated in Figure 1. The exploration of Workforce Agility began with its progressive development during the past two decades, specifically since 2001. The pioneering study was conducted by van Oyen et al. (2001), entitled “Performance opportunity for workforce agility in collaborative and noncollaborative work systems”, which marked the emergence of what is now known as the concept of Workforce Agility.

Currently, the evolution of research on Workforce Agility has attracted considerable scholarly attention, focusing on enhancing organizational value, organizational culture, employee performance, job satisfaction, work motivation, and work engagement (Rastogi & Pandita, 2025; Tawfik et al., 2025; Sarmiento Falla et al., 2025; Bhawna et al., 2025). Furthermore, Workforce Agility contributes significantly to resilience in dynamic competition (Janani & Vijayalakshmi, 2025).

Documents by year



Source : Scopus database

Figure 2. Number of Publications on Workforce Agility

Since 2001, the literature on Workforce Agility has remained limited due to the scarcity of studies published in reputable journals, thereby providing opportunities for future researchers to fill this gap. Such research is essential to deepen understanding of Workforce Agility, which influences both individual behavior and the development of the overall Workforce Agility framework. This, in turn, can facilitate a more comprehensive understanding of the practical and sustainable implementation of Workforce Agility across various sectors.

RQ2: What is the current allocation of research related to Workforce Agility?

The distribution analysis of research on Workforce Agility, based on the 42 selected articles, was conducted by classifying these studies according to categories such as country, region, affiliation, source, and author limited to the top ten articles in each classification. Understanding the distribution of research related to Workforce Agility is valuable for both academics and practitioners, as it helps outline future research agendas, particularly in advancing the sustainable development of the Workforce Agility paradigm.

Firstly, the distribution of scientific research related to Workforce Agility by country or geographical region is dominated by India with 9 articles, followed by Indonesia with 8 articles, China with 4 articles, the United States with 4 articles, Italy with 3 articles, Malaysia with 3 articles, South Africa with 3 articles, Egypt with 3 articles, Germany with 2 articles, and Pakistan with 2 articles.

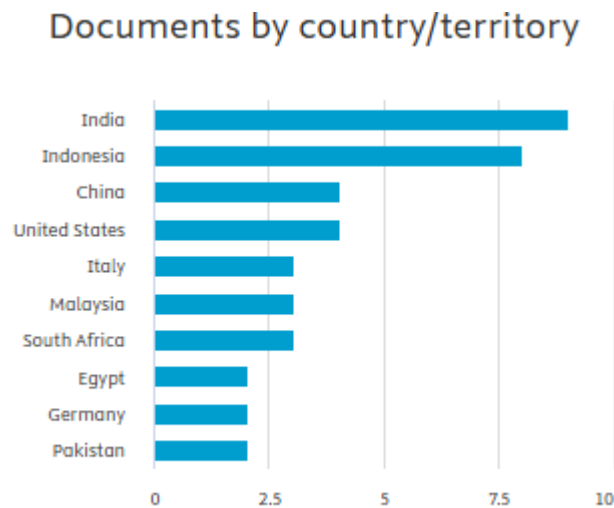


Figure 3. Number of Articles by Country or Region (Top 10 Countries)

On the other hand, countries such as Germany and Pakistan rank at the lower end with relatively fewer documents. This indicates that although the topic of Workforce Agility has attracted global attention, certain countries have been more active in this field than others. India and Indonesia play a dominant role in Workforce Agility research. Other countries also contribute, albeit to a lesser extent, reflecting the growing global interest in this subject.

