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Bibliometric Study on Multigenerational Work Design

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ABSTRACT

This study presents a comprehensive bibliometric analysis of global research on multigenerational work design using data retrieved from the Scopus database between 2005 and 2025. Using Bibliometrix (R) and VOSviewer, the study maps the conceptual, collaborative, and intellectual structures of the field through keyword co-occurrence, author and institutional collaboration networks, citation analysis, and temporal evolution mapping. The results reveal three major thematic clusters: workforce dynamics (leadership, workplace climate, work environment), generational characteristics (motivation, work values, millennials, personnel management), and intergenerational interaction (social support, human experience, relational factors). The overlay visualization indicates a shift from early descriptive studies of generational traits toward more applied research emphasizing workplace design, digital adaptation, and psychological well-being. Collaboration patterns show fragmented author communities but strong contributions from the United States, Australia, Canada, and India. Highly cited works in the field highlight foundational theories on generational differences, motivational diversity, and intergenerational relations. Overall, this study clarifies the intellectual foundations of multigenerational work research and identifies opportunities for interdisciplinary integration, cross-national collaboration, and applied organizational interventions.

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1. INTRODUCTION

The accelerating transformation of the global workforce has brought renewed scholarly attention to the dynamics of multigenerational work design. Technological advancement, evolving social values, demographic transitions, and the digitalization of work environments have resulted in the coexistence of multiple generational cohorts within a single organizational ecosystem [1]–[3]. This convergence has heightened the need for a deeper understanding of how Baby Boomers, Generation X, Millennials, and Generation Z differ in their work values, motivation drivers, expectations, and patterns of digital engagement [1], [4], [5]. As organizations become increasingly dependent on digital communication and collaborative platforms, the psychological and behavioral responses of each generation toward technology-mediated work warrant systematic exploration.

Existing literature indicates that generational differences influence a wide

range of workplace outcomes, including job satisfaction, performance, turnover intention, learning adaptability, and perceptions of leadership. Studies such as [6]–[9] highlight measurable distinctions in work ethic, intrinsic and extrinsic motivations, and interpersonal expectations across generations. At the same time, workplace modernization driven by automation, remote work systems, and digital communication tools has reshaped patterns of social interaction and identity formation at work [7], [10], [11]. These conditions create both opportunities and tensions: while younger cohorts tend to demonstrate higher digital fluency, older generations often rely on experience-based reasoning and structured work routines. Understanding how these generational traits intersect with contemporary organizational design is therefore critical for building cohesive and productive work environments.

Despite the rapid expansion of research in this domain, the intellectual structure of multigenerational work design studies has remained fragmented. Scholars from psychology, human resource management, sociology, gerontology, and digital behavioral science have contributed to the field, but the interdisciplinary nature of their publications complicates the ability to observe overarching trends. Bibliometric analysis offers a robust method for synthesizing this complexity. Visual network mapping—such as co-authorship networks, co-citation structures, institutional collaborations, and keyword clustering—enables researchers to identify major thematic streams, influential authors, emerging trends, and gaps in the knowledge base. The dataset in the provided file demonstrates the richness of the field, featuring highly cited works on generational differences in work values, intergenerational relations, workforce motivation, and organizational performance.

Given the continuous evolution of digital ecosystems and the increasing diversity of the global workforce, a comprehensive bibliometric study is needed to clarify how scholarship on multigenerational work design has developed across two decades. By examining publication patterns, thematic evolution, citation influence, and geographic collaboration networks, such analysis provides not only an overview of past contributions but also a strategic framework for future research directions. This approach is particularly relevant as organizations confront challenges related to hybrid work settings, cross-generational digital learning, and the alignment of diverse employee expectations with long-term organizational objectives. Therefore, the purpose of this study is to map, analyze, and interpret global research trends on multigenerational work design using bibliometric methods, where systematic evaluation of keyword networks, citation structures, and collaboration patterns is employed to deepen understanding of the field's intellectual landscape, identify dominant and emerging themes, and highlight potential research gaps that may guide future scholarly and managerial agendas.

