Bibliometric Analysis of the Impact of Work-Life Balance on Mental Health in the Workplace

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Article Info	ABSTRACT
	This bibliometric study investigates the academic landscape surrounding work-life balance, exploring the interrelations between work-life balance and its impacts on mental health, job satisfaction, and organizational performance. Utilizing data from major academic databases from 2000 to 2023 and employing VOSviewer for network analysis, the study maps the evolution of research themes, with a special focus on changes influenced by the COVID-19 pandemic. The findings highlight the increased emphasis on mental health issues, flexibility in work arrangements, and the critical role of workplace support. The study also identifies central researchers and thematic clusters, illustrating the dynamic interplay between work-life balance strategies and employee well-being. These insights provide a valuable foundation for developing more effective policies and interventions aimed at enhancing work-life harmony.

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1. INTRODUCTION

In the rapidly evolving work environment of the 21st century, the concept of work-life balance has emerged as a critical area of study, particularly concerning its impact on mental health. The increasing demands of modern workplaces, coupled with the need for personal fulfillment and family care, have led many to struggle with achieving a satisfactory balance between work and personal life. This struggle often results in work-related stress, which can significantly affect an individual's mental health and overall well-being. Research has shown that poor work-life balance increases the risk of mental health issues, such as anxiety and depression, which not only affects employees but also decreases productivity and increases turnover rates within organizations.

Technological advancements and the global integration of markets have further complicated the dynamics of work-life balance. The advent of digital communication tools has blurred the boundaries between work and home, often leading employees to work outside of traditional office hours and in their personal spaces. This encroachment into

personal time can exacerbate stress and hinder an individual's ability to recover from work pressures, thus impacting their mental health negatively. Moreover, during the COVID-19 pandemic, the shift to remote work has intensified these challenges, making it imperative to explore how these new working conditions are influencing employees' mental health.

The importance of work-life balance is recognized globally, with various studies conducted across different cultures and economic backgrounds indicating similar trends of its impact on mental health. However, despite its recognition, there remains a significant gap in the comprehensive understanding of how varied work-life balance strategies affect mental health outcomes across different sectors and demographics. It is crucial to investigate these variables to develop more effective organizational policies that safeguard mental health while promoting efficiency and job satisfaction among employees.

The pursuit of a balanced approach to work and life is not merely a personal concern but a significant public health issue that warrants rigorous academic inquiry. Therefore, conducting a bibliometric analysis of existing research on work-life balance and mental health in the workplace offers an invaluable opportunity to synthesize knowledge, identify research trends, and pinpoint gaps in the literature. This approach allows for a systematic review of the academic landscape surrounding this topic, providing a clearer understanding of the correlation between work-life balance practices and mental health outcomes.

Despite the acknowledged importance of work-life balance, there is a scarcity of holistic analyses that integrate findings from diverse fields and geographical contexts to provide a global perspective on its effects on mental health. Current literature predominantly explores direct correlations with limited consideration for interdisciplinary impacts and cultural variances. This research aims to address this gap by employing bibliometric methods to map the existing academic discourse, examining how discussions about work-life balance have evolved and identifying the most impactful strategies that have been linked with positive mental health outcomes in the workplace.

This research is significant as it aims to provide a comprehensive bibliometric analysis that could serve as a foundational reference for policymakers, organizational leaders, and mental health professionals. By highlighting effective work-life balance strategies that promote mental health, the findings can guide the development of policies and practices that not only enhance employee well-being but also contribute to the overall productivity and sustainability of organizations. Additionally, understanding the interplay between work-life balance and mental health could spur further research in underexplored areas, fostering a deeper understanding of the causal relationships and influencing the creation of more tailored, context-specific interventions.

2. LITERATURE REVIEW

2.1 The Concept of Work-Life Balance

Work-life balance is a widely discussed topic in organizational psychology and human resource management. Its definition varies but generally refers to the extent to which an individual is equally engaged in - and equally satisfied with - his or her work role and family role. [1] originally defined conflicts between work and family roles as forms where pressures from work and family are mutually incompatible in some respect. This conflict often results in role stress, which can lead to decreased mental health and well-being.