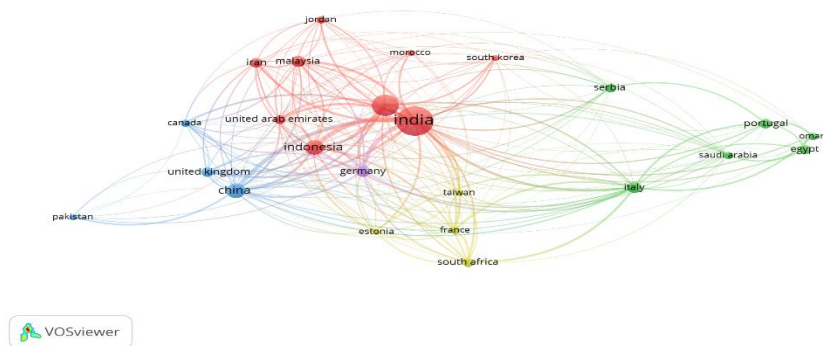


Figure 4. Visualization of Intercountry Network

These findings further reinforce the idea that the principles of Workforce Agility are not only of interest to Asian countries such as Indonesia and Malaysia, but also attract attention in various European and African countries. The concept of Workforce Agility is highly relevant across nations striving to integrate agility principles and develop more inclusive leadership models.

Secondly, the allocation of affiliations related to Workforce Agility, based on institutional associations, is predominantly represented by the following institutions: University of Johannesburg (South Africa, 2 articles), Beni-Suef University (Egypt, 2 articles), Free University of Bozen-Bolzano (Italy, 2 articles), Manipal Academy of Higher Education (India, 2 articles), University of Central Florida (United States, 2 articles), Indian Institute of Technology Madras (India, 2 articles), University of Novi Sad (Serbia, 2 articles), T.A. Pai Management Institute (India, 2 articles), College of Engineering and Computer Science (United States, 2 articles), and East-European Center for Research in Economics and Business (ECREB) (Belarus, 2 articles) (see Figure 5).

### Documents by affiliation

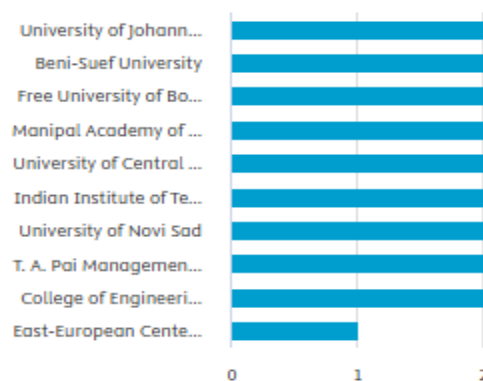


Figure 5. Documents by Affiliation

The distribution of Workforce Agility affiliations in the top ten publications based on institutional association illustrates that the topic is not confined to academic institutions in developed countries;

rather, developing nations are also contributing significantly to the discourse on Workforce Agility.

Thirdly, the allocation of sources related to Workforce Agility shows that the majority of publications appear in the following journals: Acta Psychologica (2 articles), Applied Sciences (Switzerland) (2 articles), BMC Nursing (2 articles), Frontiers in Psychology (2 articles), Advances in Science, Technology and Engineering Systems (1 article), Asia Pacific Management Review (1 article), Asian Business and Management (1 article), Asian Social Science (1 article), Economic Innovation and Economics Research Journal (1 article), Edelweiss Applied Science and Technology (1 article), and German Journal of Human Resource Management (1 article) (see Figure 6).



Figure 6. Documents per Year by Source

Fourthly, the distribution of research on Workforce Agility based on authorship reveals no clear dominance. Among the top ten authors, seven of them Janani, M.; Karwowski, W.; Kraus, S.; Sarmiento Falla, J.F.; Tawfik, A.F.; Utomo, F.C.; and Vijayalakshmi, V. each authored two articles, while three authors Al Fariz, A.B.; Alavi, S.; and Ali, M.I. each contributed one article (see Figure 7).