2. METHODS

2.1 Design

This study employed a quantitative bibliometric approach to systematically map the intellectual structure and research development on multigenerational work design. Bibliometric analysis was selected because it provides an objective and replicable method for examining large bodies of literature, identifying thematic clusters, mapping collaboration networks, and tracing the evolution of key research streams over time. The methodological framework integrates performance analysis and science mapping using tools commonly applied in bibliometric studies, including Bibliometrix (R package) and VOSviewer. The procedures undertaken in this study are described in detail below.

2.2 Data Source and Search Strategy

The Scopus database was chosen as the primary source of bibliographic data due to its extensive coverage of international peer-reviewed journals, conference proceedings,

and multidisciplinary publications, and it is widely recognized for its high level of bibliographic accuracy and compatibility with bibliometric tools, making it suitable for trend analysis and network visualization. The search strategy targeted research related to multigenerational work design by incorporating keywords such as "multigenerational workforce," "generational differences," "work design," "intergenerational relations," and related constructs identified in foundational [12]–[14], with the search period covering all available years up to 2025 to align with the dataset referenced in the uploaded manuscript. After executing the search query, the initial dataset underwent a multi-step cleaning process to improve consistency and analytical precision, which included removing duplicate entries to avoid citation inflation, standardizing author names with spelling variations or inconsistent initials, merging synonymous keyword forms to ensure accurate co-occurrence representations, and normalizing institutional names that appeared in multiple abbreviated forms. These procedures ensured the reliability and analytical robustness of the final dataset used for subsequent network analyses.

2.3 Data Extraction and Preparation

To enhance analytical accuracy, a rigorous data cleaning procedure was conducted prior to visualization. Variations in author names, inconsistent institutional.

Following the cleaning process, the full bibliographic records—including titles, author names, abstracts, affiliations, keywords, publication years, citation counts, and references—were exported in BibTeX and CSV formats compatible with Bibliometrix and VOSviewer, then organized into structured fields to support quantitative analysis. In accordance with bibliometric protocols, several key variables were extracted, including author information (names, co-authorship links, and productivity), document characteristics (publication year, source title, and document type), keywords (author-provided and indexed terms), citation metrics (local and global citation scores), and affiliation and country data to map institutional and national collaboration patterns. Collectively, these variables formed the analytical foundation for the performance indicators and network visualizations presented in the Results section.

2.4 Bibliometric Analysis

The Bibliometrix package in R was used for descriptive performance analysis, which included examining the distribution of publications across years, identifying authorship patterns, determining the most influential journals, and assessing citation metrics. Bibliometrix also generated thematic evolution insights and author productivity patterns using bibliometric principles such as Lotka's Law, Bradford's Law, and related indicators. These analyses provided a foundational understanding of the overall landscape of multigenerational work design studies before deeper network exploration was conducted.

To complement this, VOSviewer (version 1.6) was employed to generate science-mapping visualizations that illustrate relationships among authors, institutions, countries, and conceptual themes. Three main network types were produced: (a) the Keyword Co-Occurrence Network, which identifies clusters of frequently co-occurring keywords and reflects dominant thematic structures—corresponding to Figures 1–3 in the uploaded file; (b) the Co-Authorship Network, which illustrates collaborative patterns among authors and institutional linkages as shown in Figures 4 and 5; and (c) the Country Collaboration Network, mapping international cooperation through shared authorship, represented in Figure 6. These visualizations enabled the identification of influential authors, emerging thematic clusters, and global research linkages. In addition, citation analysis was performed using local and global citation counts from Scopus to determine the most impactful contributions, with Table 1 highlighting seminal works on teacher knowledge development, generational differences,

intergenerational relations, and cross-cohort workplace motivation—thereby clarifying the intellectual foundations of multigenerational work design research.

