Review Article

Mapping the research landscape of employee well-being: A bibliometric review of three decades

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ABSTRACT

The importance of promoting employee well-being in the workplace has gained significant attention. To explore this growing field, a bibliometric study was conducted to examine the research landscape through a systematic analysis of 1284 publications from the Web of Science database, covering the period from 1990 to 2021. Using Bibliometrix and Vosviewer software, this study addressed five research questions focusing on the major contributors, conceptual, intellectual, and social structure of the field, as well as significant research gaps. The findings suggest that employee well-being is an interdisciplinary field drawing particularly on management and applied psychology. Through citation analysis, this study identified the most cited authors, institutions, and most productive countries. To understand the conceptual underpinning of this research field and trace its chronological evolution, co-occurrence analysis of the authors' keywords was performed. Document co-citation analysis identified four research clusters that constituted the intellectual base of this research area. Furthermore, social network analysis highlighted patterns in author, institution, and country contributions and collaboration. The study concludes by exploring future research directions in the field of employee well-being.

Keywords: employee well-being; bibliometric analysis; co-citation; conceptual; intellectual and social structure

1. Introduction

Employee well-being has become a key focus in contemporary workplaces. As work conditions continue to evolve, scholars underscore the importance of organizations prioritizing the well-being and satisfaction of their employees[1]. This is supported by research indicating that it is connected to positive outcomes such as increased employee engagement[2], heightened organizational commitment[3], and enhanced loyalty[4]. Organizations that focus on this aspect often experience improvements in overall performance[5], reduced turnover intentions[6], and decreased healthcare costs[7]. These advantages highlight that emphasizing welfare of the workforce is not only an ethical consideration but also a strategic necessity for organizational success.

The definition of employee well-being is characterized by ambiguity, with a lack of consensus leading to broad conceptualizations[8,9]. Well-being is generally defined as "optimal psychological experience and functioning"[10]. It is divided into two research traditions: hedonic and eudaimonic well-being. Hedonic well-

being refers to positive emotions associated with obtaining desired material possessions or having opportunities to pursue one's wishes, while eudaimonia relates to feelings of personal expressiveness[10,11]. Ryan and Deci further elaborated on these viewpoints, describing the hedonic well-being focuses on happiness and pleasure attainment, while eudaimonic well-being emphasizes meaning and self-realization[12]. Ryff proposed a model of positive functioning with six dimensions: self-acceptance, positive relations, environmental mastery, autonomy, purpose in life, and personal growth[13]. Warr introduced the concept of context-specific well-being, arguing that domain-specific constructs of affective well-being are essential for assessing both work and non-work-related mental health[14]. Meyer and Maltin suggested expanding the employee well-being concept to include measures of both eudaimonic and hedonic well-being[3] while Zheng et al. proposed that it comprises three dimensions: psychological well-being, life well-being, and workplace well-being[9]. This multifaceted approach to understanding well-being reflects the complexity and broad scope of this concept.

Previous literature reviews have laid important groundwork for understanding this concept within specific contexts such as human resource management (HRM), leadership, or workplace resources[15–17]. Systematic reviews have provided insights into workplace resources contributing to employee well-being and performance[16], as well as the longitudinal development of this field[18]. This review distinguishes itself from earlier literature reviews by addressing the limitations of traditional reviews such as researcher bias, replication issues, and lack of objectivity[19]. Previous bibliometric reviews on this topic had limitations in scope, focusing on specific sectors, periods, topics, and industries. For example, focusing only on specific sectors such as business economics[20], examining a single decade of research on work-from-home, employee well-being and performance dynamics[21], or exploring niche industries such as construction[22], focusing on specific topics such as psychological well-being within business and economics[23], employee well-being and innovativeness[24], and subjective well-being of knowledge workers[25]. While previous reviews gave important insights, this study extends the timeline to three decades including all disciplines, offering a broad overview of the subject. It offers a detailed view of the field's historical development rebuilding the discussion in terms of concepts, contexts, theoretical underpinnings, and scientific publications. By adopting a broader perspective, this study fills the gaps left by prior reviews, capturing emerging trends, key themes, and shifts across various domains. This approach allows for a more nuanced understanding of the field, providing fresh insights that advance the conversation on this subject beyond what has been explored in previous studies.

As research in this field rapidly expands, it becomes increasingly challenging for academics to remain informed about relevant fronts. Recognizing the connections and synergies between various research traditions is important for comprehending the complex, multi-dimensional nature of employee well-being[26]. A narrow focus on specific disciplinary viewpoints may limit our understanding of this multifaceted concept. New scholars often struggle to identify key contributors and understand the conceptual, intellectual, and social underpinnings of this field. In line with Mukherjee et al.[27], this article presents an overview of conceptual, intellectual, and social structures along with major trends, knowledge gaps, and future opportunities.

Specifically, we address the following research questions:

RQ1: Who are the significant contributors to employee well-being literature?

RQ2: How has the conceptual framework and research in this area evolved over time?

RQ3: What is the core intellectual basis driving this research field?

RQ4: What collaborative networks and social connections exist among researchers in this area?

RQ5: What are the major research gaps and future research directions in this domain?

To address these questions, we conducted a review of existing studies using bibliometric and content analysis methods[28]. The study employed two primary analysis techniques: scientific mapping and performance analysis. Scientific mapping identified the knowledge clusters within the field using a relational approach while performance analysis assessed productivity levels[29,30]. Following the recommendations of Mukherjee et al.[27], the outcomes of both analyses may serve as a basis for theory development. The study identified gaps in the extant literature, inconsistencies in research findings, and under-researched areas, as highlighted by the content analysis of the articles.

2. Search strategy and methodology

This study used the Thomson Reuters Web of Science (WOS) database to compile relevant literature. The WOS database was chosen since it is known for its high-quality standards[31] and multidisciplinary scientific studies. It is widely used to assess the academic impact of scientific output at different levels, such as institutions, journals, and individuals[32]. The WOS core collection includes multiple citation indexes, such as Science Citation Index Expanded (SCI-EXPANDED), Conference Proceedings Citation Index-Social Science & Humanities (CPCI-SSH), Social Sciences Citation Index (SSCI), Conference Proceedings Citation Index-Science (CPCI-S), Arts & Humanities Citation Index (A&HCI) and Emerging Sources Citation Index (ESCI).

A search was conducted using keywords related to this topic as illustrated in Figure 1. The search strategy employed Boolean operators specifically using "OR" to combine various terms such as "employee well-being" OR "employee well being" OR "employee wellbeing" OR "job well being" OR "workplace well being" as search keywords in the title, abstracts, and keywords fields. The initial search yielded 1506 articles, which was refined to 1305 by limiting to document type "articles". Further restriction to English publications resulted in 1284 articles published between 1990 and 2021. The final database from this search included citation information, article title, author, journal name, year of publication, organization, country, keywords, and abstracts.