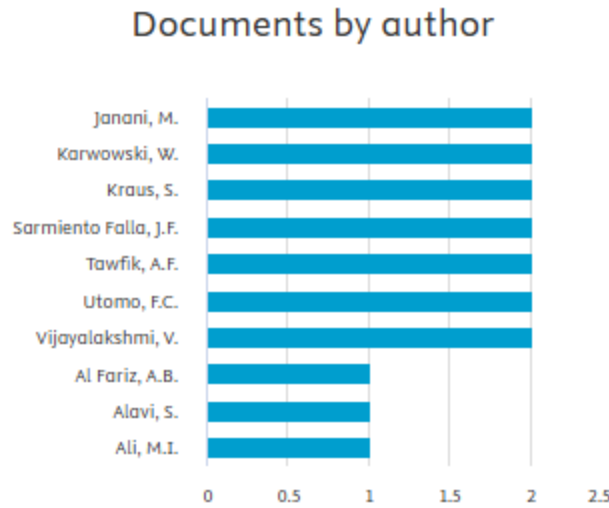


Figure 7. Documents by Author

RQ3: What are the theoretical and practical implications from the perspective of future research? An examination was conducted on 42 manuscripts collected from the Scopus repository. VOSviewer was utilized to visualize and analyze the data, demonstrating that these results may have both theoretical and practical implications for future research on Workforce Agility. Metadata analysis using VOSviewer assists researchers and practitioners in gaining deeper insight into the assumptions and findings related to Workforce Agility.

The bibliometric analysis results obtained through VOSviewer reveal which variables have been extensively studied by previous researchers and which variables remain underexplored, thus serving as a foundation for future studies. From a practitioner's perspective, the results of this literature analysis can guide the sustainable implementation of Workforce Agility in future organizational settings.

Based on Figure 8, the frequency of keyword occurrences includes: workforce agility (29), agility (12), employment (8), human experiment (6), agile workplace (5), psychological (5), resilience (5), organizational agility (5), performance (5), talent management (4), leadership (4), agile manufacturing (3), systematic literature review (3), workplace spirituality (2), and dynamic capability (2).