[2] introduced the concept of work-family border theory, which suggests that individuals

serve as the daily border-crossers between the domains of work and family. The theory posits that the ease with which one transitions between these roles significantly impacts one's ability to achieve balance and affects overall mental health. The smoother the transition, the better the work-life balance and the lower the stress and conflict experienced.

2.2 Impact of Work-Life Imbalance on Mental Health

Numerous studies have demonstrated a correlation between work-life imbalance and poor mental health outcomes. For instance, [3] found that work-family conflict is associated with higher levels of job stress, anxiety, depression, and overall reduced psychological well-being. This relationship is often mediated by the stressors inherent in juggling competing work and family demands, which consume cognitive and emotional resources, leaving less capacity for coping with additional stress.

[4] explored the mechanisms through which work-life balance affects mental health and identified that greater work-family conflict leads to psychological distress because it undermines the basic human needs of autonomy, competence, and relatedness. When employees feel they have little control over their work and life balance, their perceived competence and satisfaction in both roles can decline, exacerbating feelings of anxiety and depression.

2.3 Technological Changes and Work-Life Balance

The integration of technology in the workplace has brought about significant changes to work-life dynamics. [5] highlight that telework and flexible working arrangements facilitated by technology can reduce work-life conflict by allowing employees to better manage their time. However, they also note that this flexibility can lead to "always on" work cultures that potentially increase work-life conflict by encroaching on personal and family time, thereby increasing stress and adversely affecting mental health.

[6] discuss the concept of "telepressure," or the urge to respond immediately to work-related messages, as a significant stressor that can lead to burnout and reduced well-being. The inability to disconnect from work responsibilities is particularly detrimental to mental health, indicating that while technology can facilitate balance, it can also undermine it if not managed effectively.

2.4 Cultural and Demographic Variations in Work-Life Balance

The experience of work-life balance and its impact on mental health also varies significantly across different cultures and demographics. [7] found that in collectivist cultures, where family and community relationships are prioritized, work-life conflict might have more severe consequences for mental health due to the higher value placed on familial duties. In contrast, in individualistic cultures, personal achievement and autonomy in managing work and life may buffer against the stress of imbalance.

In terms of demographics, studies such as those by [8] have shown that gender plays a crucial role in how work-life balance is perceived and achieved. Women, particularly in patriarchal societies, often face greater challenges in achieving work-life balance due to traditional gender roles that place the dual burden of career and family care on them, leading to higher levels of work-life conflict and subsequent mental health issues.

3. METHODS

The methodology used in this study is bibliometric analysis, which aims to systematically analyze literature related to work-life balance and mental health at the workplace. The data used for this analysis was gathered from Google Scholar using the Publish or Perish application, which enables concise and effective data collection. The data collection period spans from 1989 to 2023. The key words used in this study are "work-life balance," "mental health," "workplace stress," and "job satisfaction." After the data is collected, the lunak analiticism bibliometric VOSviewer technique is used to visualize the collaboration and site network as well as to identify the research team's theme and research progress. It is hoped that this analysis will provide more insight into how research in the areas of work-life balance and mental health has evolved, as well as highlight areas of research that need further exploration.

4. RESULTS AND DISCUSSION

4.1 Research Data Metrics

Table 1. Data Citation Metrics

Publication years	1989-2024
Citation years	35 (1989-2024)
Paper	980
Citations	82025
Cites/year	2343.57
Cites/paper	83.70
Cites/author	39913.77
Papers/author	498.72
Author/paper	2.53
h-index	148
g-index	255
hI,norm	99
hI,annual	2.83
hA-index	45
Papers with ACC	: 1,2,5,10,20:893,783,548,333,156

