International Journal of Computational and Experimental Science and ENgineering (IJCESEN)

Vol. 11-No.2 (2025) pp. 2515-2524
http://www.ijcesen.com

ISSN: 2149-9144

Research Article

Computational Framework of Workforce Agility: A Performance and Scientific Mapping Analysis

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Article Info:

DOI: 10.22399/ijcesen.1855
Received : 28 February 2025
Accepted : 12 April 2025

Keywords :

Workforce Agility,
bibliometric analysis,
performance analysis,
scientific mapping,
agile workforce.

Abstract:

In response to the continuously changing business environment driven by globalization, volatile markets, advancements in technology, and the switch to hybrid work culture after COVID-19, workforce agility emerged. The existing literature on workforce agility presents ambiguity for researchers, with conflicting views among authors, some suggesting that the field is still maturing, lacks systematic study, and remains underexplored. This paper gives an in-depth examination of the present state of workforce agility research, clarifying existing ambiguities and different viewpoints in the literature. This study utilized bibliometric analysis, including performance analysis and scientific mapping, on 223 workforce agility documents (2001–October 2024) from Scopus. Biblioshiny and VOSviewer software were employed. Literature on workforce agility was minimal in the early 2000s but began to grow steadily from 2015 onward. Business and management contributed 27.5% of the publications, with India emerging as the most productive country. This study identifies the most prolific authors, key themes, collaborating countries, and highlights multidisciplinary approaches to workforce agility. This study presents an up-to-date bibliometric analysis of workforce agility, conducted without imposing limitations on subject areas or document types, to provide a comprehensive view.

1. Introduction

In today's rapidly evolving business environment, organizations face constant pressure to adapt and respond to technological advancements, shifting consumer preferences, and unexpected global disruptions. This climate of change has brought workforce agility into sharp focus as a critical organizational asset. The ability of employees to swiftly adjust to new tasks, situations, and shortcomings is known as workforce agility, and it has been recognized as vital for sustaining competitive advantage, strengthening productivity, and promoting innovation. Unlike traditional workforce models that emphasize stability and predictability, an agile workforce is dynamic, resilient, and responsive, enabling organizations to thrive amid uncertainty. The concept of agility in the workforce initially emerged from manufacturing [1-14] and supply chain management [7] theories, where flexibility and responsiveness were vital to maintaining competitive advantage. Scholars later examined its dimensions, drivers [1], and implications across various fields, including human

resources [15-21], organizational practices [16], performance [22-28], education [8] and healthcare [15]. The growing acknowledgment of agility as an essential competency that empowers organizations to forecast, respond to, and effect market dynamics is reflected in this surge in scholarly interest. Additionally, the need for adaptability was further emphasized by the COVID-19 epidemic, since companies worldwide had to adapt quickly to remote work and digital transformation. To better understand the evolution, trends, and intellectual structure of workforce agility research, a bibliometric analysis provides a comprehensive perspective. This method, which systematically examines research patterns using quantitative measures, enables the identification of influential publications, prominent authors, recurring themes, and emerging areas within the literature. This article attempts to map the workforce agility research landscape by using bibliometric tools to trace its development, identify current hotspots, resolve ambiguities in the literature, and investigate possible future routes. This analysis not only contributes to theoretical development but also offers practical insights for leaders aiming to foster an agile workforce capable of meeting the demands of a volatile world.

2. Review of literature

The current business environment is volatile and complex [22]. Workforce agility has been described as a management strategy that allows companies to respond quickly and effectively to threats and opportunities arising from a competitive and unstable business environment [24] An agile workforce is a well-trained and flexible workforce that can adapt quickly and easily to new opportunities and market circumstances [16]. The emphasis on employees and workforce agility has become an attribute of sustainable and competitive organizations simultaneously [22]. Although workforce agility is increasingly recognized as essential for achieving competitiveness [1], the existing literature presents ambiguities and divergent perspectives among researchers. According to Muduli, (2013b)[18] and Alavi & Wahab, [3] "There is a lack of literature", Muduli & Pandya, (2018)[19] assert that "the concept of workforce agility has not yet been systematically studied." Similarly, Tessarini Junior & Saltorato, (2021b)[25] emphasize that this field of study is still in its maturing stage. Although previous bibliometric [27] and systematic literature reviews [18] [on workforce agility have provided valuable insights, many have focused on specific disciplines, or time frames, limiting the scope of their findings. This study focuses on filling these gaps and clarifying ambiguity through a comprehensive bibliometric analysis, establishing an interdisciplinary and complete overview of the development and major themes in workforce agility research By including data from recent years and all relevant fields, this analysis aims to uncover emerging themes and connections that inform both academic research and practical applications, positioning it as a foundational resource for future studies on workforce agility.

Objectives

1. To comprehensively analyze workforce agility research, examining trends and addressing ambiguities and conflicting views to clearly understand the field's current landscape.
2. To identify and map key research themes and suggest directions for future research.
3. To examine the collaboration networks among authors and countries in the field of workforce agility.

