Bibliometric Analysis of Work Environment and Employee Job Satisfaction

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Article Info	ABSTRACT
	This study presents a comprehensive bibliometric analysis of the global research landscape on the relationship between work environment and employee job satisfaction. Using data retrieved from the Scopus database and analyzed with VOSviewer (version 1.6.x), the study maps publication trends, influential authors, collaborative networks, and thematic clusters spanning the years 2000–2024. The co-authorship analysis identifies prominent contributors such as Bakker A.B. and Judge T.A., while the country collaboration map reveals the dominance of the United States and the growing participation of countries like India, China, and Malaysia. Keyword co-occurrence analysis shows a conceptual structure centered on themes such as occupational health, job stress, leadership, and employee well-being, with "job satisfaction" and "work environment" as central nodes. Temporal and density visualizations suggest an increasing emphasis on holistic constructs such as work-life balance, mental health, and quality of life. The findings underscore the interdisciplinary and evolving nature of this field, offering guidance for future research directions and practical implications for organizational policy and human resource management. *This is an open access article under the license.*

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1. INTRODUCTION

The relationship between the work environment and employee job satisfaction has been a central theme in organizational behavior and human resource management studies for decades. As organizations continue to evolve in response to technological advancements, globalization, and demographic shifts, understanding the factors that contribute to employee satisfaction becomes increasingly critical. A conducive work environment encompassing physical conditions, interpersonal relationships, job roles, and organizational culture has been widely acknowledged as a major determinant of employee attitudes, motivation, and productivity [1], [2]. The work environment serves not only as a backdrop for day-to-day activities but also shapes how employees perceive their value and purpose within the organization.

In recent years, scholarly attention has shifted toward more nuanced understandings of the work environment, emphasizing aspects such as psychological safety, work-life balance, ergonomic design, and inclusivity. Research suggests that a positive work environment is linked to higher levels of organizational commitment, reduced

turnover, and enhanced job satisfaction [3]–[5]. Conversely, toxic or poorly managed environments are associated with stress, burnout, and disengagement. These consequences have implications not only for individual well-being but also for organizational performance and sustainability. As such, organizations are investing in workplace strategies aimed at fostering healthy and supportive environments.

With the growing complexity of workplace dynamics, empirical studies have explored the interplay between various environmental factors—such as leadership style, coworker relationships, communication climate, and job autonomy—and their impact on job satisfaction. Multidisciplinary perspectives from psychology, management, sociology, and occupational health have enriched this discourse. However, the field has become increasingly fragmented, with diverse conceptual frameworks, methodological approaches, and theoretical orientations. This diversity poses challenges for synthesizing knowledge, identifying research trends, and evaluating the overall trajectory of the domain [6], [7].

The advent of bibliometric analysis provides an effective means to overcome these challenges by systematically mapping the intellectual structure and evolution of a given research area. Bibliometric techniques such as co-authorship, citation, co-citation, and keyword co-occurrence analyses offer quantitative insights into research productivity, influential authors and journals, thematic clusters, and collaboration networks [8]. Applied to the study of work environment and employee satisfaction, bibliometric analysis can illuminate how scholarly attention has shifted over time, which themes dominate the discourse, and where future research might be directed. Despite the extensive body of literature on this topic, no comprehensive bibliometric analysis has yet been undertaken to systematically review and visualize its development.

Given the dynamic nature of work in the 21st century marked by trends such as remote work, hybrid office models, digital transformation, and increased emphasis on employee well-being the need to reassess and reinterpret existing knowledge becomes imperative. By employing bibliometric tools to explore the literature, scholars can identify the most cited works, detect underexplored areas, and foster integrative frameworks that align with contemporary organizational realities. Moreover, such analyses contribute to evidence based policy and decision-making in human capital management, ensuring that interventions aimed at improving job satisfaction are grounded in a robust understanding of past research trajectories and future needs.

Despite the rich and diverse literature on the relationship between work environment and employee job satisfaction, there exists a lack of comprehensive, systematic mapping of its development using bibliometric methods. This gap limits scholars' and practitioners' ability to understand the field's intellectual structure, identify influential contributions, and detect emergent themes or research silos. As the work environment continues to transform in response to societal and technological changes, the absence of such a synthesis hinders the formulation of integrated research agendas and evidence-informed organizational strategies. The objective of this study is to conduct a bibliometric analysis of the scholarly literature on work environment and employee job satisfaction.