Source: Publish or Perish Output, 2024

The data presented in Table 1 provides an extensive bibliometric analysis of research publications spanning from 1989 to 2024, encompassing a citation period of 35 years. A total of 980 papers were analyzed, accumulating 82,025 citations, which indicates a robust impact within the field, averaging 2343.57 citations per year and 83.70 citations per paper. This high citation rate suggests that the research is both influential and frequently referenced in subsequent studies. The metrics further reveal that the average number of authors per paper is approximately 2.53, with 39913.77 cites per author and 498.72 papers per author, reflecting a high degree of collaboration and

individual productivity among the researchers involved. The h-index, a measure of the depth and breadth of an author's impact, stands impressively at 148, while the g-index is even higher at 255, indicating that a substantial number of papers have received significant citation counts. The normalized individual h-index (hI,norm) is 99, and the annualized version (hI,annual) is 2.83, underscoring sustained and consistent contributions to the field over time. The hA-

index is calculated at 45, providing insight into the authors' core contributions based on highly cited articles. Additionally, the distribution of papers receiving varying levels of accumulated citations (ACC) further illustrates the significant recognition and relevance of the research, with a large majority of papers achieving high citation thresholds, thereby confirming the enduring impact of the publications over the years.

Table 2. Top Cited Research

Citations	Authors and year	Title
4066	[9]	Burnout and satisfaction with work-life balance among US physicians relative to the general US population
1781	[10]	Perspectives on the study of work-life balance
1641	[11]	Making the link between work-life balance practices and organizational performance
1220	[12]	Outcomes of work–life balance on job satisfaction, life satisfaction and mental health: A study across seven cultures
1154	[13]	Work–life balance: A Review of the Meaning of the Balance Construct
890	[14]	Unbinding time: Alternate work schedules and work-life balance
881	[15]	Work-life 'balance'in Europe
876	[16]	An exploration of the psychological factors affecting remote e-worker's job effectiveness, well-being and work-life balance
871	[17]	The path to a healthy workplace: A critical review linking healthy workplace practices, employee well-being, and organizational improvements.
866	[18]	The constraints of a 'work–life balance'approach: An international perspective

Source: Publish or Perish Output, 202

Table 2 provides a list of the most cited research articles in the area of work-life balance, highlighting their impact on the field. Each article focuses on different aspects of work-life balance, examining its effects on various outcomes, such as job satisfaction, mental health, and organizational performance.

1. [9]

This study investigates burnout and satisfaction with work-life balance among US physicians and compares it to the general US population. The findings indicate that physicians experience higher rates of

burnout and are less satisfied with their work-life balance compared to the broader population, suggesting a critical area of concern within the healthcare profession.

2. [10]

This article offers perspectives on the study of work-life balance, discussing theoretical and practical aspects of how work-life balance is understood and researched. The paper likely provides a comprehensive overview of methodologies and approaches to study work-life balance, aiding in

shaping future research directions.

3. [11]

This research links work-life balance practices to organizational performance, suggesting that effective work-life balance strategies can enhance organizational outcomes. The paper probably explores how such practices can lead to improved employee productivity and overall corporate success.

4. [12]

This article examines the outcomes of work-life balance on job satisfaction, life satisfaction, and mental health across seven cultures, providing a global perspective on the implications of work-life balance. The findings likely underscore the universal benefits of achieving work-life balance for enhancing both personal and professional well-being.

5. [13]

This review explores the meaning of the work-life balance construct, offering insights into how it is defined and the various dimensions it encompasses. Such a review is crucial for setting the stage for empirical studies and for ensuring consistency in understanding across studies.

6. [14]

The study discusses alternate work schedules and their impact on work-life balance. The findings probably highlight how flexible working arrangements can alleviate work-life conflict and enhance employee satisfaction and balance.

7. [15]

This research addresses work-life balance in Europe, likely discussing regional differences and similarities in how work-life balance is perceived and achieved across European countries.

8. [16]

The paper explores the psychological factors affecting remote workers' job effectiveness, well-being, and work-life balance. This study is particularly relevant given the increase in remote working arrangements, emphasizing factors that influence the success of such work setups.

