

From Burnout to Balance: A Bibliometric Review of Research on Work Schedules and Employee Well-Being

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Abstract. *In recent years, the field of burnout experienced by employees has attracted considerable attention in the academic literature, due to the increasing number of cases and the significant impact on their mental and physical health, caused by internal and external factors. The aim of this paper is to analyze the evolution of research on burnout between 1981-2024, identifying the most frequently cited sources in the field, collaborations between different countries, and the main authors who have contributed significantly to the literature. The paper also explores the scholarly productivity of the authors and identifies the most common words or groups of words to determine the central themes that researchers have addressed in their studies. Using bibliometric analysis, the study provides an overview of research trends in the field of burnout, highlighting international connections, influential authors and major themes that have guided the development of this area of study over the period under review.*

Keywords: Burnout, Bibliometrix, Balance, Well-Being, Thematic Map

Introduction

In a world that is in a continuous global dynamic, accelerated by numerous events, the labor market is becoming increasingly unstable and generating more and more challenges for employees, who are faced with significant imbalances between personal and professional life amid the need to adapt to remote work, retraining or total transition in a very short time. Events such as the COVID-19 pandemic, the Russian-Ukrainian and Middle Eastern armed conflicts have shaped a state of uncertainty and economic vulnerability, reflecting on people through communication problems and total exhaustion (International Monetary Fund, 2022), (Bobasu & De Santis, 2022), (Kaushik, M., Guleria, N., 2020).

When psychologist Christina Maslach studied burnout in 1982, it was found only in America, but over the years, it has become a worldwide phenomenon. The papers showed how

much the work environment influences the occurrence of burnout (Maslach, 2003). Together with other psychologists interested in this topic, such as Michael Leiter, a "checkup" program have been proposed to help organizations deal with burnout issue (Leiter & Maslach, 2000).

However, the problem of burnout has many psychological aspects and causes that are difficult to identify. Thus, many researchers have classified the factors that cause stress in an individual in a similar way: factors external to the organization, including issues in family life and factors closely related to the work performed within the organization, such as work schedules, job tasks, and organizational climate (Sonnentag & Frese, 2003), (Jain et al., 2013), (Lazarus, R. S., & Folkman, S., 1984).

Barling et al. (2004) studied different forms of work to show how job activities affect employees' physical and mental health. The researchers focused on the analysis and how to optimally schedule long working hours (Martens et al., 1999). Using a variety of methods, the researchers demonstrated that long working hours lead to increased fatigue, reduced motivation, and the development of health-threatening coping mechanisms such as smoking, drinking alcohol, and eating fast food. Like long working hours, shift work negatively affects health and is characterized by a disruption of the biological rhythm caused by working at night or early in the morning (Folkard & Hill, 2002). Diseases associated with this schedule include cardiovascular disease (Bøggild & Knutsson, 1999), digestive disorders, cancer (Davis et al., 2001) mental health, absence from family and social life, and many others (Costa, 1996). The authors concluded that an early understanding of the significant effects of the work program on individuals' physical and mental health is essential to reduce these problems significantly.

Several studies have shown that more than half of employees feel stressed and exhausted, physically and mentally, at work, which significantly affects their productivity (Fisher, 2018), (Qualtrics, 2020). For instance, according to the "American Psychological Association's 2021 Work and Wellbeing Survey", 60% of employees say they are stressed at work, and more than half say they are exhausted due to working conditions (American Psychological Association, 2021).

As employee burnout can significantly affect company productivity, there is such a high interest in the field (McKinsey Health Institute, 2022). The scope of the research is to highlight current studies and allow other researchers to study unexplored areas.

Therefore, the bibliometric analysis aims to analyze the current state of the literature on the main factors that determine employee burnout and its impact on organizational development. For this, bibliometric research will be conducted to answer the following questions:

RQ1: Who are the most published authors?

RQ2: What are the most relevant sources on this topic?

RQ3: Which are the most pertinent countries where this phenomenon has been studied?

RQ4: How are the articles categorized according to the keywords used?

This article is structured as follows: the second section is dedicated to the literature review in the field, the third section presents the methodology, and the fourth section presents the main results of the review. The article ends by highlighting some relevant conclusions.

Literature review

According to the literature, nowadays, there are two scientifically valid models of burnout: the job demands model (JD-R model) and the Maslach model (Butoi et al., 2025; Demerouti et al., 2001). The Maslach model describes burnout as having three dimensions: depersonalization, low personal accomplishment and emotional exhaustion, and these are valid for human service professions;

whereas the JD-R model identifies two dimensions of burnout: disengagement, related to reduced resources, and exhaustion, related to job demands. In both cases, burnout occurs because of job stress, and disengagement involves distancing from work because of negative attitudes towards it (Demerouti et al., 2001).