2. METHOD

2.1 Data Source and Search Strategy

This bibliometric study was conducted using data retrieved from the Scopus database, which is widely recognized for its comprehensive coverage of peer-reviewed literature across disciplines including management, psychology, and social sciences. Scopus was selected due to its robust metadata, advanced search functionalities, and compatibility with bibliometric tools such as VOSviewer. To ensure relevance and accuracy, a systematic search query was constructed using a combination of keywords and

Boolean operators. The final search string used was: "work environment" OR "working conditions" AND "job satisfaction" OR "employee satisfaction". The search was restricted to journal articles, reviews, and conference papers published in English between 2000 and 2024, ensuring both historical depth and contemporary relevance. Duplicate records, book chapters, and non-peer-reviewed materials were excluded. The search was conducted in April 2025, yielding a total of 872 publications after initial screening and deduplication.

2.2 Data Cleaning and Preparation

The bibliographic data including titles, abstracts, author names, affiliations, keywords, references, and citation counts were exported in .CSV and .RIS formats from Scopus. These datasets were then pre-processed using Microsoft Excel and bibliometric software to ensure consistency in author names (e.g., resolving spelling variations), unify organization names, and remove incomplete or redundant records. Keyword harmonization was performed to address synonym usage (e.g., "job satisfaction" vs. "employee satisfaction") and ensure uniform thematic classification.

2.3 Analytical Tools and Techniques

The core analysis in this study was conducted using VOSviewer (version 1.6.x), a widely recognized tool for constructing and visualizing bibliometric networks (Van Eck & Waltman, 2010). Four primary bibliometric techniques were employed. First, co-authorship analysis was used to examine collaborative patterns among authors and countries, helping identify the most productive and interconnected contributors in the field. Second, citation and co-citation analyses were conducted to determine the most influential authors and articles, as well as to uncover intellectual linkages and thematic clusters that form the theoretical foundation of the research domain. Third, keyword co-occurrence (co-word) analysis was used to map the conceptual structure of the literature by clustering frequently co-occurring keywords using the full counting method and a minimum occurrence threshold, which enabled the identification of dominant themes and emerging research areas. Lastly, a temporal analysis was carried out to trace the evolution of research topics over time by examining shifts in keyword usage and publication trends, thus providing insights into the dynamic development and trajectory of scholarly interest in the relationship between work environment and employee job satisfaction.

2.4 Inclusion and Threshold Criteria

To ensure meaningful and interpretable visualizations, minimum thresholds were applied for each analysis. For example, a minimum of five documents per author was set for co-authorship mapping, and a minimum of five citations for co-citation analysis. In the keyword analysis, only those keywords that appeared in at least five different publications were included. These thresholds were determined based on preliminary data density and visualization clarity.