9. [17]

This article reviews healthy workplace practices and their link to employee well-being and organizational improvements. The research likely provides recommendations for workplace policies that foster a healthier work environment and better work-life balance.

10. [18]

This study critiques the constraints of the work-life balance approach from an international perspective, possibly offering insights into the challenges and limitations of implementing work-life balance strategies in different cultural contexts.
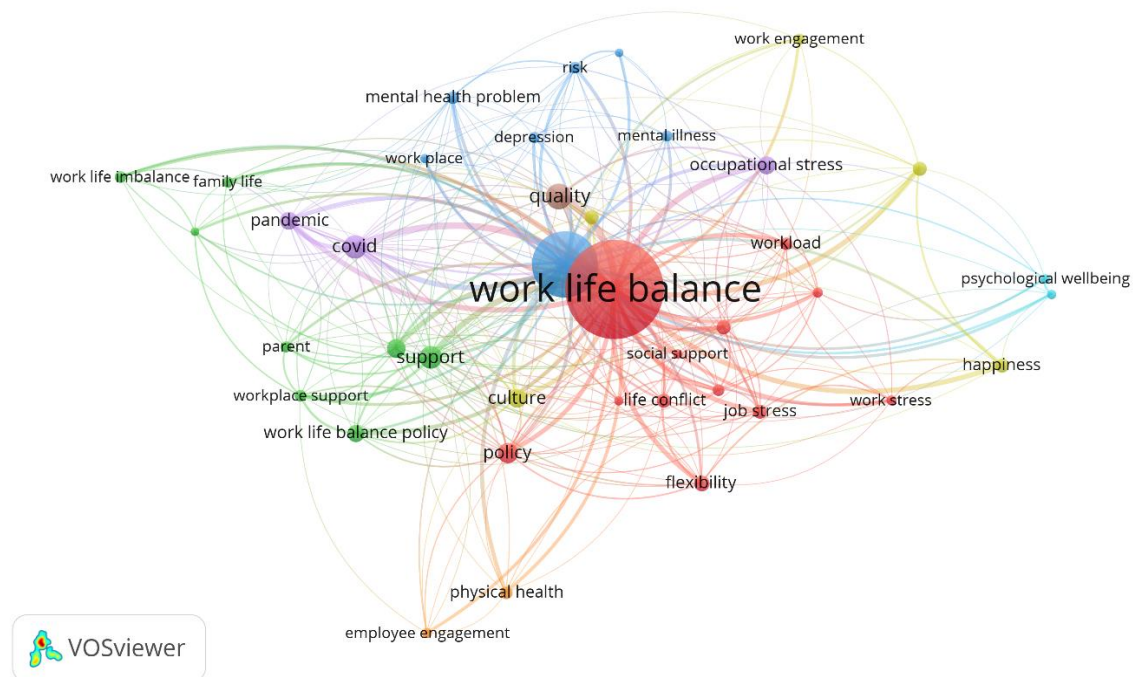
Figure 1. Network Visualization
Source: Data Analysis Result, 2024

The visual representation shown in the VOSviewer network map provides a comprehensive analysis of keywords related to the theme of work-life balance, illustrating the interconnections and thematic clusters within this research field. The central node, labeled "work life balance," represents the core focus of the network and is prominently placed, indicating its significance and centrality in the discussions. Surrounding this are various interconnected nodes, each representing different but related concepts that contribute to the broader discourse on work-life balance.

Around the core "work life balance" node, several major clusters can be identified, each represented by different colors, signifying thematic concentrations within the research. For instance, nodes related to "mental health problem," "depression," and "quality" are closely linked, suggesting a significant focus on the psychological impacts of work-life balance or imbalance. This cluster emphasizes how imbalances in work-life dynamics can lead to mental health issues, affecting overall life quality and satisfaction.

Another notable cluster involves terms like "pandemic," "covid," and "parent," highlighting the recent emphasis on how global events such as the COVID-19 pandemic have influenced work-life dynamics, particularly for working parents. This cluster points to a surge in research interest following the pandemic's onset, focusing on the challenges and policy responses aimed at supporting work-life balance during unprecedented times. The presence of "workplace support" and "work life balance policy" within this cluster indicates an analytical focus on organizational and governmental strategies to mitigate these challenges.

