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DATA ANALYSIS

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Mapping the Research Landscape of Organizational Climate and Performance Using Bibliometric Analysis

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This study aims to address the limited understanding of organizational climate and performance by conducting a comprehensive bibliometric analysis of scholarly publications. The methodology involves analyzing publications using bibliometric techniques and VOSviewer. The results indicate that organizational performance, employee engagement, job satisfaction, leadership, and leadership culture are prominent topics within the field. The top five countries in terms of published documents and citations are the USA, India, the UK, Australia, and Malaysia. Recent publications have prioritized topics such as quality of work life, innovation, productivity, well-being, organizational commitment, work engagement, and corporate social responsibility. This study provides valuable insights for researchers, practitioners, and organizations to improve employee performance and productivity. The significance of this work lies in its ability to inform future research directions and guide collaboration efforts. Ultimately, this study advances the understanding of organizational climate and performance with practical implications for various organizational settings.

Keywords: organizational climate, performance, bibliometric, Scopus database, VOSviewer.

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1. BACKGROUND

In recent times, organizational management has come to acknowledge that human resources play a vital role in achieving a long-lasting competitive edge and effectiveness. The workforce is no longer perceived as a costly liability but, instead, is recognized as a valuable asset that generates productivity [1]. While it is recognized that cultivating a favorable work environment is an objective of most organizations to foster the growth of their employees, a considerable number of organizations tend to overlook the significance of the organizational climate. This is even though human resources are integral to the advancement and success of the organization [2]–[4].

In the field of organizational behavior, the concept of organizational climate has garnered substantial attention and discourse since the 1960s [5]. The importance of this component cannot be overstated, as it has a profound influence on the views of employees regarding their interpersonal connections, feelings of inclusion, and overall work productivity [6]. Nasution et al. ([7] reported that the organizational climate exerts a substantial influence on the human resources practices and policies implemented by members of the organization. The organizational climate can exert a considerable impact on members' conduct, motivation, and commitment to the organization. A cooperative and affable organizational climate between members can alleviate negative circumstances, including emotional dissonance. Notably, internal organizational efforts to alleviate work stress can foster a positive organizational climate [8]. Although the development of human capital, lifelong learning, and continuous focus on skill development has become more common recently, many issues are still simply treated on the surface rather than addressing their root causes. Human desires are significant, particularly in terms of motivation and fulfillment, and a focus on workplace situations and values has been essential because giving employees the right mindset is crucial for the economic development of companies, regardless of how technology enhances our quality of life, a company's ability to function effectively relies heavily on the engagement of its human resources. The support that a company provides for employee well-being in exchange for performance improvement is the organizational climate. The study of organizational climate and its impact on various aspects of organizational performance has garnered significant attention in research literature. Understanding the complex interplay between organizational climate, work environment, employee satisfaction, and employee engagement is crucial for organizations striving to enhance their overall performance and

productivity. Additionally, investigating the relationship between organizational climate and performance outcomes, such as employee productivity and organizational behavior, provides valuable insights for effective management strategies.

Bibliometric analysis has emerged as a powerful quantitative method for evaluating scholarly communication, identifying research trends, and gaining insights into the scientific landscape. Researchers have used this tool in many fields such as business, health, space technology, computer science, and many other fields [9]–[13] to gain valuable insights into article characteristics, including keywords, institutions, journals, countries, and authors, which are often challenging to ascertain through traditional methods.

In the context of mapping the landscape of organizational climate and performance research, conducting a bibliometric analysis necessitates the utilization of a reliable and comprehensive database. This study leverages the renowned Scopus database, which has established itself as a trusted resource for researchers, institutions, and libraries worldwide [14], [15]. The selection of Scopus as the database for this study stems from its distinct advantages over other specialized databases as it provides an extensive collection of scholarly articles along with a user-friendly interface that includes robust features that streamline the research process.