Over time, researchers have observed various stress-related risk factors in the workplace, as well as a correlation between stress and various problems such as musculoskeletal problems (Galanis et al., 2024). Using a meta-analysis based on a total of 7 primary health studies, it was observed that 21% of the participants in the study suffer or have suffered in the past from degenerative diseases of the lumbar spine and 37% from osteoarthritis of the hand. Thus, it was inferred that there is a 95% probability that the true prevalence of degenerative diseases of the lumbar spine is between 17% and 26%, and for osteoarthritis of the hand between 23% and 51% (Greggi et al., 2024).

Lee et al. (2025) observed that relational conflicts and high autonomy at work led to increased stress and decreased job satisfaction. The study also revealed a high rate of burnout among the employees who performs repetitive tasks. Butoi et al. (2025) examined the impact of personality factors and individual characteristics on burnout, increased stress and work addiction. Results showed that burnout was influenced by gender, personality traits and age, and work dependency by sociability and aggression.

Methodology

Taking into consideration the scope of the research to identify the work schedules, reasons for burnout and employee well-being, a bibliometric approach will be developed. Figure 1 presents the main extraction steps from Clarivate Analytics' Web of Science database, also known as WoS (WoS, 2024), using the following terms: "employe*_mental_health", "burnout", "work-life balance", "personal well-being", "psychological well-being", "employe*_happiness", "work-life_integration" and a variety of other keywords that have been used in order to filter the titles in the first step, resulting a total of 33427 papers that were extracted. The symbol "*" has been used for searching various forms of a word (singular, plural, other variations), while "_" is used for searching the group of words rather than individual words (Delcea et al., 2024; Massimo & Corrado, 2017).

On the second step, titles were filtered based on "work_schedule", "flexible_work_hour", "reduced_workweek", "job*_performance", "telecommuting" and several other terms that are defining the working schedule, obtaining a total of 95171 documents.

In the third step, a combination of the first and second steps was performed to keep only articles with both types of terms in the titles, resulting in a total of 603 papers.

For the fourth stage, the language filter was applied, taking into account only papers published in English, reducing the number of documents from 603 to 590.

The fifth and sixth step restricted the type of the document, by accepting only documents that were marked as "Article" in the WoS (2024), since the scope was to include only new and unique papers. The conference articles and other types of papers can be assimilated in the "Article" category. In total, 387 articles have been kept into analysis and the last restriction was to remove the papers published in 2025, which resulted in a total of 385 papers that will be further investigated from a bibliometric point of view. The 2025 year have been removed because it can affect the metrics related to the citations rate, as Moreno-Guerrero (2020) found.