3. RESULTS AND DISCUSSION

3.1 Results

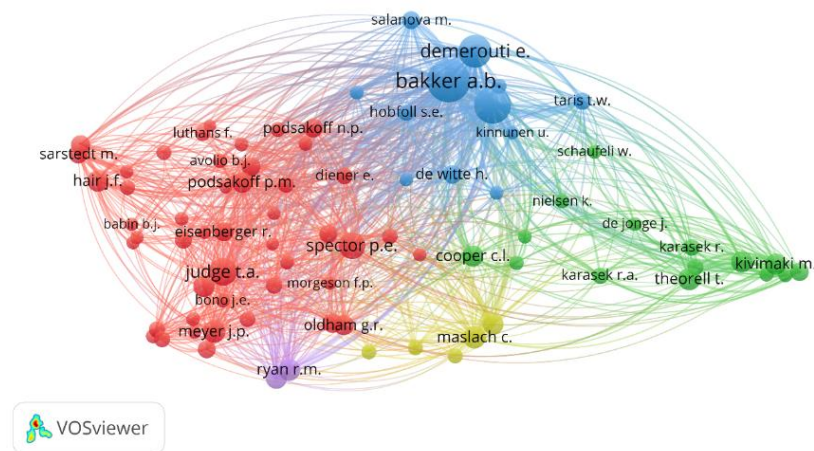a. **Co-Authorship Analysis**

Figure 1. Author Visualization
Source: Data Analysis by VOSviewer

The co-authorship network visualization illustrates the intellectual collaboration landscape among leading scholars in the field of work environment and employee job satisfaction. The network is clustered into several color-coded groups, each representing a distinct research community based on frequent co-authorship patterns. Notably, Bakker A.B. and Demerouti E. (blue cluster) emerge as central figures, indicating their pivotal role in the development of job demands-resources (JD-R) theory and employee well-being research. The red cluster, featuring authors such as Judge T.A., Podsakoff N.P., and Hair J.F., appears to concentrate on organizational behavior, leadership, and measurement models. Meanwhile, the green cluster, with prominent figures like Karasek R., Theorell T., and Kivimäki M., is closely associated with occupational health psychology and stress-related workplace studies.
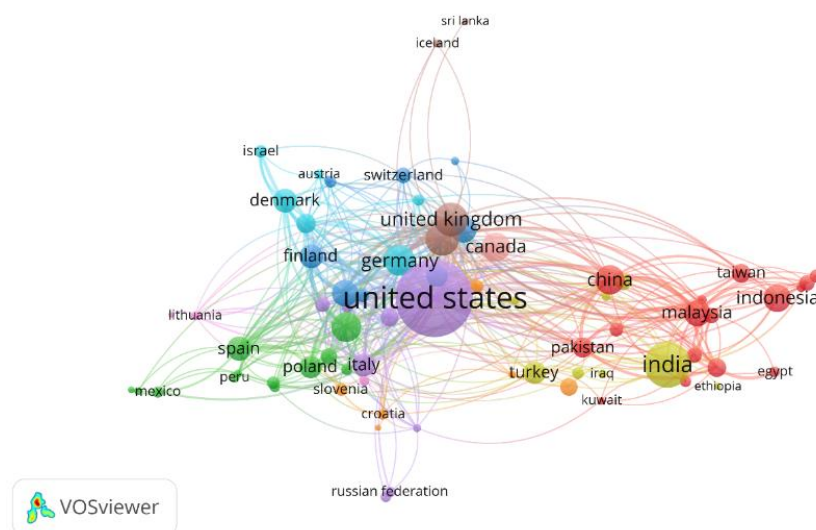

Figure 2. Country Viusalization
Source: Data Analysis by VOSviewer

The country co-authorship network visualization illustrates the global distribution and collaboration intensity of research on work environment and employee job satisfaction. The United States stands out as the most dominant contributor, occupying a central and oversized node, which reflects its high volume of publications and extensive international collaborations. It is closely linked with other major research-producing countries such as the United Kingdom, Germany, Canada, and Australia, forming a dense transatlantic research hub. The Asian cluster, represented by countries like India, China, Malaysia, and Indonesia, also shows substantial activity and increasing inter-country linkages, indicating emerging scholarly networks within the region. European nations such as Spain, Italy, Poland, and Finland are well integrated, suggesting active participation in collaborative research across borders. The presence of countries like Pakistan, Ethiopia, and Kuwait highlights growing global interest in the topic beyond traditional research powerhouses.

b. Citation Analysis

Table 1. Most Cited Article

Citations	Author and Year	Title
3450	[9]	Job demands-resources theory: Taking stock and looking forward
2009	[10]	The Copenhagen Burnout Inventory: A new tool for the assessment of burnout
1749	[11]	Self-Determination Theory in Work Organizations: The State of a Science
1395	[12]	No security: A meta-analysis and review of job insecurity and its consequences
1303	[13]	Family-Supportive Work Environments: The Role of Organizational Perceptions
1160	[14]	Organizational, work, and personal factors in employee turnover and absenteeism
734	[15]	A systematic review including meta-analysis of work environment and depressive symptoms
712	[16]	A prospective study of work perceptions and psychosocial factors affecting the report of back injury
577	[17]	Consequences of work-home segmentation or integration: A person-environment fit perspective
526	[18]	Job strain, effort-reward imbalance and employee well-being: A large- scale cross-sectional study