In the present study, a bibliometric analysis is conducted to offer a comprehensive overview of the existing research on organizational climate and performance. The analysis aims to identify significant patterns, emerging trends, influential authors, and noteworthy journals in this field. By mapping the literature landscape, this study contributes to advancing the understanding of the current state of knowledge on organizational climate and performance. Furthermore, it seeks to contribute to the understanding of the current state of knowledge and identify potential avenues for future research and theoretical advancements in organizational climate and performance research.

The rest of the article is structured as follows: Section 2 provides a comprehensive review of the literature related to organizational climate and its impact on employee performance. In Section 3, the methodology and data collection process used in this study are presented. Section 4 presents the results of the bibliometric analysis, along with a detailed discussion of the findings. Finally, in Section 5, the conclusions of the study are summarized, and recommendations for future research are provided.

2. LITERATURE REVIEW

Understanding the relationship between organizational climate and performance is a topic of significant interest in the research community. Numerous studies have investigated various aspects of organizational climate and how they may affect organizational outcomes. These studies have highlighted the significance of important elements such as work environment, employee satisfaction, behavioral ethics, engagement, and productivity [2], [6], [16], [17].

Meta-analytical research by Kish-Gephart et al. [18] has played a pivotal role in consolidating findings from numerous studies in the field of behavioral ethics. Their comprehensive analysis of 136 studies highlighted key drivers of unethical decisions, including

individual characteristics (“bad apples”), moral issues (“bad cases”), and the organizational environment (“bad barrels”). This meta-analysis underscored the need for a holistic understanding of unethical decision-making within organizations and called for further exploration of complex relationships.

Building upon the findings of Kish-Gephart et al. [18], recent studies went deeper into specific aspects of unethical behavior within organizational settings. For instance, Cialdini et al. [19] conducted experiments and surveys to investigate the impact of unethical leader behavior on group dynamics and member behavior. Their findings indicated that exposure to unethical leader behavior increased the likelihood of group members choosing to leave the group, while those who remained were more prone to engaging in unethical conduct. In the same context

Hassan ate al. (2019) [20], [21] called for further research to build upon these findings and provide additional evidence for enhancing ethical practices in organizations. In a recent comprehensive literature review conducted by Bohórquez et al. [22] on organizational climate and its importance to organizational success, the authors identified nine dimensions for measuring organizational climate: interpersonal relationships, motivation, leadership, autonomy, support, physical conditions, conformity to work, commitment, and innovation. These dimensions provide a comprehensive framework for understanding the impact of organizational climate on success. Understanding and effectively managing these dimensions is essential for organizations seeking to optimize their performance and achieve success. Other studies investigated the effect of leadership, leadership style, communication, work environment, organizational culture, work stress, work-family conflict, employee involvement, etc. [23]–[25].

While previous studies have provided valuable insights into the field of organizational climate and performance, it is equally important to examine the research landscape through a bibliometric lens. A simple search on “organizational climate” in the Scopus database can retrieve thousands of documents, making it impractical to analyze them through traditional means. Through bibliometric analysis, researchers can map the research landscape, identify significant trends, and recognize influential authors and publications, offering a comprehensive understanding of the field’s progress and direction. One such study, “A Bibliometric Analyses on Ethical Climate” by [26], focused specifically on the prevalence of ethical climate research. The study sought to examine previous works on this topic, utilizing the bibliometric analysis method and the Web of Science database to survey publications between 1970 and 2020. Using the VOSviewer, the authors explored several key aspects of these publications, including author keywords, bibliographic associations of publications, journals, countries, and authors. The analysis revealed that the majority of studies related to ethical climate centered around themes such as moral leadership, moral distress, organizational climate, and employee burnout.

In the same context, the study conducted by [17] on the role of organizational climate in improving job satisfaction aimed to shed light on the significant developments in organizational climate over the years. To achieve this objective, the study employed bibliometric analysis and visualized bibliographic data using the VOSviewer program. The analysis

included the co-occurrence of keywords and was based on documents obtained from the Scopus database, spanning the years from 1969 to 2022. By providing insightful information to writers seeking to explore the topic of organizational climate, particularly in the field of human resource development, this study plays a vital role in advancing the field. The results of the study were promising, as they furnished a comprehensive bibliometric analysis and identified key publication trends in Scopus, which could help to improve research quality in this field.