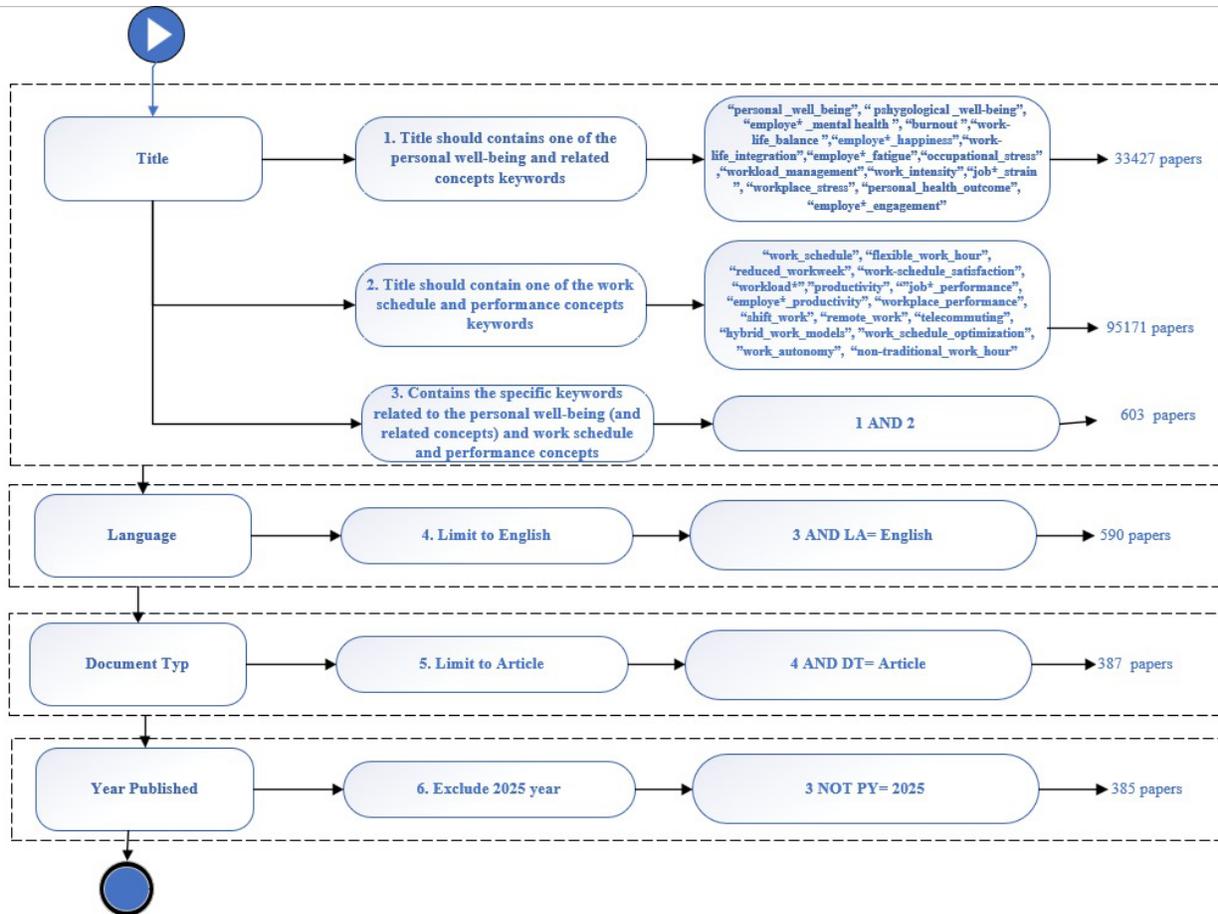


Figure 1. Extraction Steps of the articles from ISI Web of Science database

Source: Authors' own research.

Once selected and applied the most appropriate filters for the desired research, a total of 385 publications were analyzed. Based on this information, a bibliometric analysis was conducted, including relevant graphs that provide an overview of current studies on burnout caused by various factors that increasingly affect employees. Figure 2 displays the most relevant sources that contributed to the investigated topics. This information aids other researchers in identifying the approaches used so far, discovering proposed solutions, and addressing different problems or significantly improving current resolutions. Researchers can also use the analysis to determine which highly ranked journals are best suited for publishing their articles. It is noted that “Frontiers in Psychology” serves as the primary source, playing a key role in the examined field and for the academic community, with a total of 10 papers. Meanwhile, “Behavioral Sciences” (3 papers) and “BMJ Open” (3 papers) being the sources with the lowest impact on the area under analysis. Observing the chart, it becomes clear that many sources are represented, suggesting that the literature is dispersed across numerous journals.

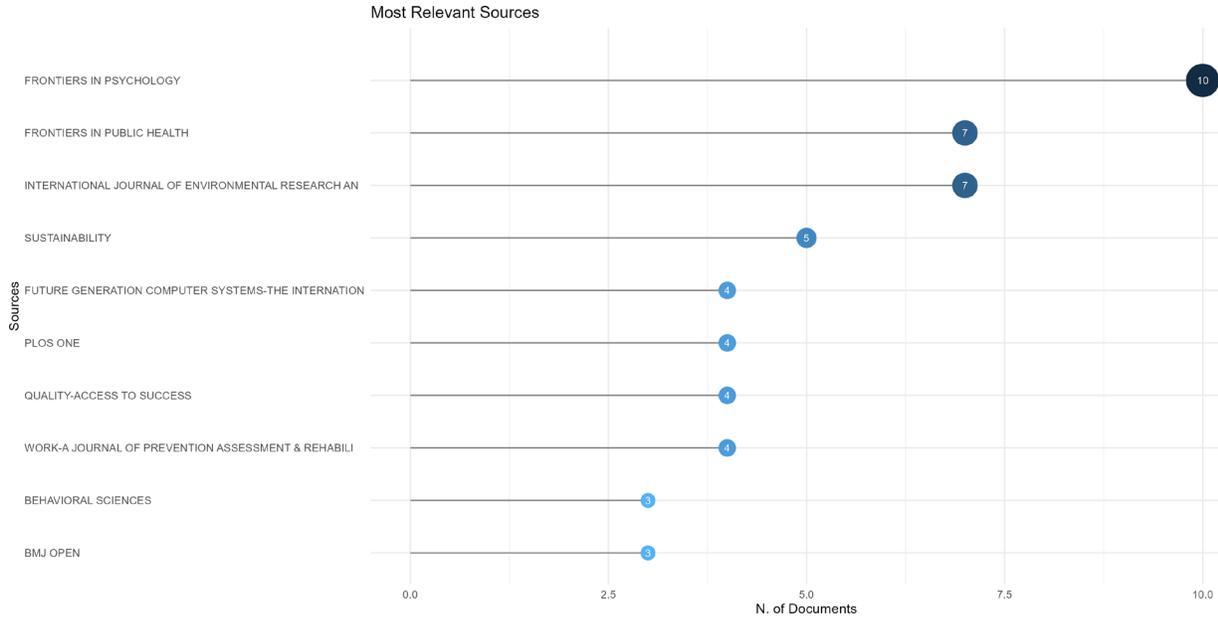


Figure 2. Most relevant 10 sources

Source: Authors' own research.