Source: Scopus, 2025
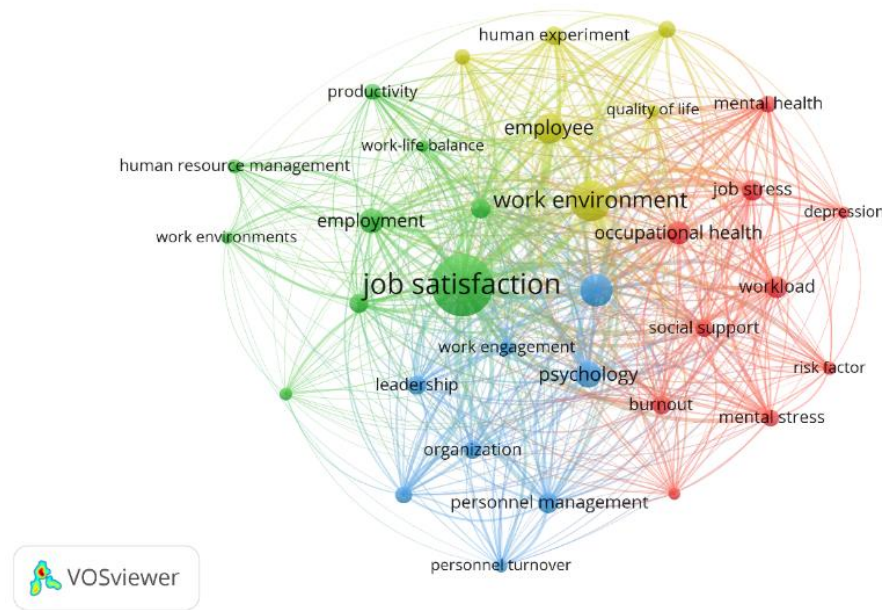
c.　**Keyword Co-Occurrence Analysis**

Figure 3. Network Visualization
Source: Data Analysis by VOSviewer

The keyword co-occurrence map reveals the conceptual structure of the literature on work environment and employee job satisfaction. At the center of the network, the terms "job satisfaction" and "work environment" appear as the most dominant and highly interconnected nodes, indicating their centrality to the field. Closely surrounding them are keywords such as "employee," "employment," and "psychology," suggesting that the literature is deeply rooted in psychological and human resource frameworks. The green cluster emphasizes organizational and managerial aspects—like "human resource management," "productivity," "employment," and "work-life balance" indicating a focus on how structural and policy-level workplace factors influence satisfaction.

The red cluster on the right side of the map reflects a strong focus on occupational health and psychosocial risk factors. Terms such as "job stress," "burnout," "mental

health," "depression," and "workload" co-occur frequently, suggesting an extensive body of literature addressing the negative consequences of poor work environments. This cluster demonstrates the interdisciplinary nature of the field, blending insights from psychology, occupational health, and organizational studies to explore how stressors in the workplace impact well-being and satisfaction. The high density of connections in this cluster shows that these themes are not only closely linked to each other but also intersect heavily with broader topics like job satisfaction and support systems.

Meanwhile, the blue cluster at the bottom encompasses keywords such as "organization," "leadership," "work engagement," "personnel management," and "turnover," representing literature focused on internal organizational dynamics and employee behavior. This cluster reflects concerns with leadership styles, employee retention, and

motivation, which are frequently studied in the context of job satisfaction. The coexistence and overlap of clusters across the map demonstrate a highly integrated field where topics such as health, leadership, productivity, and mental well-being are interwoven, highlighting the complex and multidimensional nature of job satisfaction in relation to the work environment.
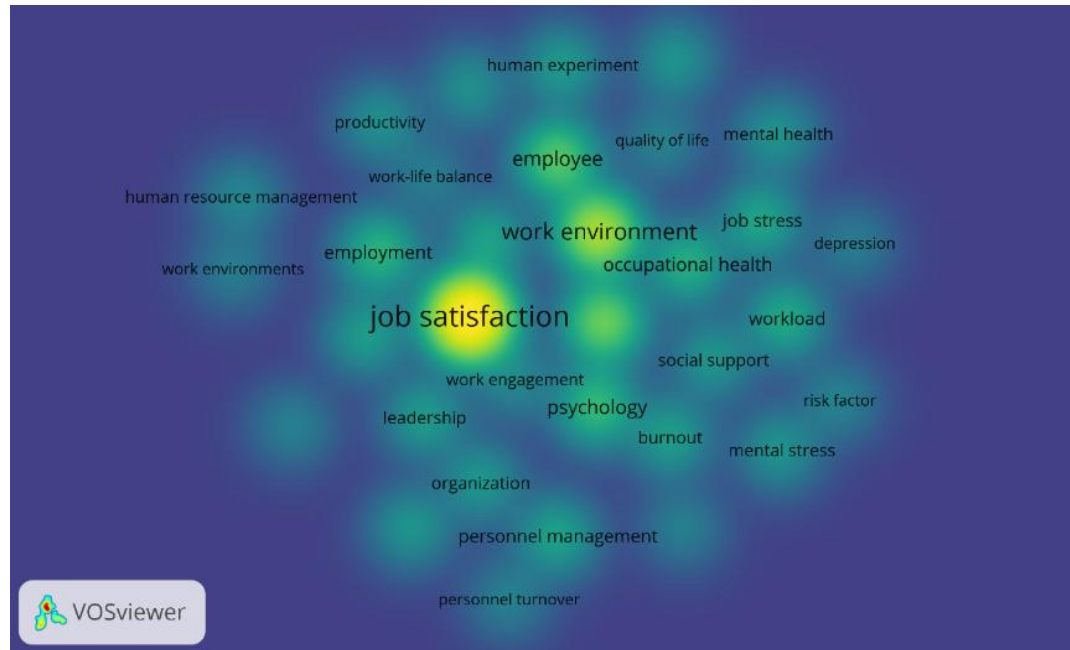