Finally, the network map also includes nodes like "flexibility," "work engagement," and "employee engagement," which connect to both the central theme and other peripheral nodes, illustrating the multifaceted nature of work-life balance. These links suggest that flexibility in work arrangements may lead to better engagement at work, which in turn can enhance overall employee well-being and productivity. The interconnectedness of these nodes within the

network underscores the complex and interdependent nature of factors that influence work-life balance, highlighting the importance of holistic approaches in both research and practical applications to effectively address the challenges in this area.
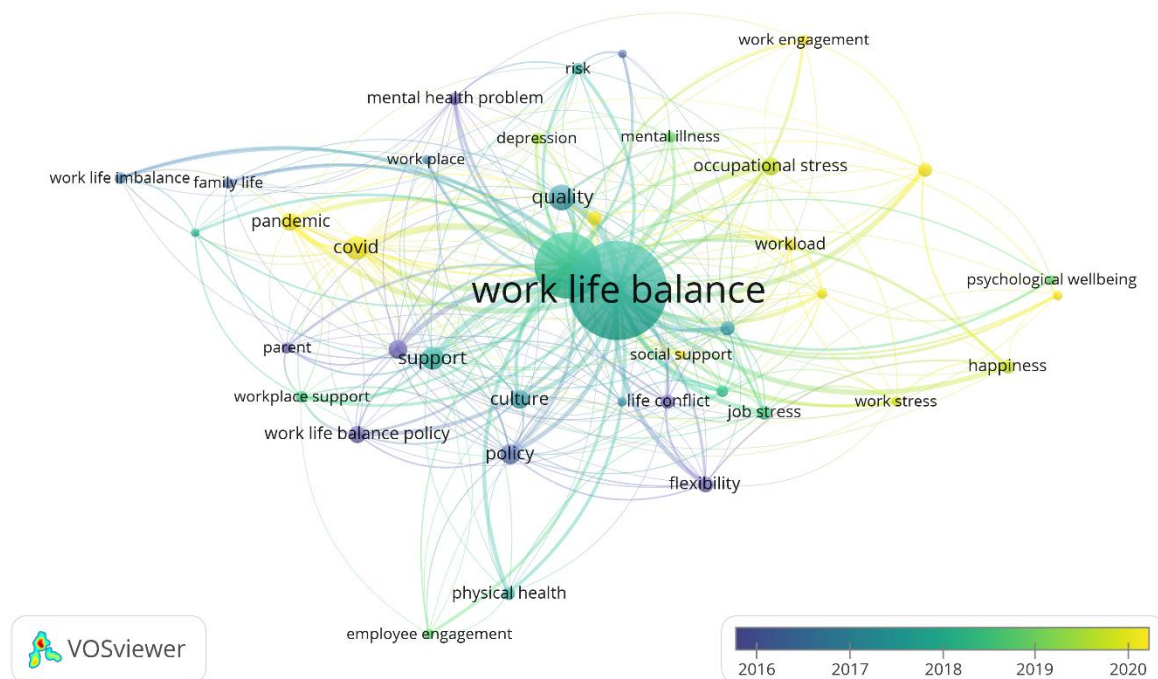

Figure 2. Overlay Visualization
Source: Data Analysis Result, 2024

This second VOSviewer network map provided incorporates a temporal component, depicting the evolution of research themes from 2016 to 2020 related to work-life balance. The nodes are color-coded to indicate the year of publication, ranging from blue (2016) to yellow (2020), allowing us to visualize the progression and shifts in focus over time within the field. The dominant node, "work life balance," remains centrally positioned, underscoring its continued importance. Surrounding nodes vary in size and color, reflecting their prominence and relevance during these years.