Figure 3 details the most important countries, from academical perspective, in the area of work schedule and employee's well-being, investigating the total number of Single-Country Publications (SCP) and Multiple-Country Publications (MCP), together with the importance of each type of publications and the country implication compared with other nations. Analyzing publications on burnout, there is a clear predominance of SCP studies, which indicates a bias towards national research. For example, the USA accounts for almost a quarter of all publications, with the majority of papers being SCP, suggesting a strong focus on domestic research. Although many countries, such as Iran, India and Canada, have a significant proportion of SCP publications with a focus on national studies, there are also examples of countries taking a more collaborative approach, such as China, which has a significant proportion of MCP, indicating an interest in international research. The general trend is for SCP studies to dominate, but there is an increase in international collaborations, particularly in countries with greater research resources, suggesting a growing openness to understand the burnout phenomenon in a global context.

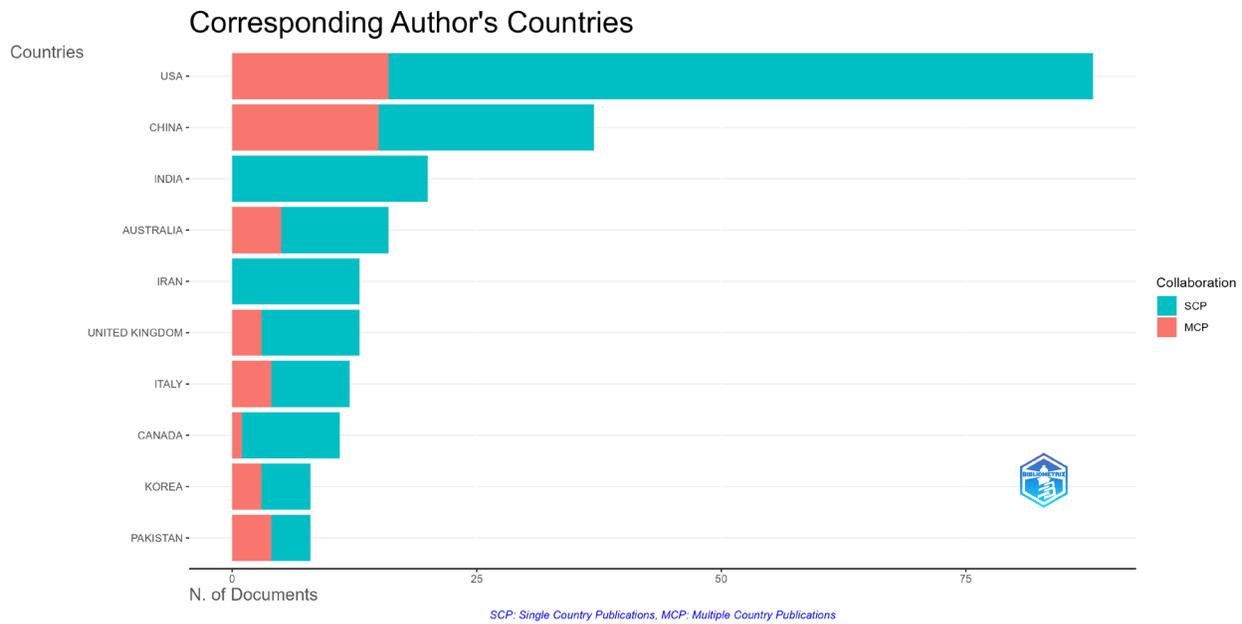


Figure 3. Top 10 Most important 10 corresponding authors' countries

Source: Authors' own research.

Figure 4 explores the Lotka's Law, which is crucial for a bibliometric analysis, since is providing details about the productivity of the authors and the combined behavior of the researchers (Newby et al., 2003). Using the specific function of this law in R, the beta coefficient used for the calculation is an estimated one, and using a statistical test (Kolmogorov-Smirnoff test), the similarity between this distribution (full line) and the theoretical one (dotted line) will be tested (Aria & Cuccurullo, 2017).

Lotka's Law shows a negative correlation between the percentage of researchers and the number of papers published: when the number of documents increases, the percentage of researchers decreases. There are 1327 authors with 1 paper published, which represents 94.4% of total researchers. If the number of articles published increases by 1, the number of authors decreases exponentially to 66, which represents 4.7% of total authors. There are only 7 researchers that published 3 articles, and 6 that published 4 papers, which represents approximately 0.5% and 0.4% respectively.