3. Research Methodology

This study applies bibliometric analysis to accomplish the objectives. Bibliometric analysis is a widely used and rigorous method for examining large volumes of scientific data, offering insights into the evolution of a field while highlighting emerging areas [11] and impact within a certain field [23]. This study opted for the Scopus database as it is acknowledged as the biggest abstract and citation database for academic publications [13] and, in comparison to the Web of Science, its citation analysis is quicker and encompasses a greater quantity of papers [14]. To explore relevant studies in the area of investigation, we searched Scopus using a combination of keywords including TITLE-ABS-KEY "workforce agility," "employee agility," "agile workforce," "agile employee," "agile worker," "human resource agility," Each search term was selected as it was used synonymously in practice and academic literature to refer to workforce agility [25]. We encompassed a period of 24 years, i.e., 2001 to October, 2024, because literature related to workforce agility is available from 2001 in Scopus. The bibliometric search yielded a total of 227 articles, which were systematically refined and screened for relevance to the key theme of this research. subject area and document type restrictions were not applied, thereby offering a broad overview of the literature and capturing interdisciplinary perspectives and trends across multiple fields. Only English-language articles were included to ensure consistency in data analysis, with documents in other languages excluded. By encompassing all subject

areas and focusing on English-language publications, this study provides a holistic perspective on the progression and thematic evolution of workforce agility research. The last dataset was derived from 223 publications, out of which 4 were eliminated in the screening and assessment of their eligibility for inclusion in the bibliometric analysis.

4. Results and Discussion

These 223 Bibliometric analyses of the articles and reviews were done by using the Biblioshiny package in the R software [5] and VOS viewer. The Biblioshiny analysis function generates insights into research outputs by analysing annual scientific production, identifying the most prolific authors, commonly used keywords, leading journals, and patterns of country collaboration, all related to the selected research topic [11]. VOS viewer examines co-authorship, co-occurrence, citation, bibliographic coupling, and co-citation links, presenting them in one of three visualization formats: network, overlay, or density [7]

4.1 Performance analysis

Analysis of trends in workforce agility

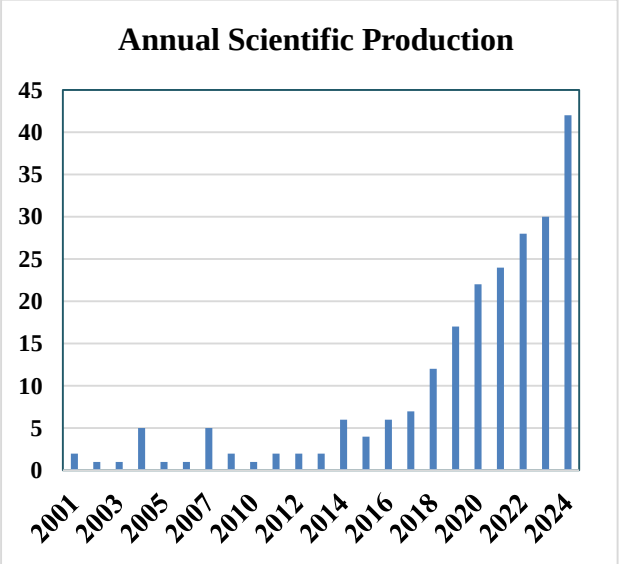

Figure 1. *Annual Documents Production on Workforce Agility 2001-2024*

The data shows a clear upward trend in the number of documents published on workforce agility over the years. Workforce agility research started with fewer than five publications annually in the early 2000s and has experienced a steady rise since 2015. In 2024, there has been a remarkable surge, with 42 publications recorded so far, despite the year still having two months to conclude. This trend suggests a growing academic and industry interest in workforce agility, likely driven by the increasing need for adaptable workforces in dynamic business environments. A significant rise is evident from 2018 onward, with publication counts reaching their peak in 2024 as shown in Figure 1. This recent surge indicates that workforce agility is a highly relevant and rapidly evolving field, reflecting its importance in current organizational strategies. The consistency in growth over the past few years underscores its establishment as a critical area of study, suggesting that it will continue to be a focal point for future research.

Analysis of Scientific Production

The data provides a comprehensive overview of the literature on workforce agility from 2001 to October 2024. A total of 223 documents have been published across various sources, including 177 different journals, books, and other formats, with an impressive annual growth rate of 14.15. The average age of documents is relatively low at 4.59 years, indicating that much of the research is recent and likely responding to contemporary workplace challenges. Each document receives an average of 21.14 citations, suggesting that the field has garnered significant academic attention and is well-cited in related studies.

Figure 2. *Scientific Production*

The dataset contains a total of 11547 references, which highlights the extensive research base underpinning this field. Regarding content, there are 690 authors' keywords, indicating a wide range of themes and research angles within workforce agility. The field is marked by substantial collaboration, as shown by the 548 authors, with only 29 single-authored documents and an average of 2.98 co-authors per document as shown in Figure 2. International collaboration is also notable, with

20.18% of documents featuring co-authorship across borders, underscoring workforce agility's global relevance.