The studies mentioned above were centered around gauging the advancement of scientific publishing concerning the ethical climate, examining the correlation between organizational climate and job satisfaction, and investigating the influence of leadership in activating the organizational climate. Unlike previous studies that often focused on examining one aspect of organizational performance or climate, our present study takes a more comprehensive approach by incorporating multiple dimensions and factors.

Using a query that includes keywords related to organizational climate, work environment, employee satisfaction, employee engagement, organizational performance, employee productivity, organizational behavior, and performance. We aim to capture a broader range of research that explores the interconnection between these different aspects. This multi-dimensional perspective allows for a more holistic understanding of the complex relationships and dynamics within organizations, shedding light on the various factors that influence performance outcomes.

3. METHODOLOGY

The research methodology utilized in this study combines both quantitative and qualitative approaches, incorporating bibliometric analysis and the visualization of similarities method [27]. These techniques are employed to effectively analyze and map the research landscape surrounding the organizational climate and performance research. The data used for analysis was extracted from the Scopus database, a widely recognized and comprehensive source of peer-reviewed scientific and academic material [14], [15].

Conducting a comprehensive bibliometric analysis involves several crucial steps as shown in Fig. 1. Firstly, clearly define the research question or objective that you want to address. This step helps guide the subsequent stages of the analysis. Secondly, determine a suitable database that encompasses a wide range of peer-reviewed scientific and academic materials. Then, step 3, begins by identifying relevant keywords related to the research topic, and collect the articles that match your research question from the selected databases. The selected keywords are used to construct query strings for searching the database's search field and retrieving publications that closely match the research topic. Step 4 involves cleaning the collected data to eliminate any duplicates, incomplete information, or irrelevant documents. The PRISMA model (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) [28] is commonly employed to guide the identification, screening, and selection of eligible publications for analysis. In step 5, the collected data undergo analysis using various bibliometric techniques to extract meaningful insights from the collected

dataset. This may involve analyzing publication trends, authorship patterns, citation networks, or co-occurrence of keywords to understand the research landscape. Finally, in step 6, the extracted data, typically in the form of a CSV file, are imported into specialized software tools like VOSviewer for mapping and visualization purposes. This step aids in identifying patterns and trends within different research fields. VOSviewer can generate maps, cluster analyses, and network visualizations based on co-occurrence or citation data, providing a graphical representation of the research landscape.

The nearest matching publication was conducted using the query: (TITLE-ABS-KEY (“organizational climate”) OR TITLE-ABS-KEY (“work environment”) OR TITLE-ABS-KEY (“employee satisfaction” OR TITLE-ABS-KEY (“employee engagement”)) AND (TITLE-ABS-KEY (“organizational performance”) OR TITLE-ABS-KEY (“employee productivity”) OR TITLE-ABS-KEY (“organizational behavior”)) AND (TITLE-ABS-KEY (“performance”) OR TITLE-ABS-KEY (“performance outcomes”) OR TITLE-ABS-KEY (“performance measurement”)) . AND (LIMIT-TO (LANGUAGE , “English”)) AND (LIMIT-TO (DOCTYPE , “ar”) OR LIMIT-TO (DOCTYPE , “cp”) OR LIMIT-TO (DOCTYPE , “re”) OR LIMIT-TO (DOCTYPE , “ch”)). This is a Boolean search query that combines multiple search terms and operators to retrieve relevant research articles which includes i) a set of terms focusing on aspects related to employee satisfaction, organizational climate, work environment, and employee engagement, ii) a set of terms pertains to organizational performance, employee productivity, and organizational behavior, and iii) a set of terms relates to performance, performance outcomes, and performance measurement. By combining these sets of terms with the Boolean operators “OR” and “AND” the query aims to find research articles that explore the relationships between these different concepts. The Visualization is conducted by VOSviewer software 1.6.19 [29].