Figure 4. Density Visualization
Source: Data Analysis by VOSviewer

The density visualization highlights the most frequently occurring and interconnected keywords in the literature on work environment and employee job satisfaction. The color intensity, ranging from dark green to bright yellow indicates the relative prominence and co-occurrence frequency of terms. The keyword "job satisfaction" appears at the core of the visualization, rendered in bright yellow, signifying its status as the most dominant and frequently discussed term in the field. Closely surrounding it are terms like "work environment," "employee," "occupational health," and "psychology," all of which are highly relevant and central themes that frequently co-occur in the literature. This cluster reflects a strong conceptual focus on the psychological and organizational dimensions that contribute to or are affected by job satisfaction. In contrast, peripheral keywords such as "human resource management," "productivity," "mental stress," and "personnel turnover" are shown in cooler green or blue shades, indicating that while they are present in the discourse, they occur less frequently or are less interconnected. This suggests areas that may be either emerging or underexplored relative to core topics. Interestingly, terms associated with health and well-being such as "mental health," "burnout," "job stress," and "workload" are distributed around the central cluster, showing significant, though slightly less dense, thematic presence.
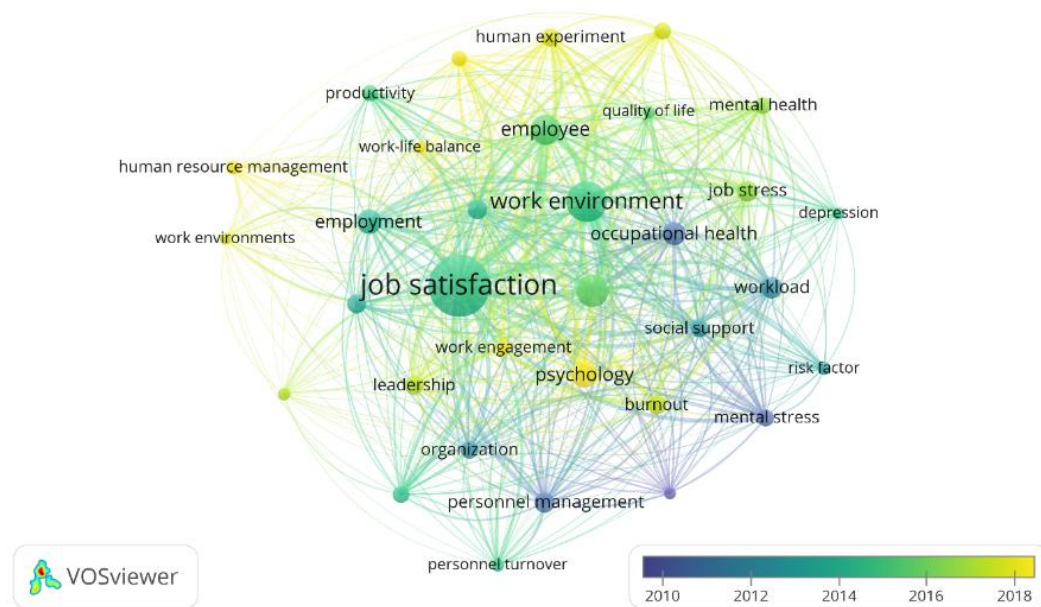
d.   Temporal Analysis