Subject-wise Analysis of Document Distribution

The subject area analysis of workforce agility literature reveals its multidisciplinary nature, with a strong focus on business and management, which accounts for 27.5% of the documents. This dominance reflects the importance of workforce agility in organizational management, strategy, and human resource practices. Significant contributions also come from computer science (13.7%) and engineering (11.1%), indicating that technological advancements and engineering practices are key drivers in developing agile workforces, especially as digital tools and automation become integral to modern workplaces. Social sciences (11.1%) and decision sciences (9.2%) add further insights, emphasizing the relevance of social behaviours, decision- making processes, and organizational strategies in shaping workforce agility. Psychology (6.3%) highlights the human elements of agility, such as adaptability, resilience, and motivation.

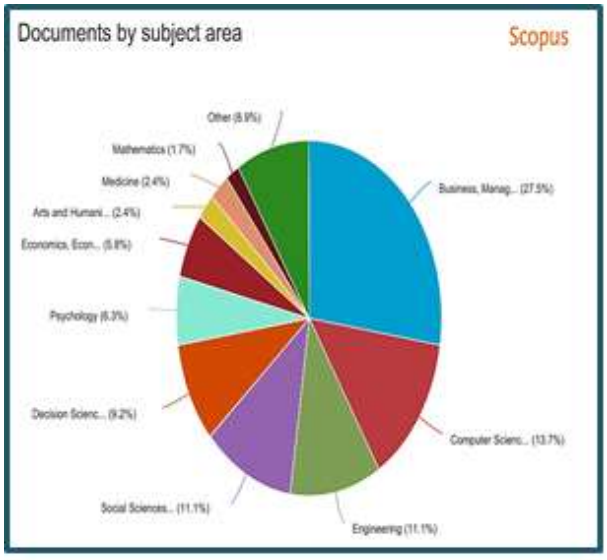

Figure 3. *Subject-wise Distribution of Documents*

Smaller contributions from fields like economics (5.8%), arts and humanities (2.4%), medicine (2.4%), and mathematics (1.7%) as shown in Figure 3 demonstrate that workforce agility is of interest even in healthcare, economic policy, and theoretical modelling. The "Other" category, comprising 8.9%, suggests that workforce agility is relevant across various less prominent fields as well. Overall, the distribution underscores workforce agility as a versatile and cross-disciplinary area of study, engaging a wide range of academic and professional perspectives. Overall, this distribution shows that workforce agility is a cross-disciplinary topic with implications in technology, organizational management, psychology, and social sciences, making it a highly versatile area of study that appeals to diverse academic and professional interests.

Analysis of Most Prolific Authors

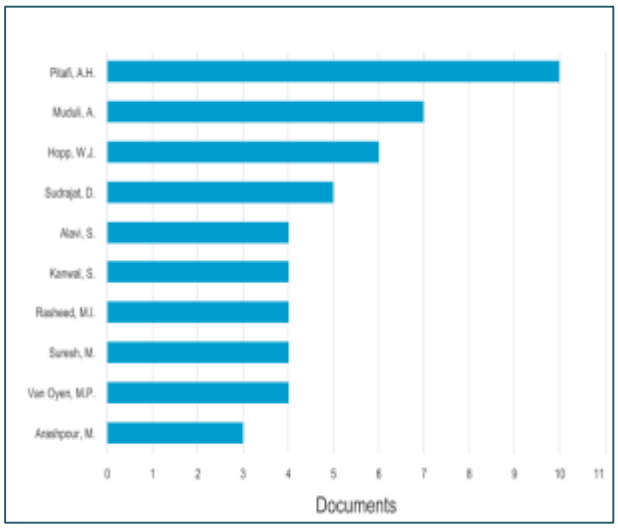

Figure 4. *Top 10 Most Productive Authors*

Figure 4 reveals key insights into the distribution of research contributions on workforce agility. The most prolific author, Pitafi, A.H., has published 10 documents, followed by Muduli, A. with 7, and Hopp, W.J. with 6. This suggests that these individuals are central figures in workforce agility research, frequently contributing to the field's development. Several other authors, including Sudrajat, D., Alavi, S., Kanwal, S., Rasheed, M.I., Suresh, *I* each with 4-5 documents, represent a dedicated core group actively shaping this area of study.