Two analytical tools were employed for bibliometric analysis: the open-source bibliometrix package[31] and the Vosviewer[33,34]. This approach is particularly effective for science mapping, facilitating the identification of research fronts, conceptual patterns, intellectual foundations, and the social networks within particular research community[31]. This review is based on science mapping and performance analysis of bibliographic collections comprising 1284 systematically identified research articles published in WOS over a three-decade period, as shown in **Figure 1.** Between 1990 and 2021, 3359 authors from 1387 organizations across 71 countries contributed to the scholarly literature.
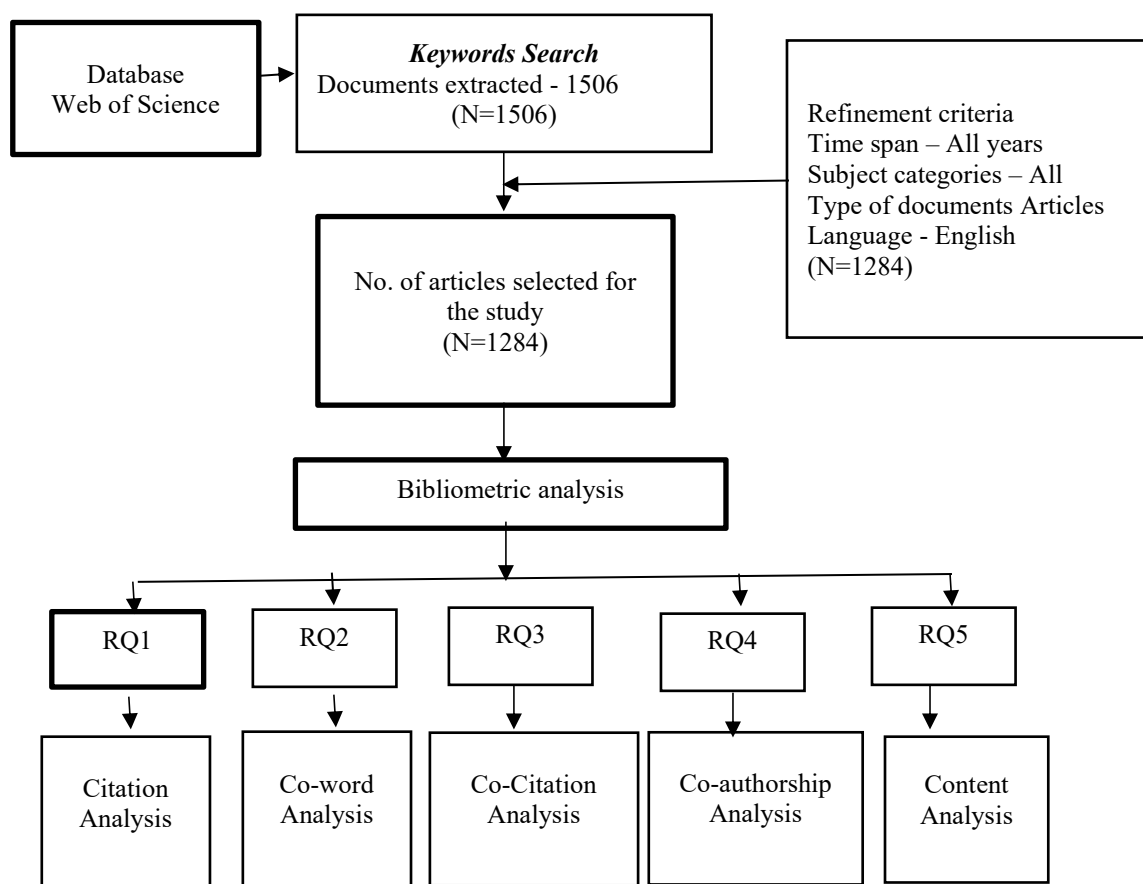
Figure 1. Review methodology.

3. Preliminary analysis

3.1. Publication trend

Figure 2 illustrates the progression of scholarly interest in this area from 1990 to 2021. Prior to 2015, this field received limited attention with fewer than fifty articles published annually. However, 2015 marked a significant shift as depicted in **Figure 2**, with a substantial increase in publications. This upward trajectory continued in subsequent years peaking in 2020 with 227 articles. The dataset indicates considerable variations with annual publications ranging from 1 to 227, and notably no papers were published in 1991. This trend highlights growing recognition of employee well-being as a vital research area.

Research publications on this subject have experienced a notable increase in recent times. Approximately 85% of these articles have been published within the last decade, reflecting a rapid acceleration in research activity. Notably, the two dominant domains driving this research field are management (35%) and applied psychology (26%), collectively contributing to more than half of all published articles on this topic. **Figure 3** illustrates the publication trend across various disciplines. The analysis identified ten distinct subject areas in which articles on this topic have been published: (1) Management (2) Psychology applied (3) Public environmental occupational health (4) Business (5) Industrial relations labor (6) Psychology multidisciplinary (7) Environmental sciences (8) Social sciences interdisciplinary (9) Nursing and (10) Environmental studies. **Figure 3** shows the publication pattern across various research domains indicating the potential for a better understanding of the subject when data from multiple disciplines is synthesized. This integration of data has the potential for finding previously

undiscovered patterns and relationships, which may ultimately contribute to a more profound understanding of the topic.
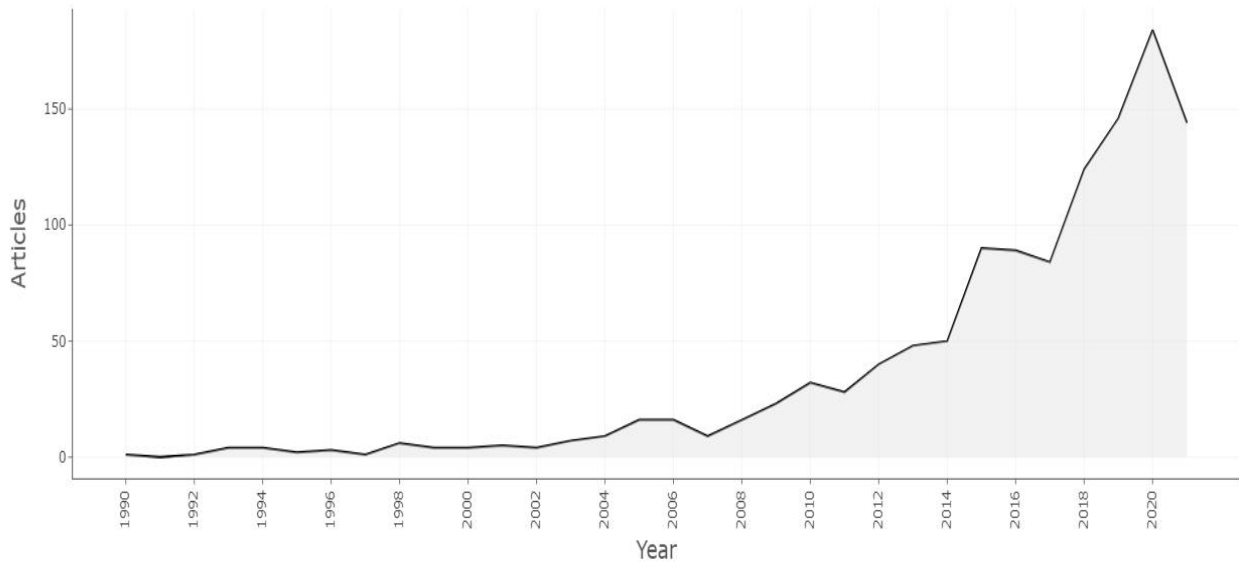
Figure 2. Yearly publications from 1990 to September 2021.