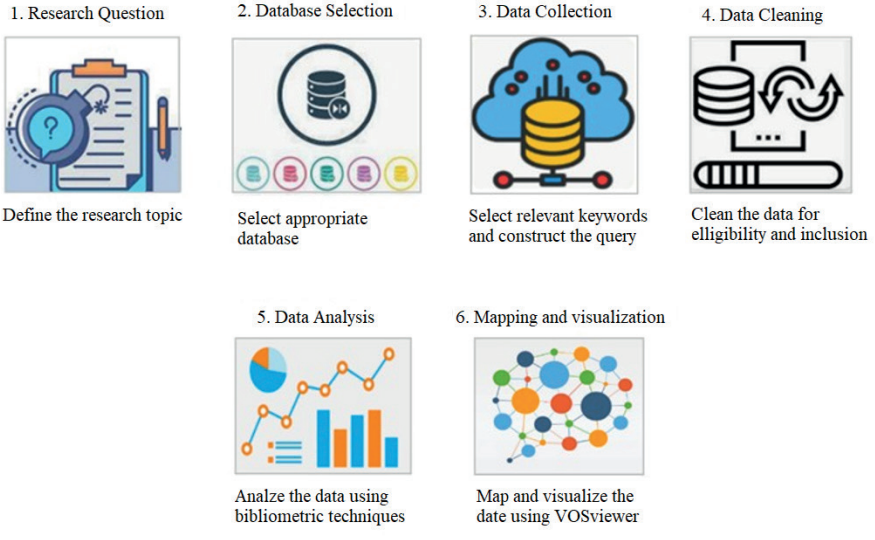

Fig. 1. Main stages of the bibliometric analysis

4. RESULTS AND DISCUSSION

The query discussed in the methodology section and employed in this study aims to capture articles that discuss the diverse dimensions of organizational climate, work environment, employee satisfaction, employee engagement, organizational performance, employee productivity, organizational behavior, and performance measurement. The query retrieves articles that mention any of the specified keywords within the title, abstract, or keywords.

Performed on May 30th, 2023, the query was limited to English documents and document types: articles (604), conference paper (73), review (33) and book chapter (21) for a total of 731 documents retrieved from 1973 to 2022. The first study of its kind to explore the impact of expectations on task performance within the context of organizational climate was conducted in 1973 titled "The effects of expectations upon task performance as moderated by levels of self-esteem" [30]. The findings revealed that only individuals with high self-esteem showed significant differences in their response to the manipulation of expectations. Notably, this paper received only one citation, indicating limited recognition at the time. Since then, the number of documents and the number of citations increased from one document and one citation in 1973 to 79 documents and 2837 citations in 2022 indicating a growing interest and recognition in the field.

For simplicity, Fig. 2 presents the distribution of published documents and their corresponding citations from the year 2000 to 2022. This representation highlights the continued interest and relevance of organizational climate research over the years and the growing recognition of its impact on various aspects of organizational performance and employee outcomes.

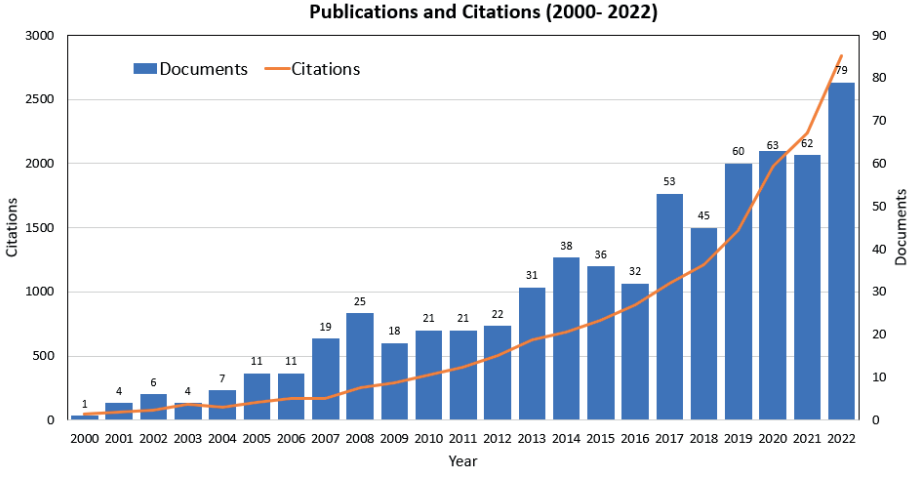

Fig. 2. Distribution of published documents and citations from the year 2000 to 2022