Analysis of Most Productive Countries

As shown in Figure 5 in terms of geographical distribution, India leads with 50 documents, indicating a strong research focus on workforce agility within the country, likely due to its rapidly evolving economy and need for adaptable workforces. The United States follows with 37 publications, reflecting its ongoing interest in agility, especially given its focus on innovation and technology. China (25), the United Kingdom (17), and Indonesia (13) also contribute significantly, showing workforce agility's relevance across diverse economies and organizational contexts. Countries like Germany (12), Iran (11), Malaysia (11), Pakistan (10), and South Africa (9) further demonstrate that workforce agility research is not limited to a specific region but has garnered global attention. This widespread interest may be driven by globalization and the universal need for

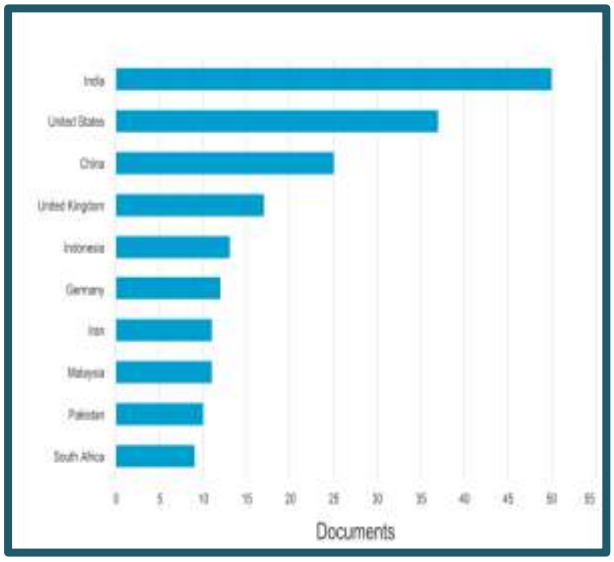

Figure 5. *Top 10 Most Productive Countries*

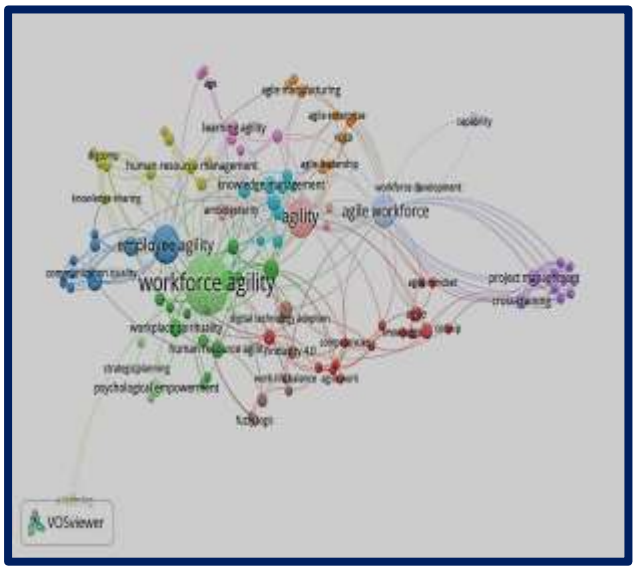

Figure 6. *Author's Keywords Co-Occurrence*

organizations to remain agile in a competitive, rapidly changing environment. Overall, the data highlights that workforce agility is a topic of international interest, with active contributions from both individual authors and countries worldwide.

4.2 Scientific Mapping

Analysis of Author's Keywords Co-Occurrence

As shown in Figure 6, the co-occurrence network visualization of author keywords in workforce agility research reveals 13 interconnected clusters, each representing distinct thematic areas. The green cluster centers around "workforce agility," linking to concepts such as "employee agility," "workplace spirituality," and "psychological empowerment," which highlights the human and psychological aspects of agility. The yellow cluster is focused on "human resource management" and "knowledge sharing," connecting workforce agility to organizational learning and HR's role in promoting agility. The blue cluster emphasizes "communication quality" and "e-learning," pointing to the importance of effective communication and ongoing training in developing an agile workforce. The purple cluster centers on "project management" and "cross-training," underscoring the value of these practices in creating a flexible and capable workforce. The red cluster includes terms like "agile mindset," "agile work," and "competencies," reflecting the role of mindset and skill development in supporting agility initiatives. The pink cluster is associated with "learning agility" and "knowledge management," suggesting that continuous learning and adaptability are key components of workforce agility. Additionally, the light blue cluster relates to "strategic planning," linking agility with long-term organizational goals. The brown cluster includes "Industry 4.0" and "digital technology adoption," showing a focus on technological adaptation. The orange cluster revolves around "agile manufacturing" and "VUCA" (volatility, uncertainty, complexity, and ambiguity), emphasizing agility in rapidly changing environments. The light green cluster focuses on "psychological empowerment" and "fuzzy logic," highlighting decision-making flexibility. The dark blue cluster includes "capability" and "workforce development," suggesting skill-building as a critical component of agility. The dark purple cluster emphasizes "age" as a factor in agility, and the light purple cluster relates to "ambidexterity," linking agility to an organization's ability to balance exploration and exploitation. Overall, this visualization reveals a multidisciplinary approach to workforce agility, with themes spanning organizational, psychological, technical, and environmental dimensions.