Figure 5. Overlay Visualization
Source: Data Analysis by VOSviewer

The overlay visualization provided by VOSviewer reveals the temporal evolution of research topics related to work environment and employee job satisfaction. The color scale ranging from purple (earlier years) to yellow (more recent years) indicates the average publication year in which keywords appear. Central concepts like "job satisfaction" and "work environment" appear in green, suggesting they have remained consistently central and relevant across the 2010–2018 period. Their persistent prominence highlights their foundational status in the field, forming the basis for a wide array of subtopics and research inquiries. Keywords such as "personnel management," "burnout," "mental stress," and "organization" are shaded in darker hues (blue and purple), implying that these were dominant themes in earlier years, particularly around 2010–2014. These topics laid much of the groundwork for studies on workplace behavior, occupational health risks, and

employee management systems. Over time, however, focus appears to have shifted, with newer areas of inquiry emerging in the brighter yellow spectrum. Terms like "human resource management," "productivity," "quality of life," "mental health," and "employee" represent more recent scholarly interest, indicating a trend toward a more holistic understanding of employee well-being and performance.

The visualization also points to a growing integration of psychological and human-centered concerns in newer studies, with yellow-colored terms such as "work-life balance," "social support," and "human experiment" reflecting a contemporary emphasis on empirical validation and individualized employee experience. These shifts suggest that while job satisfaction and work environment remain enduring pillars of research, the field has evolved to embrace broader socio-psychological constructs that align

with modern workplace trends, including mental health awareness, flexible work arrangements, and employee-centric management strategies.

3.2 Discussion

This bibliometric analysis provides a comprehensive overview of the intellectual landscape, thematic structure, and temporal development of scholarly research on the work environment and employee job satisfaction. Drawing from data extracted from the Scopus database and visualized using VOSviewer, the findings reveal a rich, interdisciplinary field marked by strong collaborative networks, evolving research priorities, and increasingly global participation. The discussion below synthesizes key insights from the analyses, including author networks, institutional and geographic contributions, thematic emphases, and temporal trends.

a. **Collaborative Patterns and Key Contributors**

The co-authorship network reveals a well-connected scholarly community with several influential contributors. Authors such as Bakker A.B. and Demerouti E., central in the blue cluster, demonstrate strong collaborative linkages and significant intellectual leadership in the development of theories like the Job Demands–Resources (JD-R) model. Their close association with other prominent figures such as Salanova M., Schaufeli W., and Taris T.W. indicates an established theoretical lineage within occupational health psychology. Meanwhile, the red cluster comprising scholars like Judge T.A., Podsakoff N.P., Hair J.F., and Eisenberger R. represents a parallel stream of research rooted in organizational behavior, leadership, and employee motivation. This cluster aligns with measurement and structural equation modeling

traditions often used in human resource management studies. The presence of overlapping linkages between clusters suggests increasing interdisciplinary convergence, as psychological and managerial frameworks begin to interact more closely in explaining employee outcomes.

b. **Geographic Distribution and International Collaboration**

The country collaboration map underscores the dominance of the United States as the primary research hub, with extensive links to the United Kingdom, Germany, Canada, and Australia. This finding aligns with existing bibliometric literature that highlights the U.S.'s centrality in social science research. However, a notable trend is the increasing involvement of emerging economies, particularly India, China, Malaysia, and Indonesia. These countries form their own regional clusters while also integrating into global collaboration networks. This shift may reflect the growing attention to employee well-being and workplace dynamics in the Global South, where industrial and service sectors are expanding rapidly. The increasing co-authorships involving Asian and Middle Eastern countries indicate an effort to localize global frameworks, adapt to cultural nuances, and address regional labor concerns such as work stress, job insecurity, and employment equity. As cross-border collaborations grow, the potential for shared methodological innovations and policy transfer also increases.

c. **Thematic Structure and Research Clusters**

The keyword co-occurrence analysis reveals that the field is structured around several interrelated but distinct thematic clusters. The central green cluster, anchored by "job satisfaction" and