3. RESULTS AND DISCUSSION

3.1 Keyword Co-Occurrence: Core Themes in Multigenerational Work Design

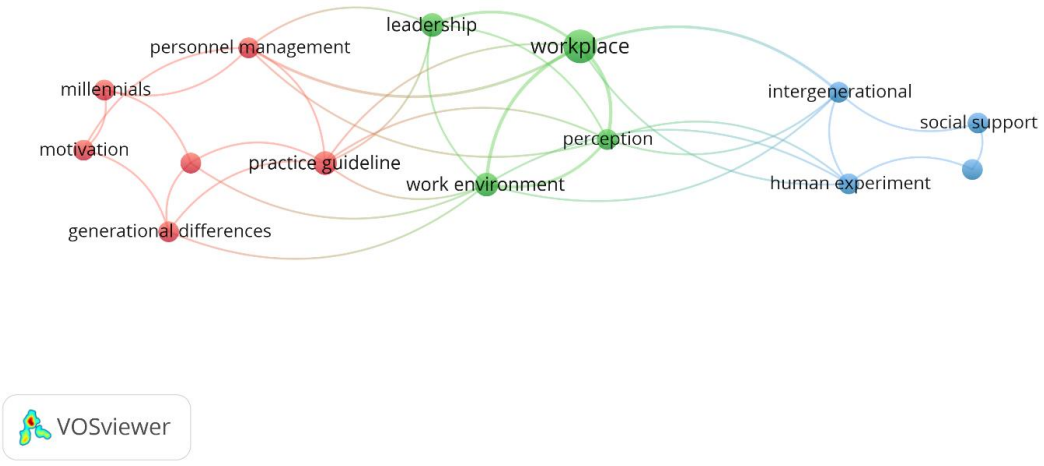

Figure 1. Network Visualization
Source: Data Analysis Result, 2025

Figure 1 presents the keyword co-occurrence network that maps the conceptual structure of multigenerational work design research between 2005 and 2025, revealing three major thematic clusters—red, green, and blue—each representing interconnected research streams that form the intellectual foundation of the field. The red cluster encompasses keywords such as generational differences, motivation, millennials, practice guideline, and personnel management, which reflect foundational studies comparing work values, attitudes, and behavioral tendencies across generational cohorts. These studies often explore how generational identities shape motivation, job preferences, organizational fit, and turnover intention, with the frequent appearance of terms like millennials and motivation indicating persistent scholarly attention to younger workforce groups. Meanwhile, the green cluster centers on workplace, work environment, leadership, and perception, signaling a shift from demographic descriptions to organizational-level inquiry. The prominence of the term workplace and its strong connections with leadership and work environment suggest a growing focus on how managerial behavior, organizational climate, and both physical and digital settings influence cross-generational interactions, reflecting the field's evolution toward integrative studies grounded in organizational behavior and leadership psychology.

The blue cluster, which includes intergenerational, social support, and human experiment, captures the emerging psychosocial and relational dimensions of multigenerational work research. The term intergenerational highlights increasing interest in collaboration, knowledge transfer, and relational dynamics between older and younger workers, while social support points to expanding attention on well-being, emotional climate, and support structures

within multigenerational teams. The inclusion of human experiment indicates growing methodological innovation through experimental and quasi-experimental approaches aimed at examining behavioral responses in cross-generational contexts. The network's interconnected structure, where nodes such as practice guideline and work environment bridge clusters, illustrates conceptual integration between demographic-focused and organizational-focused themes. Similarly, the linkage between perception and intergenerational underscores the role of fairness, communication, and inclusion in shaping cohesion across age groups. Overall, Figure 1 demonstrates the maturation of multigenerational work design research into a multidisciplinary domain encompassing HRM, organizational behavior, leadership studies, and psychosocial perspectives, moving beyond identifying generational differences toward understanding how organizations can design inclusive, supportive, and adaptive environments for diverse workforce groups.