Analysis of Authors Co-Citation

Red Cluster (Core Authors in Workforce Agility) is the largest and most central cluster, with prominent authors such as Muduli A., Gunasekaran A., Sherehiy B., Breu K., and Alavi S., who are key contributors to workforce agility and related topics as shown in Figure 7. This cluster likely represents foundational research in agile workforce concepts, supply chain agility, and the impact of agility on organizational performance. These authors are widely recognized and frequently co-cited in this research area. Authors like Pitafi A.H., Leonardi P.M., and Davison R.M. appear in Green Cluster (Organizational Behaviour and Agile Leadership). This group focuses on the human and behavioural aspects of workforce agility, including leadership,

communication, and digital transformation. The frequent co-citations suggest a connection between agile leadership and workforce adaptability, with this cluster addressing organizational behaviour within the context of agility. Blue Cluster (Psychological Empowerment and Motivation): Key authors in this cluster include Ryan R.M., Deci E.L., and Sarstedt M., who are well-known for their work on motivation, self-determination theory, and statistical methodologies. This cluster's presence indicates an emphasis on the psychological empowerment and motivation of employees as a crucial factor for workforce agility. Authors in this group are often cited in studies that explore how motivation drives agility at an individual level.

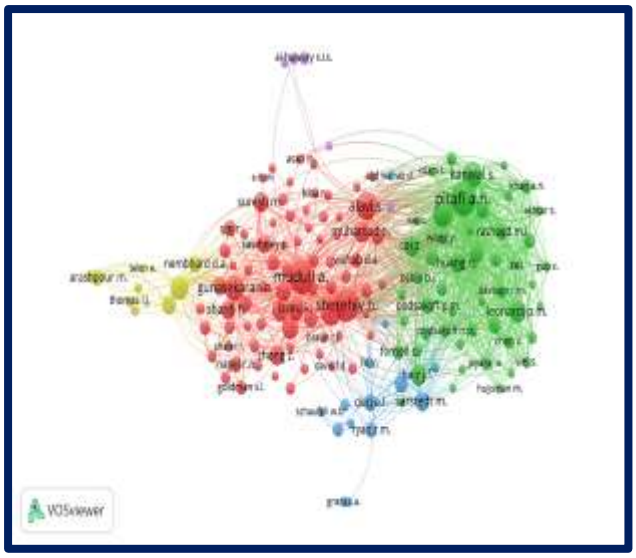

Figure 7. *Co-Citation Network Visualization of Authors*

Authors like *Nembhard* D.A., Thomas L.J., and Arashpour M. are central in the Yellow Cluster (Operational Efficiency and Flexibility), focusing on operational flexibility and efficiency. The research in this cluster addresses agility in industrial settings, particularly in manufacturing and construction, where operational flexibility and efficiency are critical. Co-citations here highlight the practical applications of agility in industries that rely on adaptability. Purple Cluster (Strategic Agility and Knowledge Management): With authors such as Al-Hawary S.I.S., this smaller cluster seems to focus on strategic agility and knowledge management within agile organizations. This indicates a focus on how strategic planning and knowledge-sharing capabilities enhance workforce agility, allowing organizations to respond effectively to market changes. Light Blue Cluster (Methodological Approaches in Agile Research) cluster includes authors like Grant C.A., who are often cited for their contributions to research methodologies. It reflects a methodological aspect, where these authors provide frameworks or tools for studying workforce agility, particularly emphasizing survey design, data analysis, or measurement tools. Each cluster represents a different thematic focus in the study of workforce agility, from foundational concepts to specific applications, behavioural aspects, and methodological approaches.

Analysis of Thematic Map

Project Management emerges as a highly developed and relevant motor theme, with its high density (221.5) as shown in table 1 indicating a mature and structured area that plays a critical role in managing agile teams. Enterprise social media and Agility also stand out in this quadrant, with notable centrality and density, underscoring their importance in enabling communication and flexibility within agile workforces. As shown in Figure 8 niche Themes like Learning Agility and capability exhibit high density but low centrality, suggesting specialized areas that are deeply developed but not yet widely integrated with the broader research field. Learning Agility, with its unique focus, represents a vital skill within workforce agility that has gained depth independently.

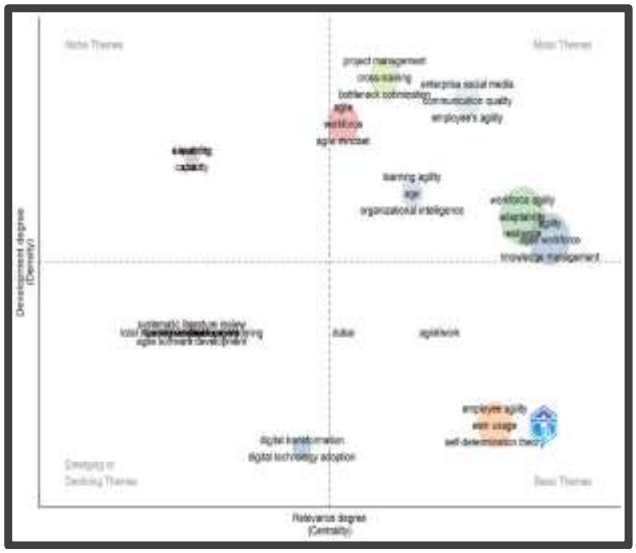

Figure 8. *Thematic map*

Meanwhile, Emerging or Declining Themes such as Systematic Literature Review and Digital Transformation show lower density and centrality, which might indicate either early-stage research or a waning focus. Finally, Basic Themes like Workforce Agility and Employee Agility demonstrate high centrality but moderate density, highlighting their foundational role in the field. These themes are essential frameworks for understanding workforce agility, though they are less intensively developed than motor themes.