At this stage and before using VOSviewer, it is important to ensure the accuracy and reliability of our data analysis by undergoing a thorough process of data cleaning and

elimination of irrelevant or duplicated documents. The process is based on the guidelines provided by the PRISMA model (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) [28].

Figure 3 depicts the PRISMA flow diagram, which outlines the systematic process of identifying, screening, and selecting publications for our analysis. The initial search yielded a total of 751 publications, encompassing various sources such as articles, conference papers, reviews, book chapters, and books. From this initial pool, we excluded 20 documents classified as editorials, letters, or notes, resulting in 731 remaining publications. Next, we conducted a careful examination of these 731 documents, eliminating 12 duplicates and records with missing authors or titles. We also excluded 9 documents due to lack of relevance. This cleaning process led us to a final set of 710 eligible documents that were included in the subsequent bibliometric analysis.

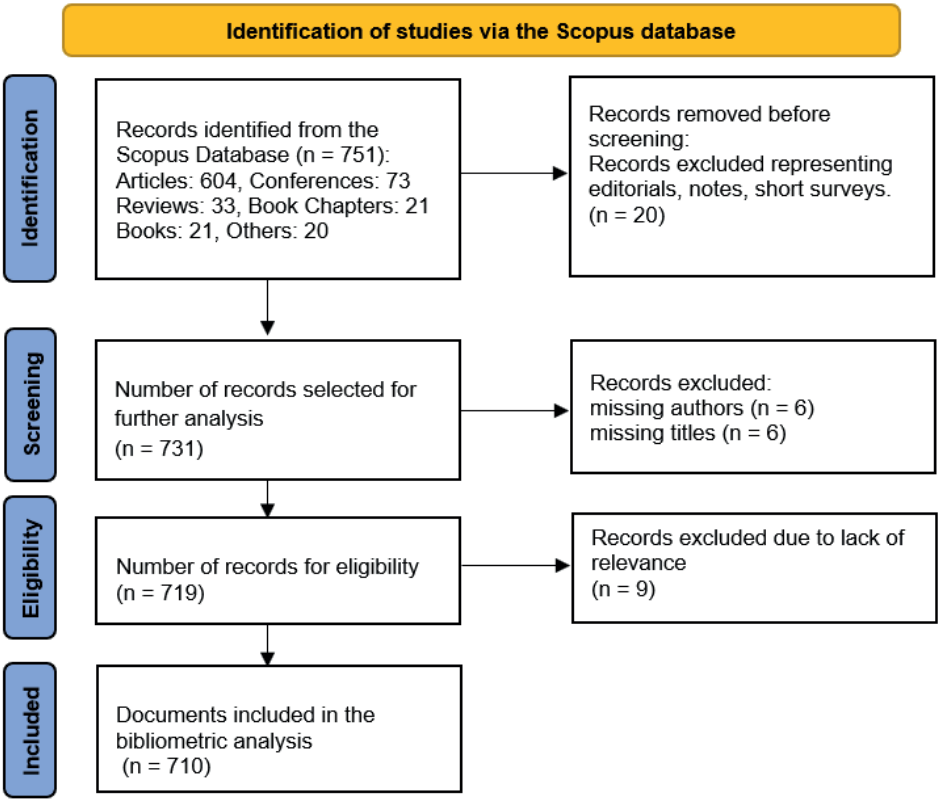

Fig. 3. PRISMA flow diagram screening process for eligibility and inclusion

Figure 4 illustrates the distribution of subject areas covered in the published documents. The analysis reveals that most of the documents, accounting for nearly 50 %, fall within

the domains of business and management as well as social sciences. Following behind are subject areas such as engineering, medicine, decision sciences, and economics, though with relatively lower percentages. This indicates that the research focus in the field of organizational climate and performance is primarily centered around business and management, with significant contributions from social sciences and other related disciplines.