The increase in size and shift towards the greener hues in nodes like "pandemic" and "covid" in the later years, particularly in 2020, highlights the significant impact of global events on this area of research. This trend underscores a reactive shift in academic focus responding to real-world crises, illustrating how external factors such as the COVID-19 pandemic have forced a reevaluation of work-life balance issues. It points to an expanded exploration of how pandemics affect work-life dynamics, especially concerning support systems, workplace policies, and the overall well-being of employees in various sectors.

Furthermore, the continuity and emergence of themes like "support," "flexibility," and "employee engagement" across the timeframe suggest a growing recognition of these factors as crucial to enhancing work-life balance. The persistent focus on "mental health problem" and related nodes across the years indicates a deepening understanding of the psychological impacts of work-life balance or imbalance. Overall, the network map not only illustrates the central and evolving themes in work-life balance research but also highlights the field's responsiveness to societal changes and challenges, shaping its trajectory towards more holistic and contextually relevant inquiries.
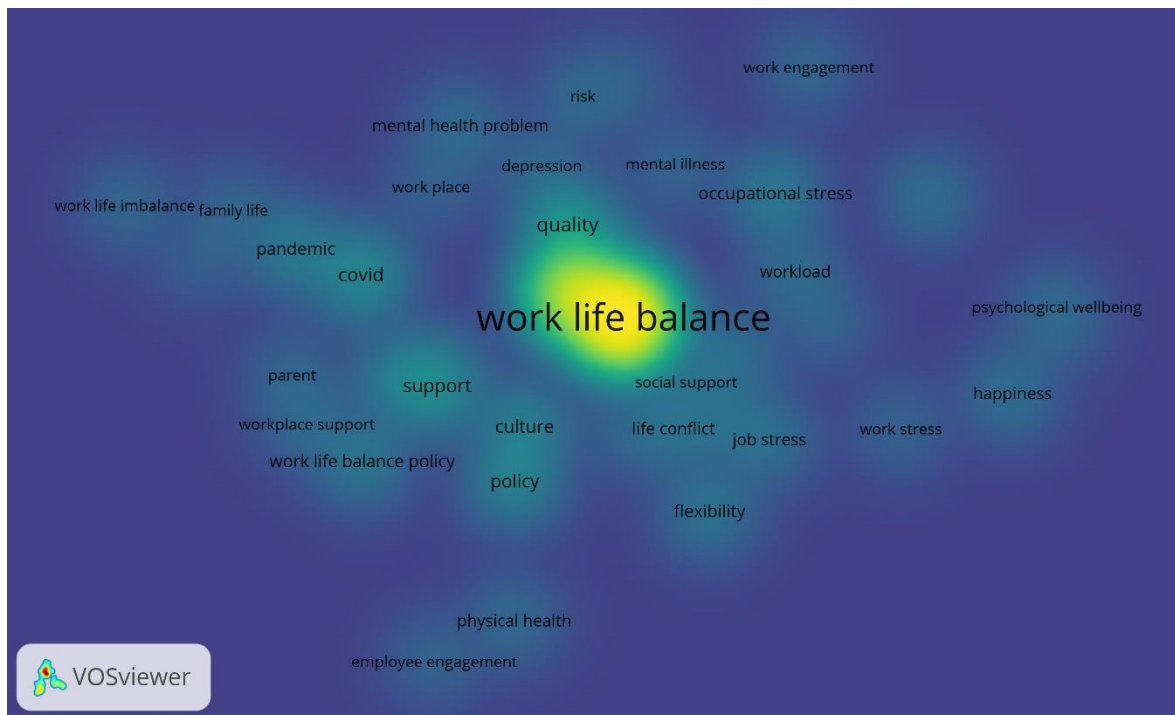
Figure 3. Density Visualization
Source: Data Analysis, 2024

This VOSviewer visualization provides a compelling overview of key themes and terminologies associated with research on work-life balance. The vivid density map technique used here illustrates the intensity of discussions around central themes, with "work life balance" positioned at the core, surrounded by a cluster of interrelated terms. The varying colors from dark blue to bright green across the map suggest the concentration of discussions, with the brightest areas indicating higher density and possibly more recent or frequent research focus.