Table 1. *Thematic Clusters in Workforce Agility: Centrality and Density Analysis*

Cluster	Callon Centrality	Callon Density	Rank Centrality	Rank Density	Cluster Frequency
agile	0.25	88.942	9.5	15	30
agility	2.008	53.71	17	10	91
workforce agility	1.568	61.061	16	11	162
workforce development	0	50	4	6	2
employee agility	1.283	46.933	15	2	48
agile work	0.5	50	13	6	2
dubai	0.25	50	9.5	6	2
impact	0	50	4	6	2
total interpretive structural modelling	0	50	4	6	2
systematic literature review	0	50	4	6	5
learning agility	0.354	71.875	12	12	10
capability	0	75	4	13.5	4
project management	0.287	221.5	11	17	25
human resources agility	0	50	4	6	2
e-learning	0	75	4	13.5	4
enterprise social media	0.555	90.646	14	16	20
digital transformation	0.133	45	8	1	7

Table 2. *Quadrant Analysis of Workforce Agility Literature*

QUARDENT	CLUSTERS	NO. OF ARTICLES
MOTOR	Workforce agility	106
	agility	71
	enterprise social media	20
	project management	25
	agile	24
	learning agility	10
BASIC THEMES	employee agility	48
	agile work	2
	dubai	2
NICHE THEMES	e-learning	4
	capability	2
EMERGING OR DECLAINING THEMES	digital transformation	7
	systematic literature review	5
	human resource agility	2

As shown in table 2, the quadrant analysis provides a structured overview of the thematic landscape in the existing literature on workforce agility. themes are classified into four quadrants: Motor Themes, Basic Themes, Niche Themes, and Emerging or Declining Themes. This classification offers insight into the development, relevance, and maturity of different research topics within the domain.

Motor Themes: Motor themes represent the core driving forces in this domain, with workforce agility-106 articles and agility-71 articles emerging as central concepts. Practical applications like project management-25 articles and enterprise social media-20 articles highlight their significant role in supporting organizational agility. Additionally, methodological aspects such as agile-24 articles and learning agility-10 articles emphasize the importance of adaptability and skills in fostering agility.

Basic Themes: Basic themes are foundational but less developed. Employee agility-48 articles play a key role in focusing on individual adaptability, while topics like agile work-2 articles and Dubai-2 articles remain underexplored, suggesting opportunities for further research or context-specific studies.

Niche Themes: Niche themes are specialized areas with limited focus. Topics such as e-learning-4 articles and capability-2 articles indicate targeted research that complements agility practices. These areas hold potential for growth as supporting mechanisms for workforce agility.

Emerging or Declining Themes: Emerging or declining themes showcase trends that are either gaining or losing relevance. Digital transformation-7 articles reflect a growing interest in leveraging technology to enhance agility, while systematic literature review-5 articles points to efforts in consolidating existing research for structured future studies. Human resource agility-2 articles, although underexplored, highlight the evolving role of HR practices in fostering adaptability within organizations.

Analysis of Country Collaboration

Figure 9. *Country Collaboration Map*

Figure 9 reveals active international research networks in workforce agility, with the USA, China, India, and the United Kingdom emerging as central collaborators. China shows a particularly strong partnership with Pakistan, while the USA maintains frequent connections with China and the United Kingdom, indicating its role in intercontinental and regional research efforts. India is also a key player, collaborating with China and several European nations, underscoring its engagement in global research. European countries, particularly France, Germany, and the United Kingdom, demonstrate robust cross-national collaborations, linking with both regional and distant partners. South Africa, Malaysia, and Indonesia have notable connections, with Indonesia's strong collaboration with the Netherlands highlighting specific regional interests. This network showcases the global and interdependent nature of workforce agility research, with diverse partnerships across Asia, North America, and Europe, reflecting the worldwide focus on organizational adaptability.