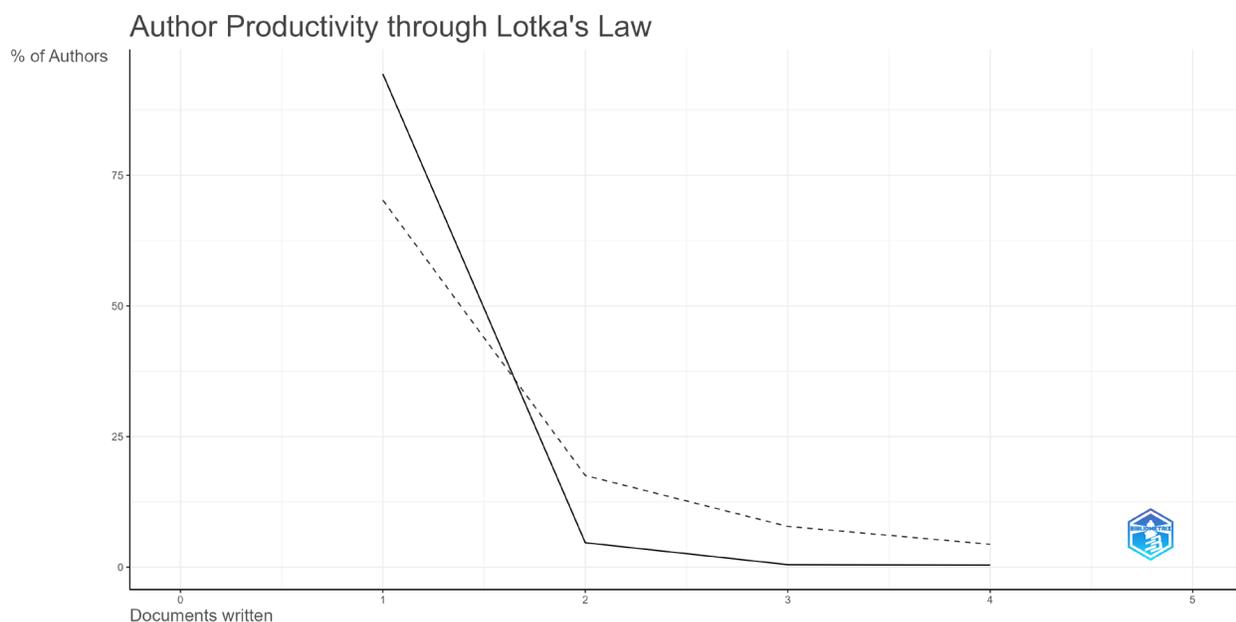


Figure 4 Lotka’s Law for author’s productivity

Source: Authors’ own research.

In Table 1, an overview of the dataset used in this analysis is presented. For the analyzed period between 1981 and 2024, a total of 282 sources dealing with the topic of burnout in academic research were identified, the total number of papers published on this topic being 385. According to the "average years from publication" which is 6.13, on average, research in the field is cited approximately 6 years after publication, the "average citations per documents" of 26.93 suggests that papers on burnout are frequently cited, with an average of almost 27 citations per document. The high number of 714 "keywords plus" and 1025 "author's keywords" indicates that the topic of burnout is associated with multiple topics and factors, and the high number of 15700 references proves that burnout studies are based on vast previous literature.

Table 1. Main information about the data

Indicator	Value
Timespan	1981-2024
Sources	282
Documents	385
Average years from publication	6.13
Average citations per documents	26.93
Keywords plus	714
Author’s keywords	1025
References	15700

Source: Authors’ own research.

Table 2 illustrates the most frequently used groups of words in the title, together with those in the abstract and the number of occurrences of these groups in the articles analyzed. Analyzing the left side of the Table 3, it can be observed that the word with the highest frequency is a “workload management system”, with 6 occurrences, followed by “employee job performance”, “health care workers”, and “stress job satisfaction”, with 5 occurrences each one. The phrases with the fewest occurrences, 2, are “affective organizational commitment” and “autonomic workload

management”. The right part of the table is dedicated to the most frequently used abstract trigrams. Thus, the trigram with the most occurrences is “Maslach burnout inventory”, with a total of 26, followed by “employee job performance” and “structural equation modeling”, with 20 appearances. In the analyzed articles, the least used trigrams were “emotional exhaustion depersonalization” and “multiple regression analysis”, with only 9 appearances. Trigrams give an idea of the most critical issues addressed in the papers selected for the database.

One of the most interesting groups of words identified is the "Maslach Burnout Inventory" or MBI. Since MBI is known as an indicator which measures burnout, it was expected to be on the top of the list. The MBI was published 25 years ago, and it is still used in the academical research. The surveys it involves three scales: emotional exhaustion, personal fulfillment and depersonalization (Maslach et al., 1996).

Table 2. Top 10 most used trigrams

Trigrams Titles	Frequency	Trigrams Abstracts	Frequency
Workload management system	6	Maslach burnout inventory	26
Employee job performance	5	Employee job performance	20
Health care workers	5	Structural equation modeling	20
Stress job satisfaction	5	Occupational stress job	11
Aware workload management	4	Health care workers	10
Occupational stress job	4	Perceived organizational support	10
Perceived organizational support	4	Server speed setting	10
Moderated mediation model	3	Work-life balance wlb	10
Affective organizational commitment	2	Emotional exhaustion	9
Autonomic workload management	2	depersonalization	
		Multiple regression analysis	9

Source: Authors’ own research.