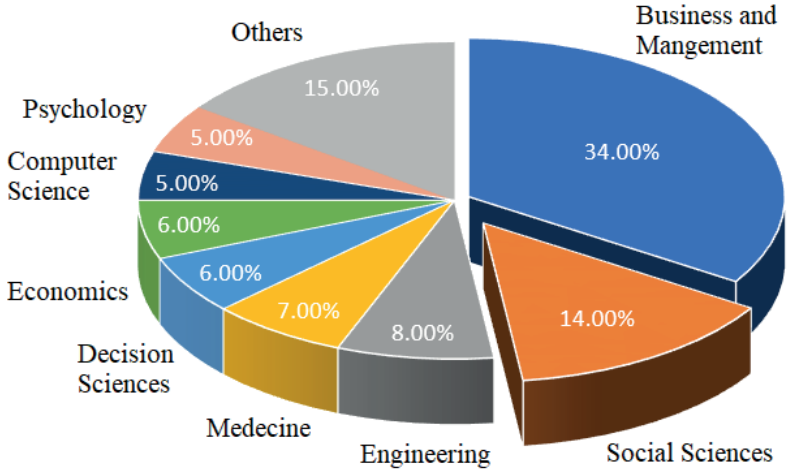

Fig. 4. Distribution of document by subject area

Application of VOSviewer: VOSviewer, a software tool developed by Leiden University Library [27], is used here to enable the creation and analysis of bibliographic networks using the 710 data retrieved from Scopus and cleaned based on the PRISMA model. This software serves as a valuable resource for mapping scientific fields, examining collaboration patterns, and identifying influential authors and papers in a specific domain. Accessible as a free download for Windows, Mac, and Linux, VOSviewer version 1.6.19 was used in this study[29].

The primary goal of conducting keyword co-occurrence analysis using VOSviewer is to extract frequency data from multiple documents and establish a network of relationships among keywords. This analysis enables the identification and highlighting of the dominant research trends in the field of organizational climate.

As depicted in Figure 5, the network visualization showcases the co-occurrence of author keywords, with the size of the circles indicating the number of published documents associated with each keyword. Larger circles represent keywords that appear in a greater number of documents. The distance between nodes reflects the strength of their connection, with shorter distances indicating stronger associations. Additionally, the thickness of the lines connecting nodes indicates the frequency of their co-occurrence. Thicker lines signify more frequent occurrences. The results of the analysis reveal that the most used keywords in the literature on organizational climate revolve around topics such as organizational

performance, employee engagement, job satisfaction, leadership, performance, organizational climate, and leadership culture.