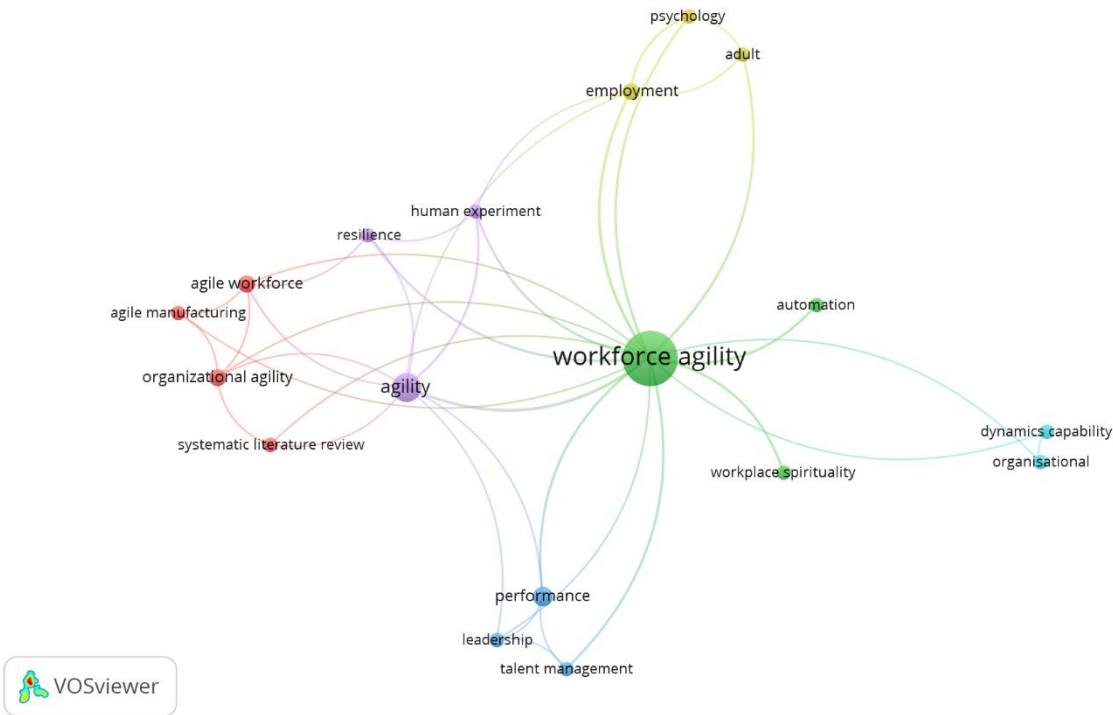


Figure 8. Co-occurrence Framework and Representation of Key Terms

Table 2. Author Keywords

Rank	Keyword	Total Link Strength
1	Workforce Agility	29
2	Agility	12
3	Employment	8
4	Human Experiment	6
5	Agile Workplace	5
6	Psychology	5
7	Resilience	5
8	Organizational Agility	5
9	Performance	5
10	Talent Management	4
11	Leadership	4
12	Agile Manufacturing	3
13	Systematic Literature Review	3
14	Workplace Spirituality	2
15	Dynamic Capability	2

Based on the mapping and examination of previous studies, several key interrelationships were identified. Workforce Agility serves as the central construct, most strongly associated with agility and employment. The primary enablers include performance, leadership, and talent management.

Organizational dimensions are linked to organizational agility and agile manufacturing. The psychological foundations relate to psychology and resilience, while workplace spirituality represents a smaller but noteworthy value oriented dimension.

From a practical standpoint, the direction of application emphasizes strengthening empowering leadership, skill based talent management, and agile work and process design. This study contributes to addressing gaps in prior research and provides a more comprehensive understanding of Workforce Agility in enhancing organizational performance, which can be explored in broader, cross-sectoral contexts along with its theoretical and practical implications.

Workforce Agility characterized by adaptability, rapid learning, and multiskilled capabilities accelerates the adoption of technology and automation, reduces lead time, and increases output, all of which directly enhance competitiveness and economic growth (Muduli, 2017; Sherehiy & Karwowski, 2014).

#### **4. Results**

This study provides essential insights into the evolution of Workforce Agility based on 42 articles analyzed through a systematic literature review (SLR). The findings indicate that although the concept of Workforce Agility has been recognized since 2001, it remains relatively novel, with limited research published in reputable journals (Tessarini Junior & Saltorato, 2021).

According to the distribution of articles, India and Indonesia contributed the most to this body of literature, with nine and eight articles respectively, signifying the importance of the topic in developing countries (Tawfik et al., 2025).

Furthermore, thematic analysis revealed several essential dimensions of Workforce Agility, including leadership agility, organizational agility, and IT enabled agility (Tandon et al., 2025). These dimensions are key factors in implementing effective Workforce Agility across organizations, particularly in response to rapid technological and business changes.

These findings reinforce the notion that Workforce Agility is a vital element in enhancing organizational competitiveness and resilience to both internal and external changes (Muduli, 2017; Petermann & Zacher, 2022).

The results also indicate that Workforce Agility plays a pivotal role in accelerating digital transformation within the public sector. Agile organizations are better equipped to adopt new technologies and adapt work processes to meet the demands of digitalization. Key factors such as transformational leadership, innovative culture, and technological infrastructure support have been identified as major drivers of digital transformation (Tandon et al., 2025; West, 2022).

Moreover, cross-unit collaboration and digital skills among civil servants contribute to improved efficiency, service innovation, and public policy quality (Margetts & Dunleavy, 2021). Workforce Agility thus enhances not only the responsiveness of public institutions to change but also strengthens accountability and transparency in public service through the use of digital technologies (Tandon et al., 2025).

## **5. Discussion**

The Relationship between Workforce Agility and Digital Transformation in the Public Sector Workforce Agility plays a crucial role in supporting digital transformation within the public sector. Agile employees enable organizations to respond swiftly to change, adapt to new technologies, and improve public service quality. In public institutions often constrained by rigid bureaucratic structures Workforce Agility serves as an essential mechanism to ensure that digital transformation progresses effectively (Muduli, 2016).