Figure 5 focuses on the 200 most used keywords being generated in order to observe the volume of work on a given topic (centrality) as well as the importance of each (density) (Nasir et al., 2020). There are a total of four clusters formed, these taking the name of the word with the highest number of occurrences. Thus, the cluster with the largest size is in the quadrant labeled "Motor Themes" being green in color and representing well developed themes. This cluster consists of a total of 20 words, the one with the most occurrences being "satisfaction" (59 occurrences), followed by "impact" (55 occurrences), "resources" (27 occurrences), "job- satisfaction" (26 occurrences), "work" (24 occurrences), etc. The terms found in this group can be categorized as related to performance, professional relationships and work-life balance. The second cluster, by size, is the one in the "Basic Themes" quadrant, representing themes in a continuous process of development and being blue in color. The total number of words in this cluster is 12, the most common being "stress" (51 occurrences), followed by "health" (45 occurrences), "performance" (32 occurrences), "nurses" (22 occurrences) or "care" (19 occurrences). These words represent different key concepts in the field of health, stress, performance and well-being at work. The third cluster, observed in the "Emerging or Declining Themes" quadrant, consists of 6 words: “mediating role” (19 occurrences), “commitment” (14 occurrences), “organizational commitment” (14 occurrences), “antecedents” (13 occurrences), “moderating role” (11 occurrences) and "work engagement" (11 appearances). The last cluster and the smallest in terms of size, consists of only 3 words: "risk" (11 occurrences), "association" (10 occurrences), "prevalence" (10 occurrences), being positioned in the "Niche Themes" quadrant. The three terms are highly representative of important concepts in health, behavioral and statistical research.

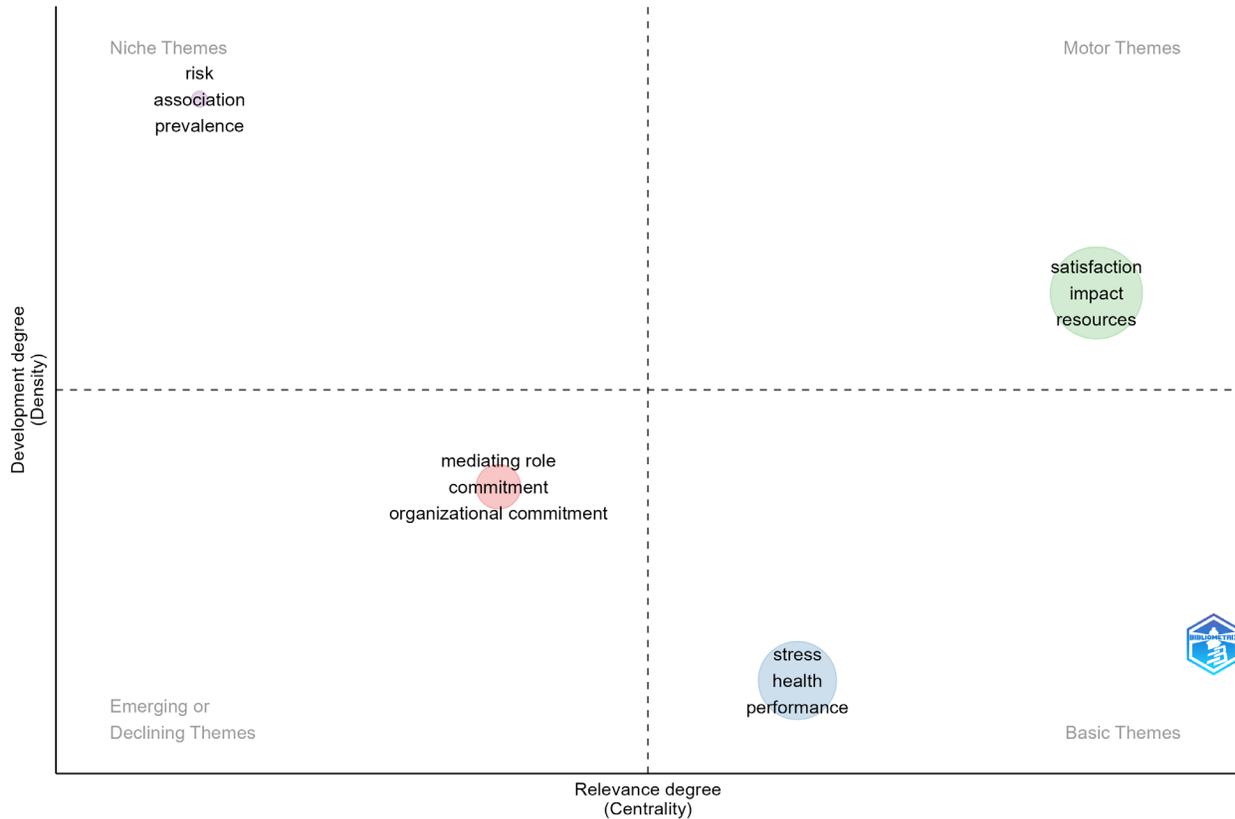


Figure 5 Thematic Map

Source: Authors' own research.