Note: It is important to note that the articles for the year 2021 are only displayed up to September 2021. As a result, the graph does not present a complete representation of all articles published within that calendar year.
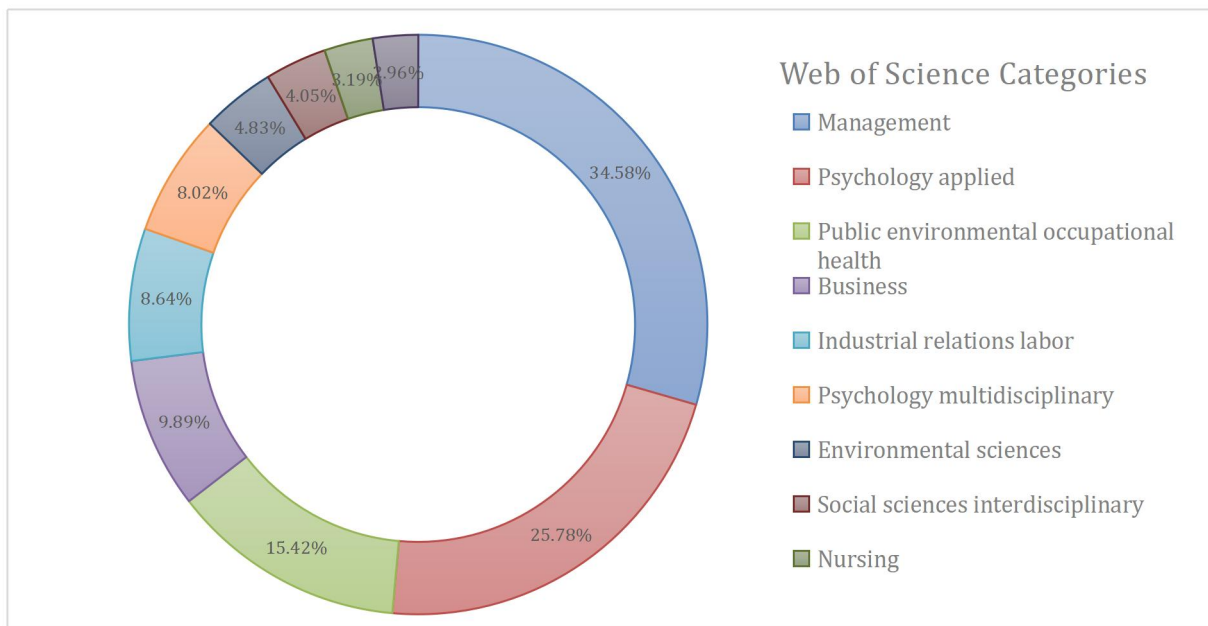
Figure 3. Publication trend across disciplines.

4. Results and discussion

4.1. Major contributors to the employee well-being research

4.1.1. The most influential & active countries

Table 1 displays the citation analysis of 71 countries that have published articles on this subject. The United States of America (USA) stands out as a global leader in this field with a total of 9182 citations across 264 articles. The USA, Netherlands, United Kingdom, Australia, and Canada are the top five

countries in terms of citations. It is noteworthy that the Netherlands has the highest average citations per document with a remarkable value of 72.49.

Table 1. Top ten active countries based on citations and publications of articles.

Countries	TC	Ranking	Countries	Articles	Ranking
United States	9182	1	United States	264	1
Netherlands	5872	2	Australia	135	2
United Kingdom	3109	3	United Kingdom	109	3
Australia	2758	4	China	88	4
Canada	2229	5	Netherlands	81	5
China	1330	6	Canada	61	6
Finland	1323	7	Finland	59	7
Germany	1078	8	Germany	50	8
Denmark	647	9	India	44	9
New Zealand	622	10	Spain	33	10

*TC= Total Citations.

4.1.2. The most significant authors and institutions

Table 2 presents the most prolific authors and organizations in this research field. According to the data Schaufeli (20), Bakker (16), Boxall (11), and Sonnentag (10) are the leading authors in this domain followed closely by De witte, Kinnunen, and Nielsen, who have each produced nine documents. Furthermore, Brunetto, Chambel, and Demerouti have each contributed eight documents to the field. Regarding organizational contributions, Utrecht University, Erasmus University, and Tilburg University have produced the highest number of published and cited articles with thirty-five, twenty-six, and twenty-three articles respectively.

Table 2. Top ten most active authors and institutions based on number of citations.

Authors	Documents	Citations	Organization	Documents	Citations
Schaufeli, W. B.	20	2135	Utrecht University, Netherlands	35	3343
Bakker, Arnold B.	16	2659	Erasmus University, Netherlands	26	2478
Boxall, Peter	11	431	Tilburg University, Netherlands	23	1347
Sonnentag, Sabine	10	711	Finnish Institute of Occupational Health, Finland	22	709
De witte, Hans	9	180	North West University, South Africa	21	252
Kinnunen, Ulla	9	153	Katholieke Universiteit Leuven, Belgium	20	410
Nielsen, Karina	9	570	The University of Manchester, England	19	643
Brunetto, Yvonne	8	25	University of Melbourne, Australia	19	482
Chambel, Maria José	8	78	Monash University, Australia	18	403
Demerouti, Evangelia	8	1313	Deakin university, Australia	16	479

4.1.3. The most active and influential journals

Table 3 displays the top ten leading journals in this area along with details on the number of articles published and the citations for each journal. **Table 3** clearly shows that there is no distinct leader among the

journals in terms of the number of published articles. The International Journal of Human Resource Management and the International Journal of Environmental Research and Public Health, both with 38 articles, are the leading journals in this field. These journals are followed by the Journal of Occupational Health Psychology with 35 articles, Frontiers in Psychology with 30 articles and Personnel Review and Work and Stress, both with 29 articles each.

Table 3. Top ten leading journals based on publication output.

Journal	Articles	Citations
International Journal of Environmental Research and Public Health	38	101
International Journal of Human Resource Management	38	694
Journal of Occupational Health Psychology	35	3335
Frontiers in Psychology	30	167
Personnel Review	29	416
Work and Stress	29	1793
Journal of Occupational and Environmental Medicine	26	483
European Journal of Work and Organizational Psychology	24	714
Journal of Managerial Psychology	23	209
Journal of Organizational Behavior	21	1215

4.1.4. The most highly cited articles

Table 4 presents a list of the top 10 most globally cited articles. The article by Bakker and Demerouti[35] stands out as the most cited article globally. This article's prominence may be attributed to the introduction of the groundbreaking job demands-resources theory, which has received 881 citations and has made substantial contributions to this research field.

Table 4. List of top ten globally most cited articles based on number of citations.

Author/Year	Article	Citations
Bakker & Demerouti, 2017[35]	Job demands-resources theory: Taking stock and looking forward	881
Gardner et al., 2005[36]	"Can you see the real me?" A self-based model of authentic leader and follower development	754
Schaufeli et al., 2008[37]	Workaholism, Burnout, and Work Engagement: Three of a Kind or Three Different Kinds of Employee Well-being?	628
De Jonge et al. ,2000[38]	Job strain, effort-reward imbalance and employee well-being: a large-scale cross-sectional study	380
Tims et al., 2013 [39]	The impact of job crafting on job demands, job resources, and well-being	361
Thompson & Prottas, 2006[40]	Relationships among organizational family support, job autonomy, perceived control, and employee well-being	354
Demerouti et al., 2004[41]	The loss spiral of work pressure, work–home interference and exhaustion: Reciprocal relations in a three-wave study	340
Avey et al., 2010[42]	Impact of positive psychological capital on employee well-being over time	339
Hakanen & Schaufeli, 2012[43]	Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study	321
Voorde et al., 2012[15]	Employee Well-being and the HRM–Organizational Performance Relationship: A Review of Quantitative Studies	319

4.2. Conceptual structure of employee well-being field

The conceptual framework includes three key components: keyword analysis based on author keywords, thematic mapping, and the progression of themes over time. It highlights the key concepts, themes, and theories that have emerged over time.

4.2.1. Keyword analysis

When two keywords appear together in a publication's title, abstract, or list of keywords, it is counted as a co-occurrence[44]. In a network, a cluster comprises a group of interconnected nodes that are closely associated. Every node within the network is exclusively assigned to one cluster[44]. A network visualization map was created using Vosviewer's co-word feature, employing a distance-based approach. The map included 66 author keywords that met the minimum threshold of 10 occurrences, out of a total of 2859 author keywords. The network visualization map of employee well-being research indicates three distinct clusters of similar and related topics comprising 66 topic nodes, reflecting the conceptual patterns based on co-occurrence of author's keywords as shown in **Figure 4.** The resulting map consists of three color-coded clusters (red, blue, and green) representing related terms and topics, offering insights into the most explored areas in the literature. **Table 5** presents the ten most frequently used author keywords based on fractional counts and a minimum co-occurrence threshold of 10 keywords.