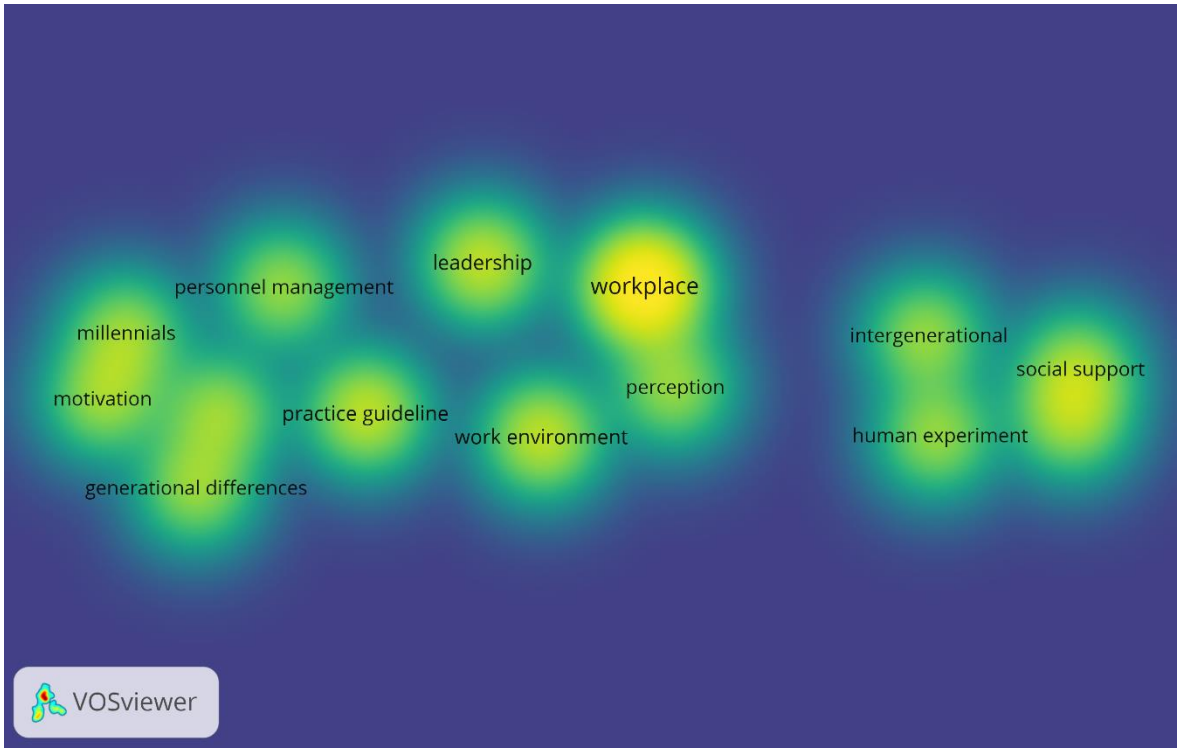

Figure 2. Density Visualization
Source: Data Analysis, 2025

The density visualization (Figure: DENSITY.png) shows that the most intensively studied topics cluster around workplace, leadership, and work environment, suggesting that the core of multigenerational research lies in how different cohorts experience and interpret organizational environments, while topics such as intergenerational relations and social support appear as secondary yet emerging streams that reflect a growing scholarly interest in the psychosocial dimensions of multigenerational collaboration. Taken together, these keyword patterns indicate a clear transition in the field from merely describing generational differences toward a deeper engagement with organizational design, leadership styles, and the emotional and psychological dynamics that shape interactions within diverse workforces.