Nodes such as "pandemic" and "covid" closely positioned to "work life balance" reflect the significant impact of global health crises on the discourse surrounding work-life balance. This suggests an adaptive research response to external socio-economic events, highlighting the dynamic nature of this field. Other terms like "mental health problem," "depression," and "workplace support" are also prominent, indicating a strong focus on the psychological impacts and organizational roles in maintaining work-life balance. The spread and proximity of these nodes to the central theme underscore the multifaceted nature of work-life balance, encompassing personal well-being, workplace policies, and broader socio-cultural factors.
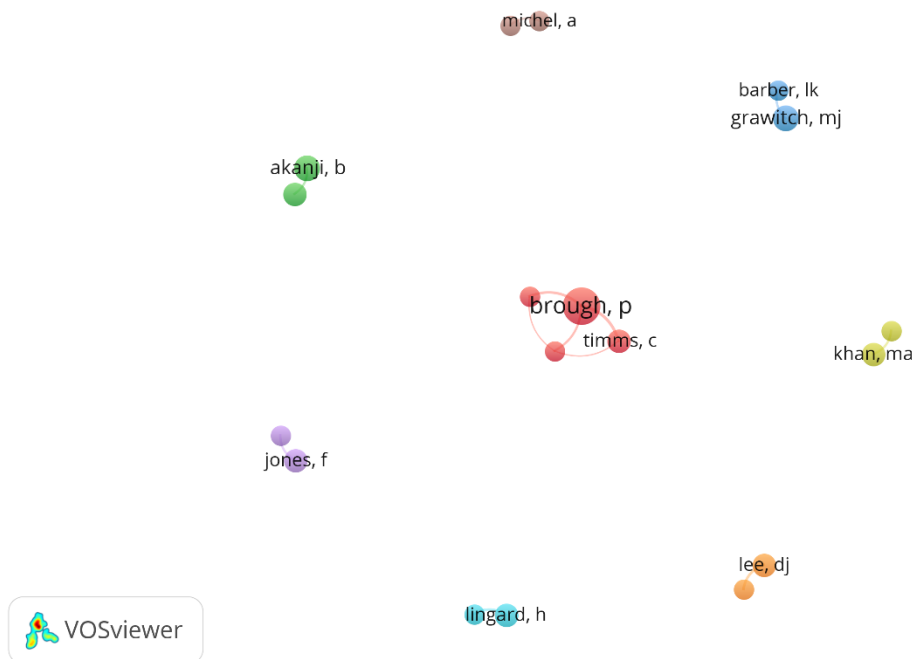
Figure 4. Author Collaboration Visualization
Source: Data Analysis, 2024

This VOSviewer visualization maps the collaboration or citation network between various researchers within a specific academic field, with each node representing an author. The different colors of the nodes may indicate distinct clusters or groups of authors who frequently collaborate with each other or work within similar thematic areas. The positioning of the nodes and their proximity to one another can signify the strength and frequency of these collaborations or citation relationships. For instance, authors grouped closer together, such as Brough, P., and Timms, C., likely have strong collaborative ties or are often cited together in literature, suggesting a close association in research interests or contributions. The isolated positioning of other authors, like Jones, F., indicates fewer direct collaborations or citations linked with the central nodes or clusters, highlighting a possibly unique or divergent area of research focus within the broader field.

5. CONCLUSION

This bibliometric analysis has provided a comprehensive overview of the evolving landscape of research concerning work-life balance, highlighting significant shifts in focus, particularly in response to global challenges such as the COVID-19 pandemic. The study underscores the critical interplay between work-life balance and various outcomes such as mental health, employee engagement, and organizational performance. It also reveals the responsiveness of this research area to external socio-economic changes and its implications for both policy and organizational practices. Through visualization of the research network, we identified key thematic clusters and influential authors, pinpointing areas of both dense research activity and potential gaps in the literature. This analysis not only maps out the current state of work-life balance studies but also sets the stage for future research directions that can address emerging challenges and enhance understanding in this vital field.

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