Table 5. Top ten author keywords based on co-occurrence analysis.

Author Keywords	Occurrences
employee well-being	319
well-being	208
job satisfaction	101
work engagement	88
Burnout	83
Stress	45
workplace well-being	41
Leadership	33
job demands	30
Performance	30

Employee well-being (319), well-being (208), and job satisfaction (101) are the top three author keywords based on their frequency of use in the literature.
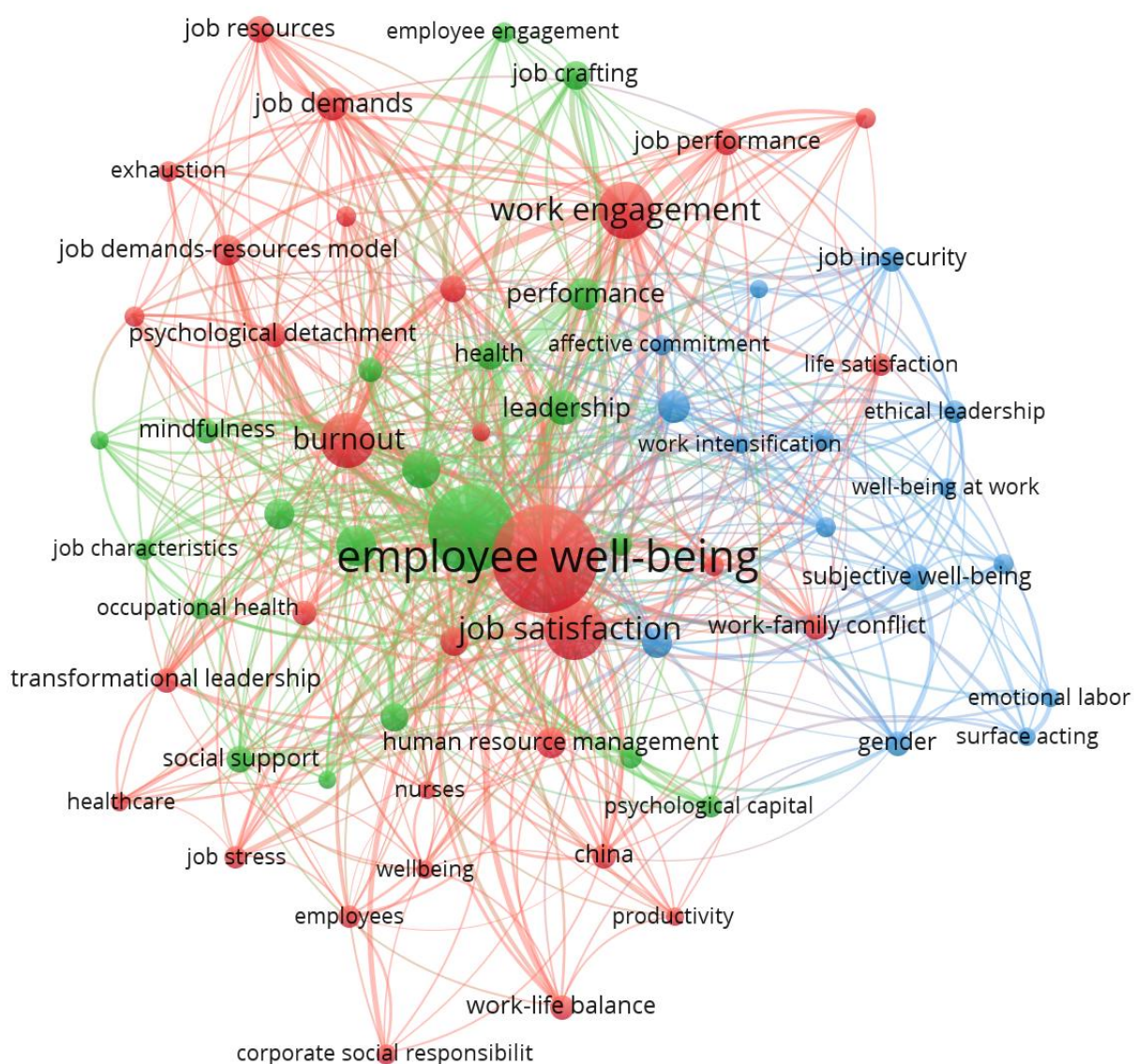
Figure 4. Static image of network visualization map: co-occurrence of author's keywords.

Note: Node size reflects co-occurrence frequency while the thickness of connecting lines represents the strength of associations between keywords. (Download map from https://tinyurl.com/2xtm9ahl)

*Strong association:* ▬▬ *weak association:* ▬ *and no connecting line indicates no relationship*

4.2.2. Thematic mapping and evolution

The thematic map offers a framework for understanding the main topics and subtopics in employee well-being research. In line with Di Vaio et al.[34], author's keywords is used for co-word analysis using biblioshiny. The studies have been grouped into different thematic clusters based on the difference in their levels of importance and levels of association.

4.2.2.1. Established themes in employee well-being field

This research field encompasses several established themes as depicted in **Figure 5**. Two motor themes have emerged as central to this area of study: well-being and emotional labor. The well-being cluster encompasses a wide range of interconnected topics. These include burnout, stress, mental health, job

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characteristics, fatigue, need for recovery, and quality of work life. Within this primary motor theme, job characteristics are further explored through subthemes such as social support, job stress, physical activity, working conditions, and shift work. Additionally, this cluster examines personal factors like self-esteem and self-efficacy. The second motor theme is emotional labor which focuses on surface acting and deep acting.
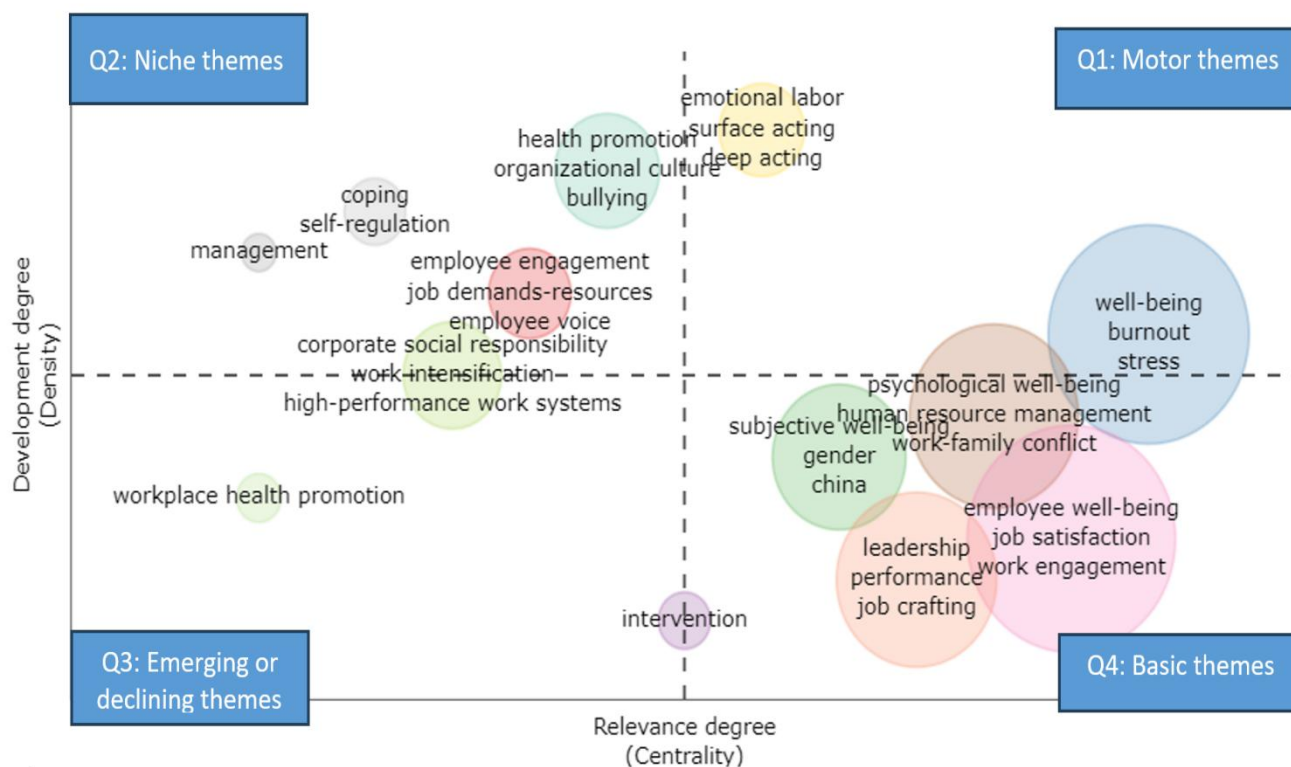
Figure 5. Thematic map of topic distribution in employee well-being research.