3.2 Temporal Evolution of Themes: Evidence from the Overlay Map

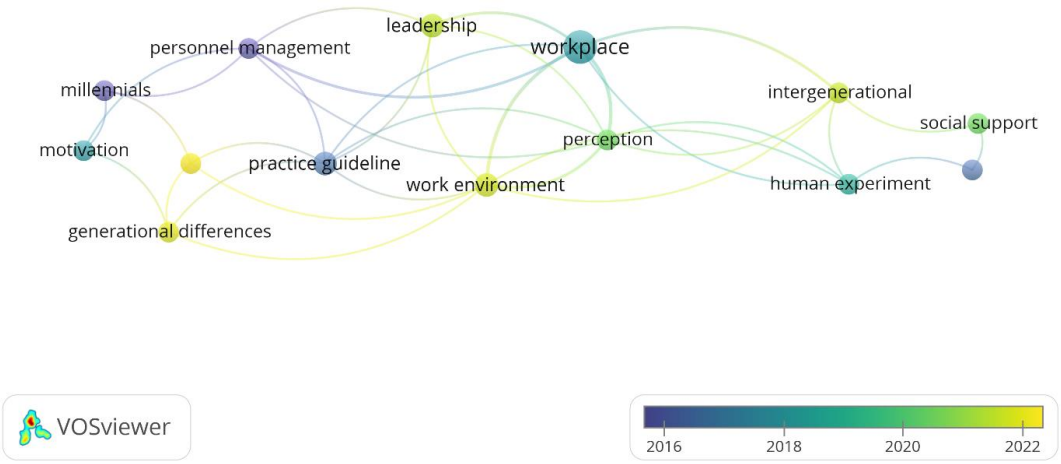

Figure 3. Overlay Visualization
Source: Data Analysis, 2025

The overlay visualization (Figure 3) reveals clear shifts in thematic focus over time, where earlier publications from 2016–2018—represented by cooler colors—prioritized generational differences, motivation, and millennials as researchers sought to empirically distinguish work behaviors across age cohorts, while more recent studies from 2020–2022, shown in yellow, increasingly concentrated on workplace, work environment, and intergenerational dynamics, reflecting a methodological and conceptual shift toward understanding how organizations can design environments that support cross-generational effectiveness. This transition corresponds with global changes in work practices, including hybrid work arrangements, digital collaboration, and the psychological impacts of constant connectivity, which have prompted scholars to incorporate themes such as perception, work climate, and social support into their analyses. Overall, the overlay map confirms the field's evolution from foundational theory toward more applied and intervention-oriented research addressing the complexities of contemporary multigenerational workplaces.