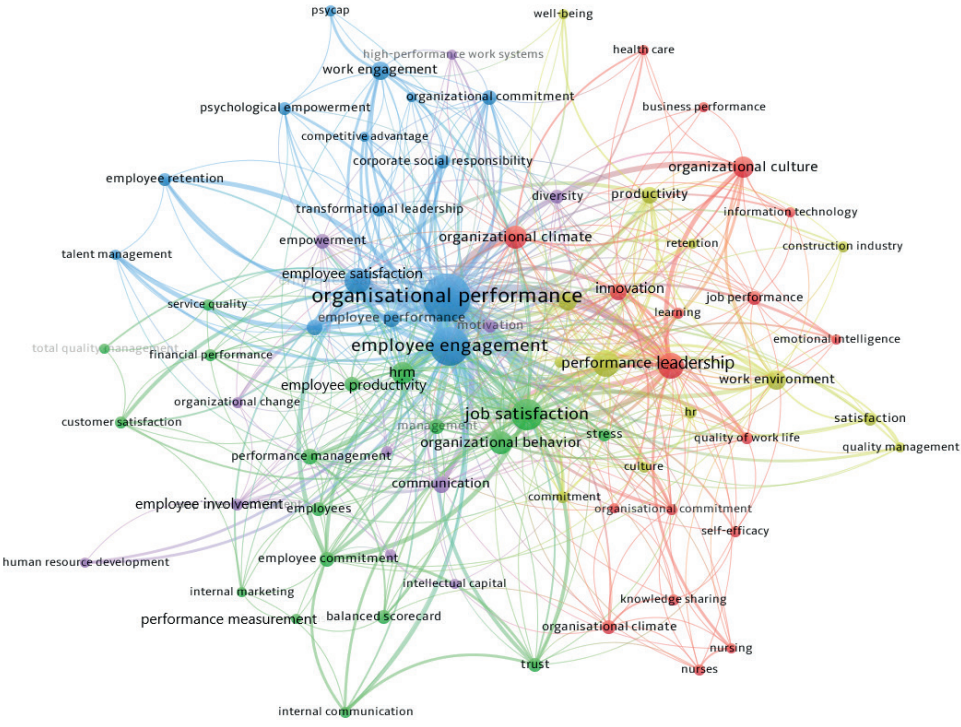

Fig. 5. Network visualization of keywords co-occurrence

Table 1 presents the top 20 most productive countries in terms of the number of publications with a minimum of 5 published documents. Out of the 89 countries examined, only 38 met this threshold. The top five active countries are the USA (117 documents, 9031 citations), India (71 documents, 596 citations), the UK (60 documents, 1943 citations), Australia (44 documents, 1945 citations), and Malaysia (40 documents, 377 citations). The Total Link Strengths (TLS) listed in Table 1 represent the cumulative strength of connections between countries. A higher TLS value suggests stronger collaborative relationships, while lower values indicate relatively weaker connections in research collaboration and citation patterns. For example, the United States (USA), Australia, and United Kingdom (UK), with TLS of 41, 37, and 36, indicate robust research collaborations and networks with other countries. Other countries show moderate to low engagement in research partnerships. Overall, the TLS provides valuable insights into the global research landscape, allowing researchers to identify potential collaborators and research partners in specific countries.

Figure 6 shows the “Countries’ Collaboration World Map” showcasing the collaborative relationships between countries. The United States (USA) emerges as a prominent contributor.

Table 1

Top 20 countries by number of documents including citations and TLS

Country	Documents	Citations	Total Link Strengths
USA	177	9031	41
India	72	596	11
UK	60	1943	36
Australia	44	1935	37
Malaysia	40	377	21
Canada	31	1093	16
China	31	802	30
Indonesia	31	80	3
South Africa	30	143	7
Portugal	20	351	7
Netherlands	19	2293	12
Pakistan	19	274	17
South Korea	18	534	9
Spain	18	343	11
Iran	17	148	3
Sweden	15	447	8
Italy	13	207	7
Saudi Arabia	11	77	6
UAE	11	40	7
Germany	10	554	6

In Figure 7, we can observe the network visualization of country collaboration based on co-authorship. The size of the circles in the network corresponds to the number of documents published by each country. Larger circles represent countries that have published a greater number of documents, while smaller circles represent countries with fewer publications. The distance between two nodes (circles) in the network reflects the strength of their co-authorship connection. A shorter distance indicates a stronger collaboration between the countries. Additionally, the thickness of the lines connecting the nodes represents the frequency of co-authorship occurrences between the countries. Thicker lines indicate that the countries have collaborated more frequently in co-authoring research papers. According to these definitions, it is obvious that the USA is the most active in terms of publications, it also has a high frequency of co-authorship with Australia and Canada suggesting strong collaborations. This type of visualization helps to understand the patterns and intensity of country-level collaborations in the field of organizational climate and performance.