Note:

Q1: Key central theme consisting influential topics driving the field's development

Q2: Specialized and emerging topics that are gaining attention

Q3: New and rapidly growing areas of research or topics that are losing relevance and scholarly interest

Q4: Foundational concepts that remain stable over time providing the core knowledge of the field.

Four basic themes have been identified that form the core concept of this field. The most prominent is psychological well-being which plays a crucial role in structuring the field. This theme intersects with various concepts including human resource management, work-family conflict, job insecurity, and culture. Organizational factors influencing employee well-being such as perceived organizational support, organizational justice, workplace incivility, and diversity are also explored within this cluster. Leadership factors including abusive supervision, empowering leadership, and ethical leadership are examined alongside employee outcomes like affective commitment, motivation, organizational citizenship behavior, and work-family balance. The conservation of resources theory serves as the primary theoretical framework for this cluster.

Another significant basic theme is employee well-being which focuses on workplace well-being aspects such as work engagement, exhaustion, and satisfaction. This cluster includes job-related factors like autonomy, control, trust, empowerment, and authentic leadership. It also explores the impact of work stress

and depression on performance, organizational commitment, productivity, and turnover intentions. Recent studies have examined the effects of workplace changes due to COVID-19 on employee well-being[45]. The Job Demands-Resources (JD-R) model serves as the main theoretical foundation for this cluster[46].

Leadership emerges as a distinct basic theme primarily focusing on the impact of leaders on employee outcomes. These outcomes include performance, mindfulness, resilience, psychological capital, affect, autonomy, flourishing, and job crafting behaviors. Self-determination theory serves as the primary theoretical framework for this cluster. The final basic theme is subjective well-being (SWB), which has seen increased contributions from Chinese authors. This cluster encompasses studies on gender, workplace spirituality, emotional intelligence, emotion regulation, happiness, supervisor support, and spiritual leadership.

4.2.2.2. Declining themes in employee well-being research

The landscape of employee well-being research has seen shifts in thematic focus over time. Studies on workplace health promotion and intervention have emerged as a declining or marginal theme, characterized by low density and centrality in the research network. Among the five niche themes identified, employee engagement stands out as a major cluster encompassing studies related to job-demand resources and employee voice. Other niche themes including corporate social responsibility, management, coping, and health promotion have developed into highly specialized but isolated areas within the field. These themes while well-developed remain somewhat disconnected from the central discourse on employee well-being, suggesting opportunities for integration of ideas in future research.

4.2.3. Thematic evolution

To highlight the development of research themes over time, we divided our temporal range (1990-2021) into three sub-periods: 1990-2014, 2015-2018, and 2019-2021. This uneven distribution was deliberately chosen to track the evolution of research before publications on this topic started to emerge significantly (time period before 2015).

During the first sub-period (1990-2014), well-being and positive psychology appeared as separate themes. However, the diagram shows a wide convergence of positive psychology and context-free well-being towards employee well-being in the second phase (2015-2018). Similarly, burnout converged into work engagement, emotional exhaustion, and work-family conflict. From 2015 onwards, new topics such as work-family conflict, work engagement, emotional exhaustion, and occupational health became important aspects of these studies. In the second sub-period (2015-2018), work-family conflict, workplace, human resource management, and occupational health emerged as significant research pathways for studying this topic. The third sub-period (2019-2021) witness a focus on workplace well-being, psychological well-being, and the impact of COVID-19 on employee well-being.

4.2.4. Post pandemic trends in employee well-being

The COVID-19 pandemic significantly impacted employee well-being, triggering a rapid shift in work environments[45] and evoking intense emotions among individuals[47].This transition to remote work and new policies to reduce in-person contact led to increased feelings of work loneliness[48] and negatively affected workplace relationships and work-life balance[49]. While remote work offered some advantages, studies highlight the drawbacks of homeworking and are influencing post-pandemic work arrangements, contributing to debates on employee well-being models based on job characteristics[50]. During the pandemic, elevated stress levels contributed to physical, mental, financial, and social concerns, particularly in industries like hospitality[51]. The perceived threat of the pandemic created uncertainty and fear, further increasing

stress levels and negatively impacting subjective mental well-being[52]. In response, factors such as effective internal communication[53], organizational safety and stability[54], and supportive leadership[55] have been identified as crucial in promoting psychological well-being in the context of teleworking. As the workplace continues to evolve post-pandemic, addressing these challenges and leveraging positive factors will be essential for developing effective employee well-being strategies.

Figure 6 illustrates how different themes changed and became interconnected over time, enabling us to comprehend the longitudinal development of various research fronts in this discipline. Historically, research in this domain was dominated by health-related variables such as burnout - a work-related stress syndrome coined in the 1980s. However, in recent years following the positive psychology approach, the focus has shifted from ill-being to the well-being of employees. This shift encompasses multiple dimensions of employee well-being, including work engagement, satisfaction, psychological well-being, and workplace well-being.
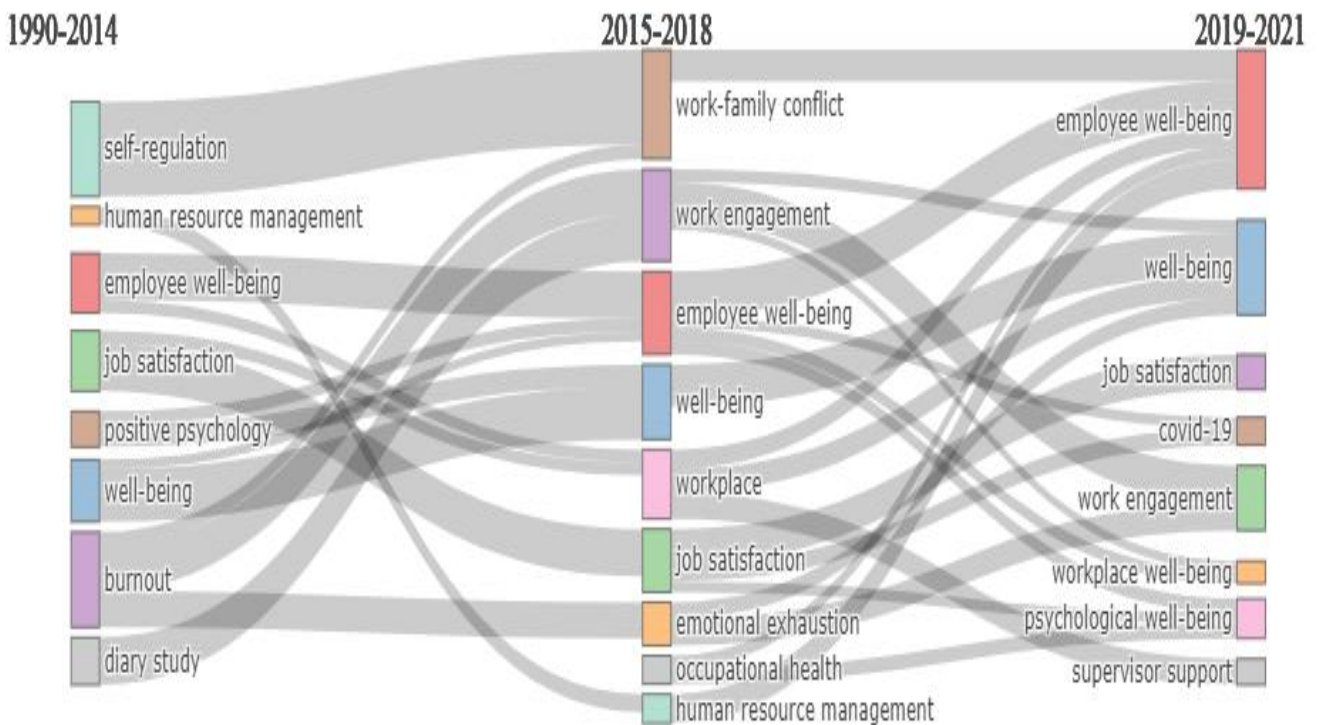
Figure 6. Thematic evolution: Three-field plot showing inter-linkages among the themes separated by three-time spans 1990-2014, 2015-2018 and 2019-2021.