3.3 Author Collaboration Network: Fragmented but Emerging Interdisciplinary Communities

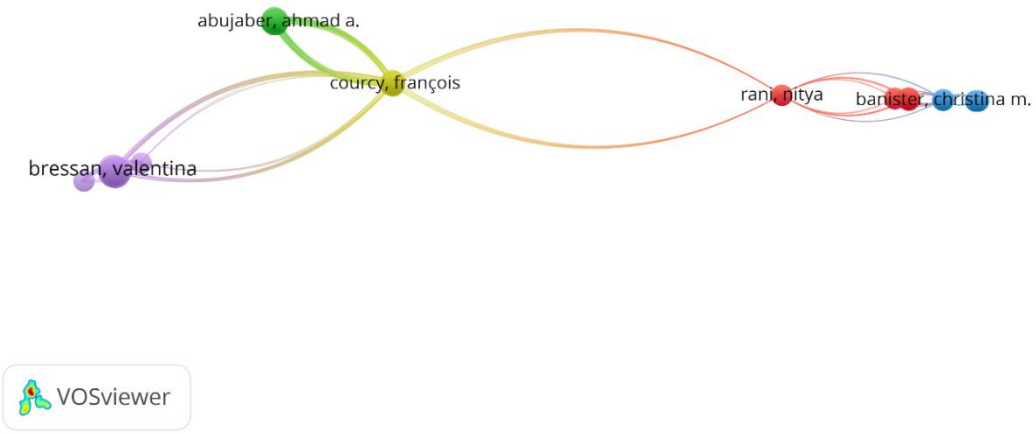

Figure 4. Author Collaboration Visualization
Source: Data Analysis Result, 2025

Figure 4 illustrates the author collaboration network, which reveals a moderately connected research landscape characterized by several small clusters rather than a single dominant community, with scholars such as François Courcy, Valentina Bressan, Ahmad A. Abujaber, Nitya Rani, and Christina M. Banister appearing as central nodes within their respective groups. The pattern indicates that research on generational differences and workplace behavior is highly interdisciplinary—spanning psychology, sociology, nursing, and human resource management—yet collaborations across clusters remain limited, suggesting that the field is still undergoing conceptual consolidation. European and Middle Eastern authors such as Courcy and Abujaber form strong internal linkages, while Anglo-American scholars tend to contribute through independent but parallel research streams. This fragmented structure highlights significant opportunities to strengthen global collaboration and underscores the need for integrative frameworks that bridge psychological, organizational, and demographic perspectives to advance the coherence and theoretical development of multigenerational work design research.

3.4 Affiliation Collaboration Network: Cross-Disciplinary but Limited Cross-Institutional Ties

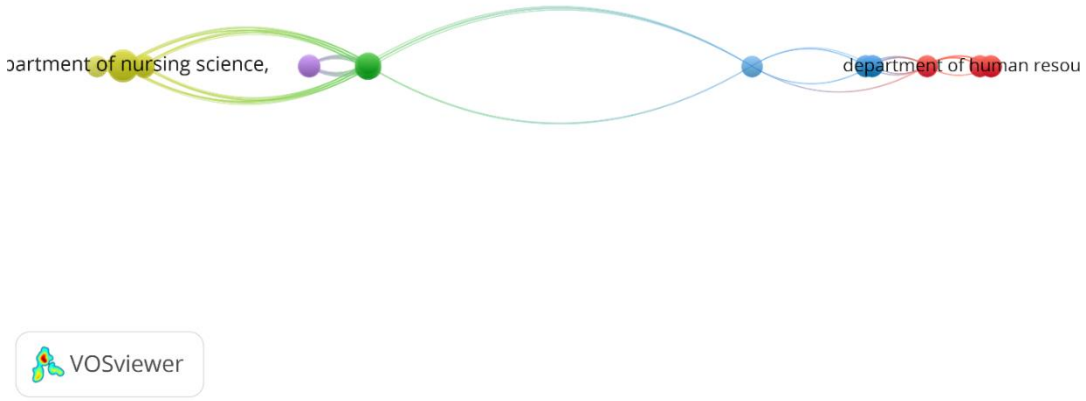

Figure 5. Affiliation Collaboration Visualization
Source: Data Analysis, 2025

Figure 5 depicts the affiliation collaboration network, which reveals a cross-disciplinary pattern involving nursing science departments and human resource management units, reflecting the growing tendency for multigenerational work research to be conducted within healthcare and human service sectors where generational disparities in job expectations, burnout, and workload are especially pronounced. The visualization shows two primary clusters: a green/yellow cluster composed of institutions specializing in nursing science, gerontology, and healthcare workforce studies, and a red/blue cluster consisting of universities focused on management science, HRM, and organizational psychology. However, the thin connecting lines between these clusters indicate minimal collaboration across institutional boundaries, suggesting that despite addressing similar workforce challenges, healthcare researchers and management scholars seldom engage in joint research efforts. This fragmentation highlights the need for more robust interdisciplinary collaboration that integrates clinical workforce insights with organizational behavior and HR perspectives to advance a more holistic understanding of multigenerational dynamics in contemporary workplaces.