Transformational leadership that empowers and develops employees is equally critical. It accelerates technology adoption and supports successful digital transformation. Additionally, a collaborative and knowledge-sharing organizational culture contributes significantly to enhancing workforce adaptability.

By implementing flexible and collaborative work systems, public organizations can expedite digitalization and improve operational efficiency (Tandon et al., 2025).

## **6. Conclusions, Implications, And Recommendations**

Based on the literature analysis, it can be concluded that although Workforce Agility has evolved significantly in recent years, substantial gaps remain in understanding how to measure and practically implement it across various industries. Workforce Agility extends beyond individual adaptability it encompasses the organizational capacity to foster agility through supportive leadership, adaptive management, and technology based policies (Muduli, 2017; Petermann & Zacher, 2022).

Organizational agility serves as a catalyst for enhancing market responsiveness, fostering innovation, and ensuring long-term sustainability. Therefore, Workforce Agility should be viewed as a strategic element of human resource management, emphasizing skill development, work flexibility, and empowering leadership to secure long-term organizational success (Sherehiy & Karwowski, 2014).

Workforce Agility has proven to be a crucial foundation for achieving digital transformation in the public sector. Adaptive and innovative personnel can effectively implement new technologies, improve service efficiency, and strengthen public value. Digital skills, team collaboration, and empowering leadership are essential prerequisites for building agile public organizations (Petermann & Zacher, 2022).

Moreover, the success of digital transformation depends on balancing structural reform with human capacity development. Public organizations must therefore enhance investments in digital training and project-based learning programs to prepare civil servants to adapt to emerging technological challenges (Liu et al., 2021).

This study offers significant theoretical and practical implications.

From a theoretical perspective, deeper understanding of Workforce Agility dimensions such as leadership agility, organizational agility, and IT enabled agility provides valuable insights for developing a more comprehensive theoretical framework of workforce adaptability within organizations (Sherehiy & Karwowski, 2014).

From a practical perspective, the findings suggest that organizations should focus on cultivating an agility-supportive culture, adopting new technologies, and engaging employees in continuous learning processes. Technology based training programs and inclusive leadership are essential components in preparing the workforce to address unexpected challenges and ensuring long-term organizational success (Rastogi & Pandita, 2025).

Theoretically, this study identifies Workforce Agility as a critical mediator between digital leadership, organizational culture, and public transformation performance (Muduli, 2016). Practically, it emphasizes the need for governments to strengthen flexible job design, outcome based performance appraisal systems, and learning oriented work environments (Rastogi & Pandita, 2025).

Sustainable digital transformation also requires greater synergy between public policy and technological innovation. Governments must create collaborative and adaptive work ecosystems, enabling public sector employees not only to use technology but also to innovate in developing digital solutions for society (Tse & Wirtz, 2022).

Based on the findings obtained, several recommendations are proposed for future research and practice. First, further studies are needed to investigate the relationship between various dimensions of workforce agility such as leadership agility and organizational agility within a broader context, including their influence on individual performance and overall organizational outcomes. In addition, organizations should focus more on developing human resource strategies that integrate agility as a core component of long-term strategic planning (Tawfik et al., 2025).

Second, organizations should develop policies that encourage employee engagement in selfdevelopment and continuous learning by providing access to the latest technologies and relevant training programs to enhance their adaptability to change. Lastly, further research is required on the implementation of workforce agility in other sectors, such as healthcare and education, to determine whether the principles identified in the manufacturing sector can be effectively applied elsewhere (Petermann & Zacher, 2022).

This study also recommends that public organizations strengthen their human resource development policies with a focus on digital agility. Training programs should emphasize enhancing digital competencies, transformational leadership, and innovation oriented culture (West, 2022). Moreover, it is suggested that agile performance systems be implemented to align civil servant performance indicators with data-driven public service outcomes and social impact. For future research, cross country empirical studies are necessary to test the model linking workforce agility, digital readiness, and public sector organizational performance. Governments should also develop incentive mechanisms to encourage active employee participation in digital initiatives (Tandon et al., 2025).

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