4.3. Intellectual structure of employee well-being field

We analyzed the intellectual underpinnings of this research field by employing document co-citation analysis. This method involved identifying the most frequently cited publications on the subject and determining which articles have significantly influenced the intellectual foundation[56]. Through co-citation analysis, we gained a deeper understanding of the major trends and advancements that have shaped the knowledge base of the existing literature. This approach examines the interactions between articles and their co-citations. Following the approach outlined by Khanra et al.[28], we conducted a co-citation analysis of documents to identify key thematic areas. The co-citation analysis identified the presence of four distinct clusters, which are illustrated in **Figure 7** and description of clusters is presented in **Table 6**.
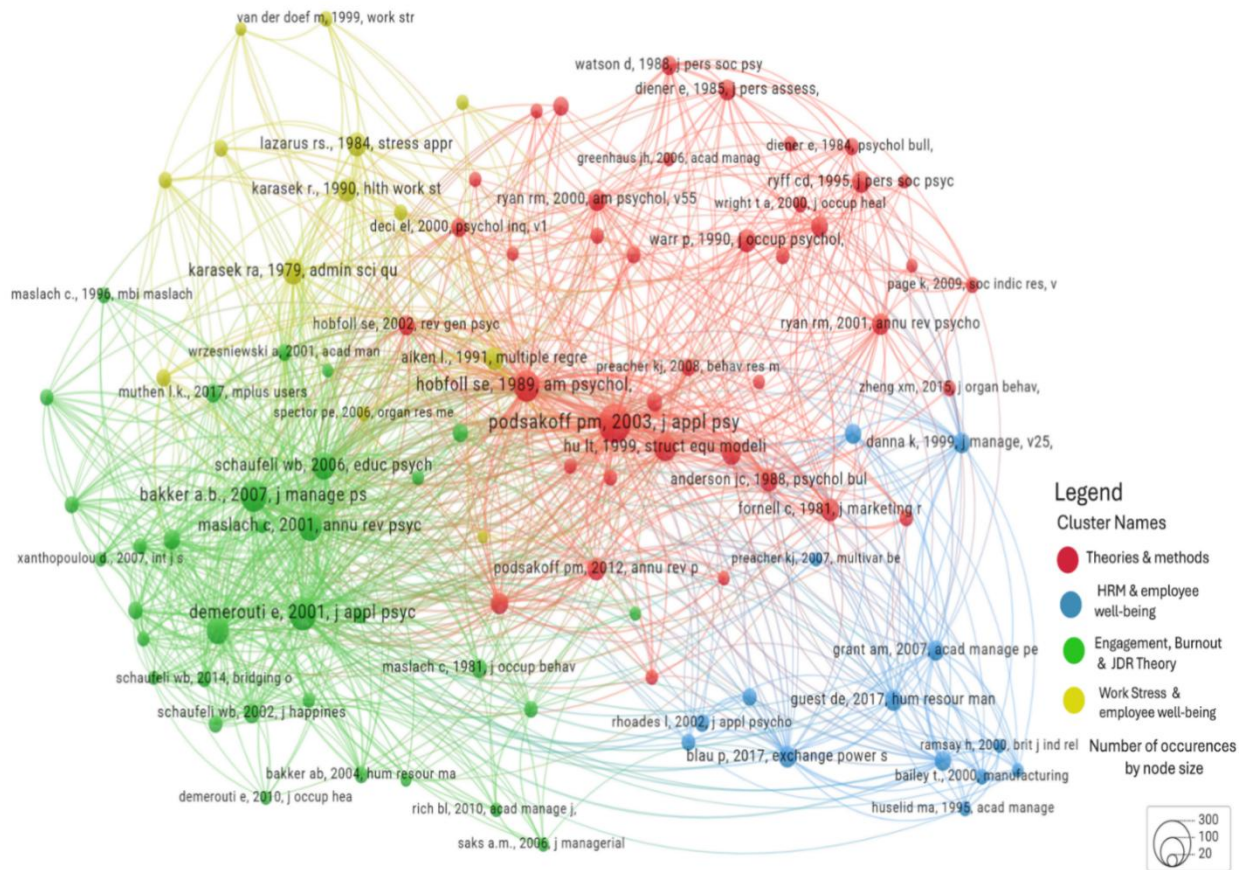
Figure 7. Intellectual Structure based on document co-citation
(Download network visualization map from https://tinyurl.com/232certl).

Note: The sizes of the labels and circles represent the importance of the element, and the distance between elements reflects the degree of similarity.

4.3.1. Cluster 1 (red): Theoretical & methodological advancements

The largest cluster consisted of 40 documents that primarily discussed the prevailing research approaches employed in the studies. This cluster is further subdivided into two distinct subgroups, each with a different research focus. The first subgroup primarily concentrated on the development and evaluation of new methods and techniques; such as statistical analysis, common method bias[56], regression-based analysis[57], structural equation modelling[58,59], new approaches to covariance structure analysis[60], distinction between moderator and mediator variables[61] and multiple mediator models[62] in behavioral research. This subgroup is dedicated to exploring and assessing the efficacy of these new methods and techniques which are illustrated by seminal works on methodological breakthroughs.

The second subgroup comprised core theoretical articles that have been instrumental in shaping this subject field. These studies have delineated the concept, devised the measures, and proposed the theories that have served as the foundation for the research, for instance, self-determination (SDT) theory[63], positive psychology[64], theory of work-family enrichment[65], broaden-and-build theory of positive emotions[66], and the conservation of resources theory(COR)[67].

Hobfoll's COR theory examines how individuals aim to maintain protect, and build resources, emphasizing the accumulation and loss of resources as central to stress and well-being[67]. In contrast, theories like positive psychology and the broaden-and-build theory focus more on enhancing well-being

through positive experiences rather than on stress management or resource depletion. SDT theory suggests that well-being is primarily influenced by the satisfaction of three psychological needs: autonomy, competence, and relatedness. Although these theories share a common goal of enhancing well-being and positive outcomes, they differ in their focus and application. For example, SDT emphasizes intrinsic motivation, while positive psychology focuses on strengths and happiness, and the broaden-and-build theory underscores the expansion of positive emotions. The COR theory and theory of work-family enrichment prioritize resource management and the interplay between various life domains, whereas SDT, positive psychology, and the broaden-and-build theory stress intrinsic motivation, positive traits, and the impact of positive emotions on well-being. Despite these distinctions, these theories collectively offer a comprehensive understanding of employee well-being, addressing aspects such as stress management, resource accumulation, fulfillment of psychological needs, and the promotion of positive emotions and experiences. Additionally, researchers have developed measurement scales to assess well-being[68] and mental health[14]. Collectively, the studies in this cluster have laid the foundation for research on employee well-being.