5. Discussion

The study examined the trends in workforce agility through bibliometric analysis covering a period from 2001 to October 2024. Using performance analysis and scientific mapping methodologies, 223 papers in total were identified and reviewed. While Muduli & Pandya, (2018)[18] highlighted a lack of systematic exploration in workforce agility, our findings confirm this gap in workforce agility research while also highlighting a growing interest in this area, as evidenced by steadily increasing publication trends since 2015. Initially, the field saw fewer than five publications annually in the early 2000s, but interest has surged over the years, culminating in a remarkable rise in 2024, with 42 publications recorded so far, despite two months remaining in the year. This growth may reflect the rising importance of the topic due to recent global challenges, technological advancements, or changes in organizational demands, such as the need for agility, digital transformation, or workforce resilience. A core group of prolific authors, such as Pitafi, A.H., Muduli, A., and Hopp, W.J., play significant roles in shaping the field, offering a foundation of expertise and influential perspectives. In this analysis, we extracted data without excluding any subject areas to capture the literature on workforce agility in a truly multidisciplinary way. The dominance of fields like Business, Management, and Accounting reflects workforce agility's critical role in organizational strategy and human resource practices, and a growing interest in technological and engineering domains, suggesting a shift toward interdisciplinary approaches that were previously underexplored. Additionally, the insights from Social Sciences and *P*sychology point to the importance of understanding human adaptability, resilience, and decision-making in fostering an agile workforce. India, the United States, and China are leading contributors, highlighting these nations' emphasis on enhancing workforce adaptability in response to rapidly changing business environments. The co-occurrence network visualization of the author's keywords reveals a comprehensive and interconnected framework, with 13 distinct clusters representing various thematic dimensions. However, contrary to earlier claims of limited practical frameworks [3], our keyword analysis suggests that recent studies have begun addressing this gap, signalling a shift in research priorities. Central themes include the human and psychological facets of agility, such as "workforce agility" and "psychological empowerment," and the role of organizational practices like "human resource management" and "knowledge sharing. Thematic analysis reveals a balanced landscape, some themes like Project Management and Enterprise social media are highly relevant and developed, serving as motor themes, while other specialized areas like Learning Agility represent niche expertise. Moreover, our thematic analysis aligns with [25] identifying 'digital transformation' as a maturing research focus. USA, China, India, and the United Kingdom are central to the collaborative landscape and backbone of international research networks, bridging diverse regions and facilitating knowledge sharing.

6. Conclusion

The findings reveal a growing scholarly interest in the field, particularly since 2015, with significant

contributions from management and social sciences and an increasing focus on interdisciplinary approaches in technology and engineering. While earlier studies highlighted conceptual ambiguities and limited systematic exploration, this analysis demonstrates progress, with emerging themes like digital transformation maturing and practical frameworks gaining attention. By mapping the research landscape, this study not only validates prior observations of fragmentation but also highlights the field's evolution and potential future directions. It provides a foundation for scholars to explore emerging themes, bridge disciplinary gaps, and develop holistic frameworks to advance workforce agility research and practice.

7. Future research directions

- Capacity and E-learning" emerged as a niche theme in thematic analysis, future studies could explore how digital learning resources contribute to skill development, adaptability, and overall agility in a constantly changing work environment.
- Enterprise Social Media (ESM), presents an opportunity to explore how effective internal communication enhances employee agility. Research could look at the role of ESM in fostering a collaborative culture that supports quick decision-making and responsiveness.
- Digital transformation is an emerging or declining theme, research could explore how digital adoption impacts workforce agility.
- Future research could focus on how agile methodologies in software development influence workforce agility practices in non-IT sectors.

8. Limitations of the study

Although this study is innovative, it needs to be noted that this research has a few limitations. Firstly, the study relies solely on the Scopus database, which may not cover all relevant articles on workforce agility. Future research could benefit from including data from these additional databases to improve comprehensiveness and reliability. Secondly, this analysis included only the English language publications, papers written in other languages were not put into consideration for the final analysis.

Author Statements:

- **Ethical approval:** The conducted research is not related to either human or animal use.
- **Conflict of interest:** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper
- **Acknowledgement:** The authors declare that they have nobody or no-company to acknowledge.
- **Author contributions:** The authors declare that they have equal right on this paper.
- **Funding information:** The authors declare that there is no funding to be acknowledged.
- **Data availability statement:** The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

References

[1] Ajgaonkar, S., Neelam, N. G., & Wiemann, J. (2022). Drivers of workforce agility: a dynamic capability perspective. In *International Journal of Organizational Analysis* 30(4); https://doi.org/10.1108/IJOA-11-2020-2507

[2] Alavi, S., & Wahab, D. A. (2013a). A review on workforce agility. *Research Journal of Applied Sciences, Engineering and Technology*, *5*(16), 4195–4199. https://doi.org/10.19026/rjaset.5.4647

[3] Alavi, S., & Wahab, D. A. (2013b). A review on workforce agility. *Research Journal of Applied Sciences, Engineering and Technology*, *5*(16), 4195–4199. https://doi.org/10.19026/rjaset.5.4647

[4] Alviani, D., Hilmiana, Widianto, S., & Muizu, W. O. Z. (2024). Workforce agility: a systematic literature review and research agenda. *Frontiers in Psychology*, *15*(September). https://doi.org/10.3389/fpsyg.2024.1376399

[5] Aria, M., & Cuccurullo, C. (2020). *Package 'bibliometrix' R topics documented:* 68. https://cran.r-project.org/web/packages/bibliometrix/bibliometrix.pdf

[6] Arruda, H., Silva, E. R., Lessa, M., Proença, D., & Bartholo, R. (2022). VOSviewer and Bibliometrix. *Journal of the Medical Library Association: JMLA*, *110*(3), 392–395. https://doi.org/10.5195/jmla.2022.1434