"work environment," represents the core conceptual domain. It connects to terms such as "employee," "employment," "work-life balance," and "productivity," indicating an integrated interest in how internal and external conditions of the workplace shape satisfaction levels. The red cluster, which includes "burnout," "job stress," "depression," "mental health," and "workload," underscores the health-oriented literature on psychological strain and occupational risk. This cluster reflects a significant research focus on the negative consequences of adverse work environments and highlights the interdisciplinary nature of the field, drawing from psychology, occupational medicine, and public health. The blue cluster centers on organizational dynamics, with keywords like "leadership," "work engagement," "organization," and "personnel management." This suggests a growing body of research concerned with internal management practices, leadership styles, and employee development, all of which are viewed as critical determinants of satisfaction and retention. The overlap between clusters indicates that while themes may differ in emphasis, they are deeply interconnected in addressing the holistic employee experience.

d. **Conceptual Centrality and Research Intensity**

The density map reinforces the centrality of "job satisfaction" and "work environment," both of which appear in bright yellow-green tones, signifying high co-occurrence frequency and conceptual weight. Closely surrounding these terms are "employee," "occupational health," "work engagement," and "psychology," confirming the tight clustering of psychological and behavioral constructs in the literature. Peripheral but still notable terms such as "human resource management," "mental stress," and "personnel turnover" suggest areas of growing, yet still underdeveloped, scholarly attention. This visualization also indicates a concentration of research effort on topics with direct implications for organizational performance and employee well-being. The prominence of health-related terms highlights a shift in scholarly priorities from purely performance-driven metrics to more holistic considerations of well-being, mental health, and quality of life at work.

e. **Temporal Evolution and Emerging Trends**

The overlay visualization adds a temporal dimension to the analysis, showing the evolution of research themes between 2010 and 2018. Core concepts like "job satisfaction," "work environment," and "occupational health" are rendered in green, suggesting sustained relevance across the period. In contrast, keywords such as "personnel management," "burnout," and "organization" appear in blue and purple, indicating their early emergence in the literature. Recent years have seen the rise of newer concepts shown in yellow, including "human resource management," "productivity," "quality of life," and "mental health." These trends reflect a broader shift toward more integrative frameworks that consider not only environmental and organizational factors but also individual psychological experiences and socio-emotional dynamics. The increased frequency of terms like "work-life balance" and "social support" further underscores the growing importance of work design, supportive policies, and human-centered management

practices. Notably, the keyword "employee" itself appears in a lighter yellow, indicating a more recent emphasis on employee-centric research paradigms. This shift aligns with global labor trends emphasizing autonomy, voice, and well-being. The inclusion of "human experiment" and "quality of life" also suggests an increased use of experimental and empirical research designs, pointing toward a maturing field that is moving from theoretical exploration to practical validation.

f. **Implications for Future Research and Practice**

The findings of this study suggest several implications for both researchers and practitioners. From a scholarly perspective, future research should aim to further integrate fragmented subfields—such as occupational health psychology and strategic HRM—into unified frameworks. This integration can be achieved by focusing on intersectional constructs (e.g., work engagement as a mediator between leadership and satisfaction) and employing longitudinal or cross-cultural methodologies to enhance generalizability. For practitioners, the emerging themes highlight the importance of investing in employee-centric policies that go beyond financial incentives. Creating supportive work environments, providing mental health resources, fostering autonomy, and encouraging positive leadership are critical strategies for enhancing job satisfaction and, in turn, improving

organizational outcomes such as productivity and retention. Moreover, the growing internationalization of the field calls for context-specific adaptations of global models. Organizations operating in diverse cultural and economic contexts should consider localized employee needs and workplace dynamics to ensure effective HR strategies.

4. CONCLUSION

This bibliometric study has provided a comprehensive overview of the research landscape concerning the work environment and employee job satisfaction, revealing key authors, influential countries, central themes, and evolving trends. The findings highlight that scholarly interest in this field is both robust and interdisciplinary, with strong contributions from psychology, human resource management, and occupational health. Core concepts such as "job satisfaction," "work environment," and "employee well-being" remain consistently central, while emerging themes like "mental health," "work-life balance," and "quality of life" reflect a shift toward more holistic and human-centered approaches. The analysis also shows growing global collaboration, especially among scholars from Asia and Europe, signaling a more inclusive and diversified research agenda. Overall, this study underscores the need for continued integration across disciplines and geographies, and it invites future researchers to explore underdeveloped themes and apply innovative methodologies to deepen our understanding of how work environments shape employee experiences and organizational outcomes.

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