The co-occurrence network of key words in Figure 6 suggests that the literature on burnout experienced by an increasing number of employees and caused by various factors can be divided into four streams.

The first stream comprises numerous words related to factors and processes related to performance and work. For example, terms such as "work", "outcomes", "mediating role", "predictors", "behavior", "burnout", "family conflict", "organizational commitment", "antecedents", "support", etc. The general concern of these terms is related to psychosocial and organizational factors that influence workplace behaviors, commitment and performance. Secondly, there are psychology or health-specific terms that influence job performance: "satisfaction", "impact", "stress", "mental-health", "validity", "emotional exhaustion", etc. The third stream is made up of terms representative of health, care and the different medical professions: "health", "nurses", "care", "quality", "physicians", "social support" and "fatigue". The last stream, which is also the smallest in terms of component, includes epidemiologic factors and risks: "risk", "association", "prevalence" and "depression".

By observing so many representative words for different themes, it can be deduced that the field of research is a complex one in which the concepts of work, performance, health, stress and support are interlinked.

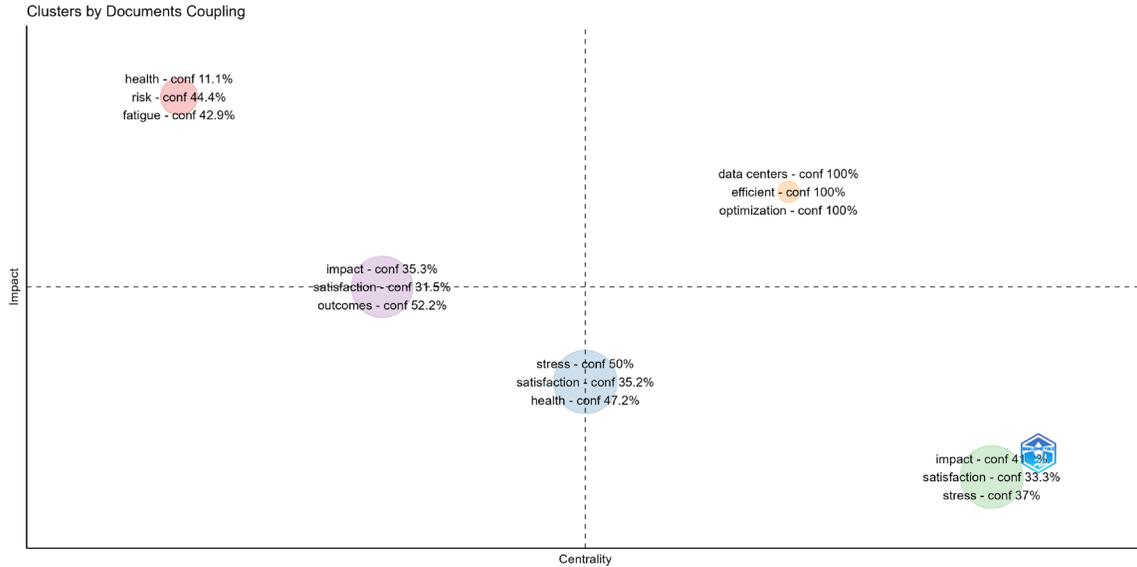


Figure 7 Clusters of the documents

Source: Authors' own research.

Figure 8 presents the most relevant authors based on the total number of publications, in the area of work schedule and employee well-being. In first place there are 6 researchers, with the same number of papers published: “Harma M.”, “Karhula K.”, “Kivimaki M.”, “Puttonen S.”, “Sallinen M.”, and “Vahtera J.”, each one having 4 documents. The last 4 authors published 3 articles each: “Alam GM.”, “Bashir K.”, “Down DG.” and “Lei M”.