3.5 Country Collaboration Network: United States as the Central Global Actor

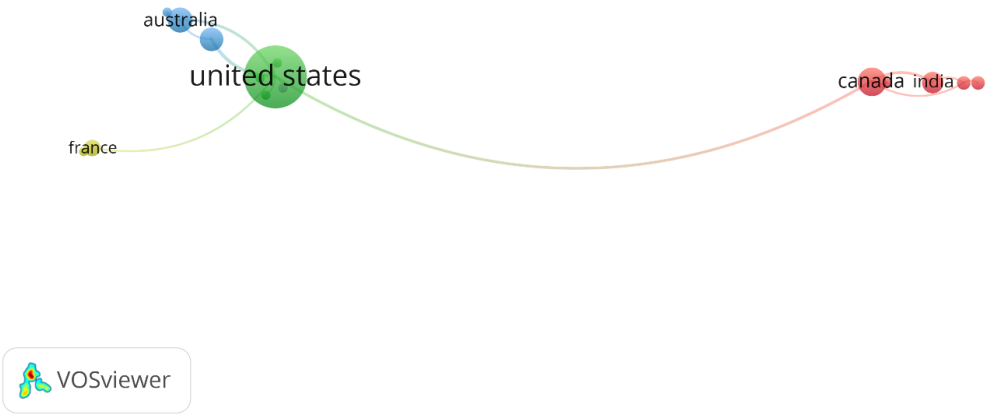

Figure 6. Country Collaboration Visualization
Source: Data Analysis Result, 2025

The country collaboration network (Figure: COUNTRY.png) demonstrates a strong concentration of research activity in the United States, which appears as the largest and most interconnected node and collaborates extensively with Australia, Canada, India, and, to a lesser extent, France, forming the backbone of global scholarship on generational and workforce studies. The visualization highlights several key patterns: the United States leads the field through large-scale research on workforce diversity, aging populations, and digital work transitions; Australia shows substantial engagement aligned with its national emphasis on workforce modernization in healthcare and service sectors; and Canada and India are emerging as important contributors, particularly in generational behavior and organizational studies. At the same time, the network structure suggests ample opportunities to strengthen cross-continental collaboration, especially between Asian and European research communities. Overall, these patterns underscore the central role of the Anglosphere in shaping both the theoretical development and empirical direction of multigenerational work design research.

3.6 Citation Analysis

Table 1. Top Cited Research

Citations	Authors & Year	Title
571	Koehler, M.J., Mishra, P., Yahya, K. (2007)	Tracing the development of teacher knowledge in a design seminar: Integrating content, pedagogy and technology
246	Glass, A. (2007)	Understanding generational differences for competitive success
183	Meriac, J.P., Woehr, D.J., Banister, C. (2010)	Generational differences in work ethic: An examination of measurement equivalence across three cohorts

158	Musil, C.M., Gordon, N.L., Warner, C.B., ... Standing, T., Wykle, M. (2011)	Grandmothers and caregiving to grandchildren: Continuity, change, and outcomes over 24 months
147	Mahmoud, A.B., Fuxman, L., Mohr, I., Reisel, W.D., Grigoriou, N. (2021)	"We aren't your reincarnation!" workplace motivation across X, Y and Z generations
91	Stevanin, S., Palese, A., Bressan, V., Vehviläinen-Julkunen, K., Kvist, T. (2018)	Workplace-related generational characteristics of nurses: A mixed-method systematic review
82	Antonucci, T.C., Jackson, J.S., Biggs, S. (2007)	Intergenerational relations: Theory, research, and policy
68	Rani, N., Samuel, A. (2016)	A study on generational differences in work values and person-organization fit and its effect on turnover intention of Generation Y in India
53	Chakraborty, D., Biswas, W. (2020)	Articulating the value of human resource planning (HRP) activities in augmenting organizational performance toward a sustained competitive firm
46	Larsen, E., Menashe, I., Ziats, M.N., ... Packer, A., Banerjee-Basu, S. (2016)	A systematic variant annotation approach for ranking genes associated with autism spectrum disorders

Source: Scopus, 2025

Table 1 highlights the ten most cited publications that shape the intellectual foundations of multigenerational work design research, and several prominent themes emerge from this citation landscape. Foundational works such as Glass (2007) and Meriac et al. (2010) continue to hold substantial influence by providing empirical and conceptual frameworks for distinguishing generational cohorts in organizational contexts, demonstrating that generational taxonomy remains central to scholarly inquiry. More contemporary studies, such as Mahmoud et al. (2021), advance this discourse by emphasizing motivational differences across Generations X, Y, and Z, marking a transition from descriptive demographic comparisons toward deeper psychological analyses. Additional influential contributions, including those by Antonucci et al. (2007) and Musil et al. (2011), bridge intergenerational theories from family and social psychology into workplace settings, highlighting the growing interest in relational dynamics, socio-emotional factors, and cross-cohort interactions within organizational environments.