[7] Butcher, T. (2007). Supply chain knowledge work: Should we restructure the workforce for improved agility? *International Journal of Agile Systems and Management*, *2*(4), 376–392. https://doi.org/10.1504/IJASM.2007.015838

[8] DAMIAN, D. I., & RADU, C. (2024). *Preparing Students for the Future of Work: The Role of Agility in Higher Education*. *November*, 242–256. https://doi.org/10.24818/imc/2023/02.04

[9] Das, K. P., Mukhopadhyay, S., & Suar, D. (2023). Enablers of workforce agility, firm performance, and corporate reputation. *Asia Pacific Management Review*, 28(1), 33–44. https://doi.org/10.1016/j.apmrv.2022.01.006

[10]Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133;285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

[11]Fakruhayat, M., & Rashid, A. (2023). How to Conduct a Bibliometric Analysis using R Packages: A Comprehensive Guidelines. *Journal of Tourism, Hospitality & Culinary Arts*, 15(1), 24–39.

[12]Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses. *The FASEB Journal*, 22(2), 338–342. https://doi.org/10.1096/fj.07-9492lsf

[13]Guz, A. & Rushchitsky, Jeremiah. (2009). Scopus: A system for the evaluation of scientific journals. *International Applied Mechanics.* 45. 351-362. 10.1007/s10778-009-0189-4.

[14]Huang, C. C. (1999). An agile approach to logical network analysis in decision support systems. *Decision Support Systems*, 25(1), 53–70. https://doi.org/10.1016/S0167-9236(98)00091-8

[15]Mohamed El-Sayed, N., Mahmoud Abdel-Azeem, A., & Khaled Abd El-Aziz zaki, A. (2022). The Relationship between Workforce Agility and Staff Nurses' Innovative Work Behavior at Critical Care Units. *Egyptian Journal of Health Care*, 13(3), 560–573. https://doi.org/10.21608/ejhc.2022.253723

[16]Muduli, A. (2013a). Workforce Agility: A Review of Literature. *IUP Journal of Management Research*, 12(3), 55–65.

[17]Muduli, A. (2013b). Workforce Agility: A Review of Literature. *IUP Journal of Management Research*, 12(3), 55–65.

[18]Muduli, A. (2017). Workforce agility: Examining the role of organizational practices and psychological empowerment. *Global Business and Organizational Excellence*, 36(5), 46–56. https://doi.org/10.1002/joe.21800

[19]Muduli, A., & Choudhury, A. (2024). Exploring the role of workforce agility on digital transformation: a systematic literature review. *Benchmarking: An International Journal.* https://doi.org/10.1108/BIJ-02-2023-0108

[20]Muduli, A., & Pandya, G. (2018). Psychological Empowerment and Workforce Agility. *Psychological Studies*, *63*(3), 276–285. https://doi.org/10.1007/s12646-018-0456-8

[21]Munteanu, A. I., Bibu, N., Nastase, M., Cristache, N., & Matis, C. (2020a). Analysis of practices to increase the workforce agility and to develop a sustainable and competitive business. *Sustainability (Switzerland)*, *12*(9). https://doi.org/10.3390/SU12093545

[22]Munteanu, A. I., Bibu, N., Nastase, M., Cristache, N., & Matis, C. (2020b). Analysis of practices to increase the workforce agility and to develop a sustainable and competitive business. *Sustainability (Switzerland)*, *12*(9). https://doi.org/10.3390/SU12093545

[23]Passas, I. (2024). Bibliometric Analysis: The Main Steps. *Encyclopedia*, *4*(2), 1014–1025. https://doi.org/10.3390/encyclopedia4020065

[24]Tessarini Junior, G., & Saltorato, P. (2021a). Workforce agility: A systematic literature review and a research agenda proposal. *Innovar*, *31*(81), 155–168. https://doi.org/10.15446/innovar.v31n81.95582

[25]Tessarini Junior, G., & Saltorato, P. (2021b). Workforce agility: A systematic literature review and a research agenda proposal. *Innovar*, *31*(81), 155–168. https://doi.org/10.15446/innovar.v31n81.95582

[26]Kalpana, Ponugoti, Shaik Abdul Nabi, Panjagari Kavitha, K. Naresh, Maddala Vijayalakshmi, & P. Vinayasree. (2024). A Hybrid Deep Learning Approach for Efficient Cross-Language Detection. *International Journal of Computational and Experimental Science and Engineering (IJCESEN)*, *10*(4). https://doi.org/10.22399/ijcesen.808

[27]Utomo, F. C., & Latukismo, T. H. (2022). Trends and Patterns in Workforce Agility Literature: A Scopus-based Bibliometric Analysis. *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications*, *13*(4), 211–224. https://doi.org/10.58346/JOWUA.2022.I4.014

[28]Varshney, D., & Varshney, N. K. (2020). Workforce agility and its links to emotional intelligence and workforce performance: A study of small entrepreneurial firms in India. *Global Business and Organizational Excellence*, *39*(5), 35–45. https://doi.org/10.1002/joe.22012