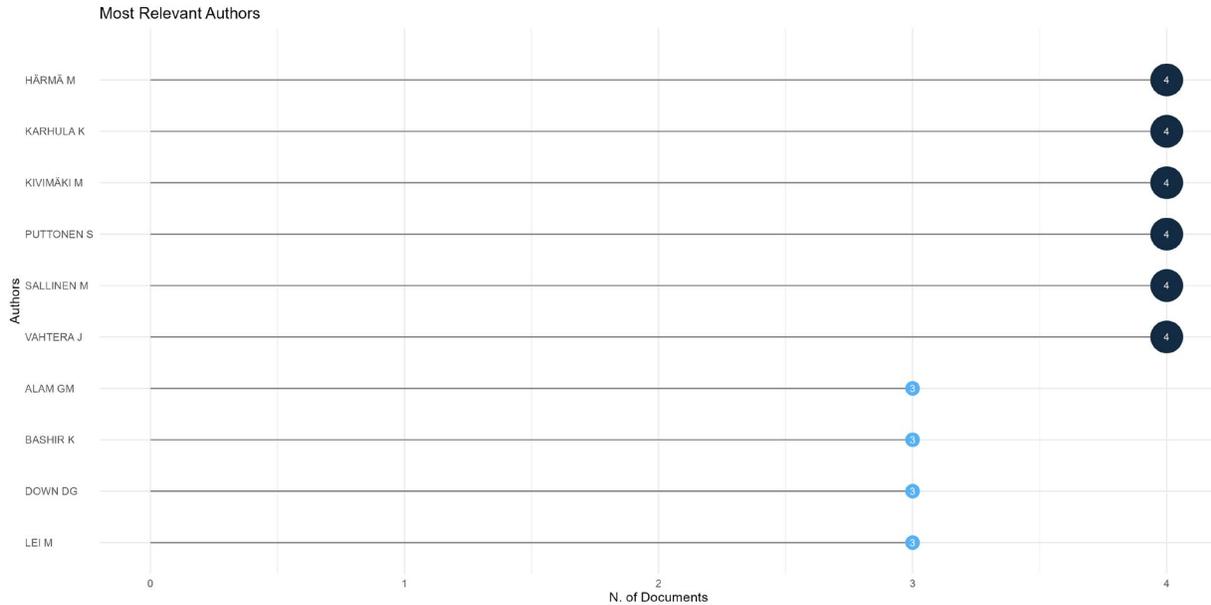


Figure 8 Top 10 authors by scientific production

Source: Authors' own research.

Results and discussions

Based on a bibliometric analysis, the paper set out to identify the evolution over time of papers, for the period between 1981-2024, that have addressed topics related to burnout experienced by an increasing number of employees, caused by various internal or external factors. As benchmarks, the paper investigated which were the most common sources when it comes to the field under study, what were the existing collaborations between different countries, who were the most important authors and what was their scientific productivity, as well as clustering the most common words or groups of words in order to see which were the central themes on which the authors focused their analysis.

Analyzing the most important authors in terms of scientific results, it was observed that “Harma M.”, “Karhula K.”, “Kivimaki M.”, “Puttonen S.”, “Sallinen M.” and “Vahtera J.” collaborated to analyze in their papers the relationship between occupational stress and stress biomarkers; the relationship between sleepiness, recovery and exertion at work; and the relationship between stress experienced at work and heart rate variability (Karhula et al., 2013a, 2013b, 2014, 2016).

Scientific productivity at country level was most common in the USA, with a total frequency of 239 papers, followed by China with a fairly high frequency, but about half of the previous one of 113. Australia, Canada, India and Iran had frequencies between 42 and 46 and Italy and the UK between 33 and 35. Given the large number of publications, it was to be expected that the US would have the highest number of collaborations (88 papers), followed by China (37 papers) and then India (20 papers).

It must be assumed and recognized that during the analysis there were some limitations related to the extraction of the database. Even if WoS is one of the most used databases in academical research, the extraction of articles indexed only in WoS can be perceived as a limitation. Comparing the total number of journals and articles in WoS with another database, e.g. Scopus, even if the number of journals and articles is lower, it cannot be guaranteed that adding other sources will improve the quality of the data (Singh et al., 2021). The same is also true for the language limitation, keeping those papers written in English, considered to be relevant for the analysis.

Conclusion

The investigation provided an overview on employee well-being and work schedules, by analyzing 385 documents, extracted from ISI WoS database, presenting the most representative affiliations, keywords, authors and countries based on papers published, and the number of citations. In order to establish the outcome, the answers to the scientific questions are further discussed:

- The most relevant authors based on the number of publications are: “Harma M.”, “Kahula K.”, “Kivimaki M.”, “Puttonen M.”, and “Sallinen M.” with 4 papers each one;
- Taking into consideration the number of articles for each journal, the most representative are “Frontiers in Psychology”, “Frontiers in Public Health”, “International Journal of Environmental Research”, “Sustainability” and “Future Generation Computer Systems-The International Journal of Escience”;
- The most important countries that published articles in the area of work schedules and employee well-being are USA, China, India, Australia and Iran;

- The most used trigrams in abstracts and titles are "Maslach burnout inventory", "employee job performance", "structural equation modeling", "workload management system" and "employee job performance";

The subjects that have been investigated in the article include a variety of documents related to work schedules and the employee well-being area. The topics have grown in interest in last years, becoming more and more important for the employees and companies. Future investigation can explore furthermore into the work schedules topic, trying to identify the optimum job activities and schedule, in order to optimize the productivity and to reduce the stress for employees, including also a higher variety of databases, such as Scopus or Google Scholar.

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