4.3.2. Cluster 2 (blue): Human resource management and employee well-being

Cluster 2 primarily focused on the relationship between human resource management (HRM) and employee well-being. Social exchange theory (SET)[69] served as the major theoretical framework for this cluster. This cluster encompassed review articles that examined the effects of perceived organizational support on various outcomes[70].

4.3.3. Cluster 3 (green): Engagement, burnout, and the job demands-resources (jd-r) theory

The second largest cluster labeled as Cluster 3, comprises 33 documents and differs from Cluster 1 by its primary focus on job burnout, engagement, and the job demands-resources (JD-R) theory[46]. While Cluster 1 explored diverse approaches, the core focus of Cluster 3 was to examine factors that contributed to burnout. The articles within this cluster provided definition and explanation of burnout and examined the individual and situational job stressors that contributed to burnout and dissatisfaction[71]. Additionally, these articles discussed various strategies to prevent and reduce burnout, such as job design, coping mechanisms, and employee engagement[72]. Collectively, these articles offer valuable insights to those seeking to enhance their understanding of burnout in the workplace.

4.3.4. Cluster 4 (yellow): Work Stress and employee well-being

This cluster of articles focused specifically on research related to stress. These articles examined the relationship between job characteristics, job stress, and burnout. Furthermore, these articles discussed the antecedents of employee well-being and theoretical advancements particularly in relation to the Job strain model[73]. In a meta-analytic article[74], three dimensions of burnout were discussed.

Table 6. Description of clusters based on document co-citation analysis.

Cluster name		Author & Year	Document weight	Document description
Cluster1 (red) Theoretical & methodological advancements		Podsakoff et al., 2003	1696	A review article that discusses common method biases
		Hobfoll, 1989	1317	A theoretical article that presents new model of stress known as conservation of resources model
		Hu & Bentler, 1999	894	Article reviewing cut off criteria for fit indexes using 2-index presentation strategy in covariance structure analysis
		Podsakoff et al., 2012	673	A review article describing the method biases
		Hobfoll, 2001	655	A theoretical article that discusses the application of COR theory and its limitations

Table 6. (*Continued*)

Cluster name	Author & Year	Document weight	Document description
Cluster 2 (blue) Human Resource Management and employee well-being	Blau, 2017	559	A book that discusses principles of reciprocity and imbalance on complex social structure
	Voorde et al., 2012	548	A review article on the link between HRM, employee well-being and performance
	Grant et al., 2007	536	A review article that discusses impacts of managerial practices on well-being of employees
	Guest, 2017	532	Article proposes a new model of HRM emphasizing on well-being
	Danna & Griffin, 1999	440	A review paper based on health and well-being
Cluster 3 (green) Engagement, Burnout, and the Job Demands-Resources Theory	Demerouti et al., 2001	1623	A theoretical article presenting JD-R model
	Bakker & Demerouti, 2007	1460	This article provides a review of the JD-R model.
	Maslach et al., 2001	1127	Article defining three dimensions of job burnout dimensions
	Schaufeli et al., 2006	1066	Development of Utrecht Work Engagement Scale
	Schaufeli & Bakker, 2004	1081	Empirical article on engagement and burnout
Cluster 4 (yellow) Work Stress and employee well-being	R. Karasek & Theorell, 1990	808	Article that discusses JDC model
	R. A. Karasek, 1979	804	A theoretical paper proposing job strain model
	Lazarus & Folkman, 1984	641	A book that discusses theories and reviews literature on stress and coping
	Lee & Ashforth, 1996	507	A meta-analysis article on correlates of job burnout dimensions
	Aiken et al., 1991	495	A book about testing interactions in multiple regression.

4.4. Social structure of employee well-being research

This study examined the social collaboration aspect of this research field using the bibliometrix R package. The findings indicated a robust network of collaboration among prominent scholars in the field including Schaufeli, Bakker, and Boxall.

4.4.1. Author collaboration

The author collaboration network comprised 12 clusters. The research landscape of employee well-being is dominated by two author collaboration networks that exhibit maximum linkage to other authors. Wilmar B. Schaufeli and Arnold B. Bakker are the most prominent authors, with the former establishing nine connections and the latter maintaining six connections. Schaufeli's author collaboration network includes De witte, Hakanen, Shimazu, De jonge, Parker, Peeters, Taris, Van den, and Kawakami, while Bakker has collaborated with six authors, namely Sonnentag, Demerouti, Ilies, Meyers, Bosak, and Flood.

4.4.2. Institutional collaboration

The institutional collaboration network is dominated by two large institutional clusters. One cluster comprises universities based in the Netherlands, with nine linkages, while the other cluster includes universities based in Australia, with 11 linkages. The collaboration network of Australian universities extends to the United States. For instance, the University of Melbourne in Australia has established collaborative relationships with Monash University, Deakin University, Michigan State University, the University of Queensland, Curtin University, the Queensland University of Technology, the University of New South Wales, the University of Sydney, the University of Wisconsin, Macquarie University, and the

University of South Australia. Similarly, Utrecht University in the Netherlands has developed collaboration networks with Erasmus University, Tilburg University, North West University in South Africa, Katholieke Universiteit Leuven in Belgium, Dublin City University in Ireland, Maastricht University, the University of Amsterdam, Eindhoven University of Technology, and Radboud University. It is noteworthy that there exist other universities with minimal or no collaborative relationships, despite their active engagement in employee well-being research.

4.4.3. Country collaboration

The social network analysis identified collaborative patterns among the most prolific nations in this research domain. **Figure 8** illustrates the world collaboration map of countries that contributed to this field. The largest cluster comprised 13 countries, with the Netherlands as the central node. The second-largest cluster consisted of 11 countries, centered around the United States of America (USA), while the third-largest cluster included nine countries, with Australia as the central point. For example, the Netherlands has collaborative links with Germany, Finland, Spain, Sweden, South Africa, Belgium, Japan, Norway, Switzerland, Brazil, Saudi Arabia, and Greece. Similarly, the USA exhibits collaborative relationships with countries such as China, Canada, India, Italy, France, Korea, Singapore, Israel, Romania, and Iceland. Australia's collaboration network encompasses the United Kingdom, New Zealand, Ireland, Denmark, Poland, Turkey, Vietnam, and Indonesia.

4.4.4. Taking a geographic perspective on employee well-being

This research field is predominantly influenced by developed nations with eight of the top ten most highly cited authors originating from European countries and the remaining two from Oceania. This disparity between developed and developing countries in the scientific realm is reflected in the significantly lower number of publications from emerging economies with low citation counts. It is noteworthy that majority of publications on this subject come from the United States, the Netherlands, Australia, and the United Kingdom, suggesting a heightened interest in employee well-being research among governments and organizations in these countries.

The Netherlands has the most extensive network of collaborations among authors, institutions, and countries. Dutch scholars Schaufeli (9 links) and Bakker (6 links) exhibit maximum connections to other researchers, illustrating the country's central role in global academic networks. This prominence is further reinforced by the institutional collaboration network, comprising nine universities from the Netherlands. Utrecht University leads in published articles, followed by Erasmus University and Tilburg University. The Netherlands also serves as the central node in a network of 13 countries, underlining its pivotal position in fostering international research partnerships.