Beyond these conceptual contributions, other highly cited works underscore the applied dimensions of multigenerational workforce management. Chakraborty and Biswas (2020) link human resource planning with long-term organizational competitiveness, reinforcing the crucial role of structured workforce strategies in addressing multigenerational challenges. The prominence of Stevanin et al. (2018) further illustrates the importance of generational research in healthcare and nursing contexts, where differing expectations, workload pressures, and burnout risks are particularly pronounced across age groups and require customized management approaches. Taken together, these influential studies reveal that multigenerational research is firmly rooted in interdisciplinary foundations spanning psychology, human resource management, sociology, and healthcare, reflecting a field that is both theoretically diverse and practically relevant.

Discussion

The convergence of visual mapping, author networks, thematic clusters, and

citation patterns reveals several key developments in multigenerational work design research. First, the field is clearly transitioning from simple demographic description toward more complex organizational and psychological interventions. Recent studies increasingly emphasize workplace design, leadership behavior, employee perceptions, and intergenerational collaboration, signaling a shift toward a holistic understanding of workforce diversity and the mechanisms that support effective cross-generational engagement. Digitalization further accelerates this shift, as hybrid work models and technology-mediated communication compel researchers to examine how generational cohorts differ in their adaptation to digital tools, management of work–life boundaries, and reliance on social support structures.

Second, despite the growing volume of research and the emergence of multiple thematic streams, the scholarly community remains active yet fragmented. Collaboration within clusters is strong, but integration across international and interdisciplinary boundaries is limited. This fragmentation presents challenges for developing unified theoretical models capable of bridging insights from healthcare, management, psychology, and behavioral sciences. At the same time, the dominance of the United States in publication output and citation influence underscores the need to broaden the geographic representation of research contributions by encouraging perspectives from Asia, Europe, and emerging economies, which may offer valuable contextual variations and new theoretical insights.

Third, bibliometric patterns point to a promising expansion of socio-psychological themes within multigenerational work studies. The increasing prominence of concepts such as perception, social support, and human experience suggests that future research will move beyond structural or demographic explanations to explore the emotional, relational, and cognitive dimensions of multigenerational workplaces. This evolution reflects a growing recognition that effective multigenerational management requires understanding not only behavioral differences but also the psychological processes and interpersonal dynamics that shape how individuals across age groups interact, collaborate, and derive meaning from their work environments.

4. CONCLUSION

This bibliometric study provides a comprehensive overview of the global research landscape surrounding Employee Experience 2.0, revealing a rapidly expanding and increasingly interdisciplinary field strongly shaped by technological change. The findings indicate that employee well-being, job satisfaction, risk factors, and organizational management form the conceptual core of the discipline, while emerging themes such as digital workplace design, human–technology interaction, and resilience reflect the evolving nature of work in the digital era. Collaboration networks show that EX research is predominantly driven by contributions from leading countries including the United States, Germany, the United Kingdom, China, and Japan, with growing participation from Asia, the Middle East, and Africa. Influential authors and institutions contribute to cohesive scientific communities rooted in occupational health, organizational psychology, and service innovation, and the top-cited publications emphasize the importance of psychosocial factors, empowerment, burnout, and digital service environments in shaping employee experiences.

Overall, the results highlight that Employee Experience 2.0 is far more than an extension of traditional HR practices; it represents a complex, multidimensional domain where technology, human behavior, and organizational design intersect. As workplaces continue to undergo digital and cultural transformation, this study offers a strong empirical foundation for future research and provides meaningful insights to guide practitioners in creating more adaptive,

human-centered, and strategically aligned work environments.

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