Adopting a critical collaboration lens, it is important to acknowledge the network of institutions and nations that has contributed to the research in this area. It is noteworthy that all the top ten authors are from developed nations, with a predominant European affiliation. Although the United States leads in research output, the Netherlands tops average citation rates. This prominence is attributable to three of the top ten most productive and highly referenced institutions being based in the Netherlands, highlighting the substantial influence and recognition of employee well-being research originating from the Netherlands.
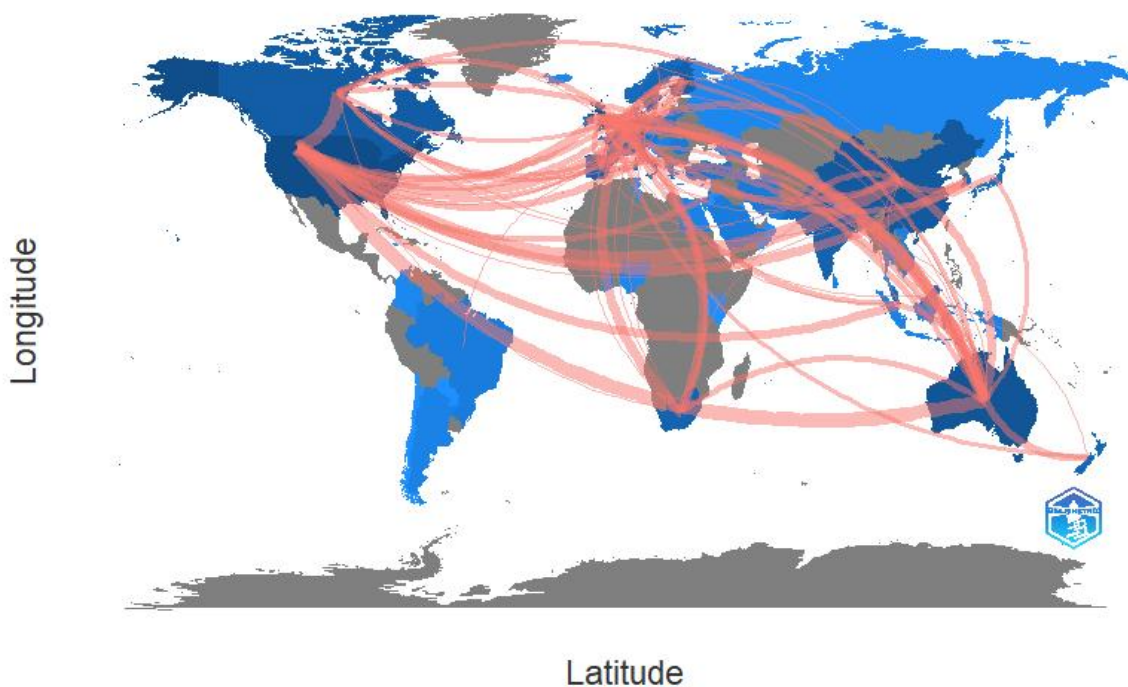
Figure 8. World collaboration map on employee well-being research.

5. Future research opportunities for employee well-being research

In response to the limitations of previous reviews, this study employed a content analysis methodology utilizing articles selected through co-citation analysis[75]. The study findings offer significant insights into the dominant voices and topics in the existing literature.The content analysis suggests three underrepresented perspectives and highlights three areas that need further research in this field.

5.1. Broadening the scope of employee well-being theories: Unveiling underrepresented subfields

Employee well-being theories are predominantly rooted in organizational psychology and occupational health, while other fields, such as motivation and personality, remain underrepresented. This study found that despite the prominence of self-determination theory (SDT)[76] and conservation of resources (COR) theory[67] in the field of psychology, they have not been thoroughly explored in the context of employee well-being. SDT emphasizes that humans have an inherent drive for growth and development while COR theory recognizes the role of resources in managing stress and promoting well-being. To enhance our understanding of employee well-being, we propose the inclusion of other models such as the strengths use model[77] and intraindividual models[78]. Additional research is necessary to understand how these theories may be applied in various contexts. Further investigation is required to explore how these theories interact with one another and how they may be integrated to create more comprehensive models of employee well-being.

5.2. Drivers & challenges to employee well-being

This study examines the drivers and challenges to enhance employee well-being through the lens of the job demand-resources model. The study findings identified that key drivers include job resources such as autonomy and control[79], social support[80], and job crafting[39]. Job resources including psychological and individual resources serve as a buffer against job demands[42]. Major challenges to improving well-being arise from job demands, including physical demands such as work pressure[41] and work-family conflict[81]

as well as psychological demands such as workload and emotional demands[82,83]. The research highlights the importance of integrating contextual factors[26] including institutional, legislative, organizational, and individual contexts, as a promising area for future investigation[84]. Additionally, future studies should explore other work contexts such as education and include variables such as culture to broaden the understanding of this subject across diverse settings[85].

5.3. Advancing employee well-being research: Multilevel analyses and longitudinal designs

Sonnentag[85] outlined the potential consequences of intra-individual variability in well-being such as task motivation and performance, proactive behavior, organizational citizenship behavior, and creative behavior. Similarly, key findings from this analysis highlight the importance of adopting a multi-level approach when examining the relationship between HRM, worker well-being, and performance[84]. Future research should employ longitudinal research designs[45,86,87] and use observations, other reports, and physiological measures to examine the relationship between well-being and other variables[88].

6. Conclusion

This study analyzed publication trends and identified the most productive countries, organizations, journals, and authors in the employee well-being field from 1990 to 2021. Bibliometric analysis explored the conceptual frameworks tracing the thematic evolution and examined the intellectual basis to understand the advancement of this discipline. Document co-citation analysis was used to identify the intellectual base while social structure mapped the social patterns underlying knowledge creation in this domain. The findings highlighted potential biases, particularly regarding underrepresented communities from geographic and sociographic perspectives which may contribute to theory building. The study outlines three important research avenues for academics: under-represented theories, unexplored contexts, and innovative research designs and methods. By identifying these gaps, this analysis paves the way for future investigations that may enhance our understanding of this topic.

This study serves as a valuable resource for researchers and practitioners seeking to advance knowledge in this important field. This study contributes to theoretical advancements in employee well-being research in at least five important ways. Firstly, it systematically organized the existing knowledge base in this field by recognizing major contributions from authors, organizations, and countries. Secondly, it highlighted the conceptual framework and development of this domain through co-occurrence analysis of authors' keywords. Thirdly, it presented the intellectual base by analyzing scholarly work from different perspectives. Fourthly, it explored social connections through co-authorship analysis. Finally, it identified and reported the latest research frontiers, representing the most recent developments in this area through content analysis. The findings of this study offer some practical implications for organizations in the post-COVID-19 era. The study found that remote work impacts psychological well-being of employees due to work loneliness and work-life balance issues. Organizations may consider these psychological factors when crafting work from home policies to protect workplace well-being. Based on the insights of the study, organizations may prioritize strategies that maintain workplace relationships and foster connection among remote workers. The study's findings emphasize the role of leadership and organizational factors such as stability and internal communication in promoting well-being of employees. Based on these insights, organizations may focus on development of supportive leadership practices and implementation of effective internal communication systems as these factors may contribute to a more positive work environment.

7. Limitations

Despite its methodological rigor, this study has some limitations. The selection of the Web of Science (WOS) database may have restricted the scope of this research. The researchers used WOS databases up to September 2021; however, future research could enhance their scope by including additional databases such as Scopus, PubMed, and PsycINFO. Another limitation stems from restrictions in the search process. By limiting the scope to journal articles and English language publications, the study may not have captured all relevant literature on this topic. Future research could benefit from including publications in other languages and diverse document types, such as book chapters, conference proceedings and editorials. Moreover, the search keywords used to query the database could be expanded to include more relevant and related terms. Despite these limitations, the study's findings provide researchers with valuable insights into the research landscape by identifying top articles, prominent authors, intellectual foundations, key topics, major theories, emerging themes, and future research directions in the domain of employee well-being research.

Conflict of Interest

The authors declare that there is no conflict of interest.

Ethics Approval

Not Applicable

Funding

Not Applicable

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