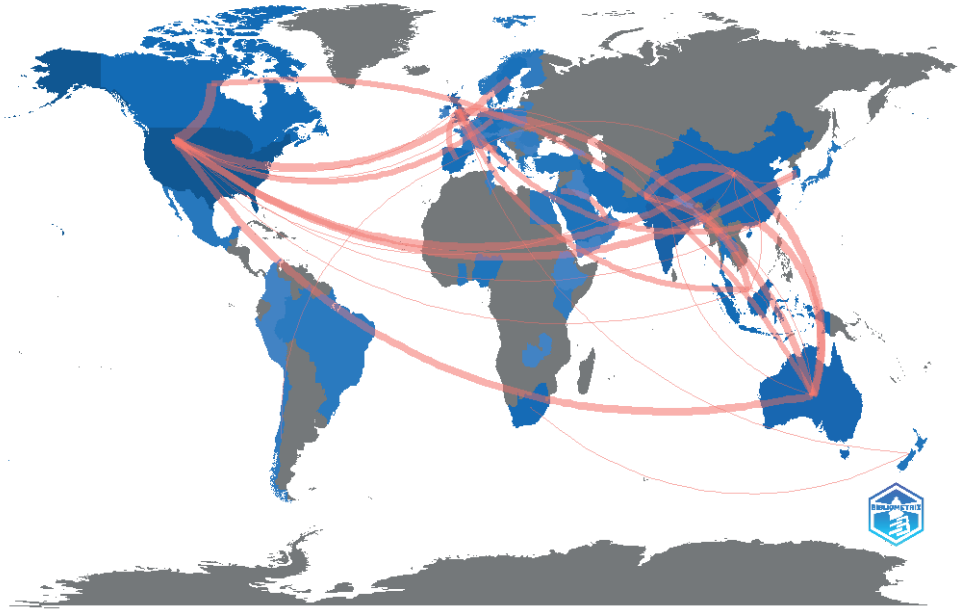

Fig. 6. Countries' Collaboration World Map

The top 10 sources in terms of citations are shown in Table 2. The International Journal of Human Resource Management ranked first, followed by the Journal of Organizational Effectiveness and the Journal of Nursing Administration. These journals mainly focus on management and administration within different domains. The International Journal of Human Resource Management emphasizes human resource management practices and theories. The Journal of Organizational Effectiveness explores factors that contribute to organizational success and the Journal of Nursing Administration focuses on nursing administration and leadership.

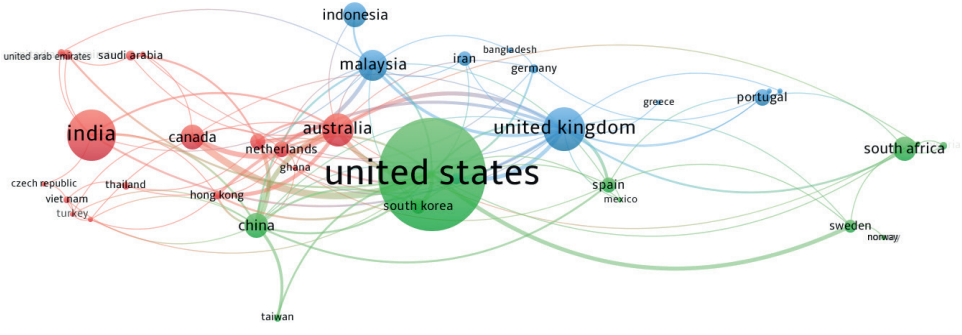

Fig. 7. Network of country collaboration based on co-authorship

Table 2

Top 10 Journals in terms of citations

Sources	Citations	Documents
International Journal of Human Resource Management	798	13
Journal of Organizational Effectiveness	452	8
Journal of Nursing Administration	385	14
Organizational Behavior and Human Performance	374	5
Management Decision	233	5
International Journal of Productivity and Performance Management	123	5
Human Resource Management International Digest	72	10
Sustainability (Switzerland)	64	9
Industrial And Commercial Training	59	9
International Journal of Environmental Research and Public Health	48	5

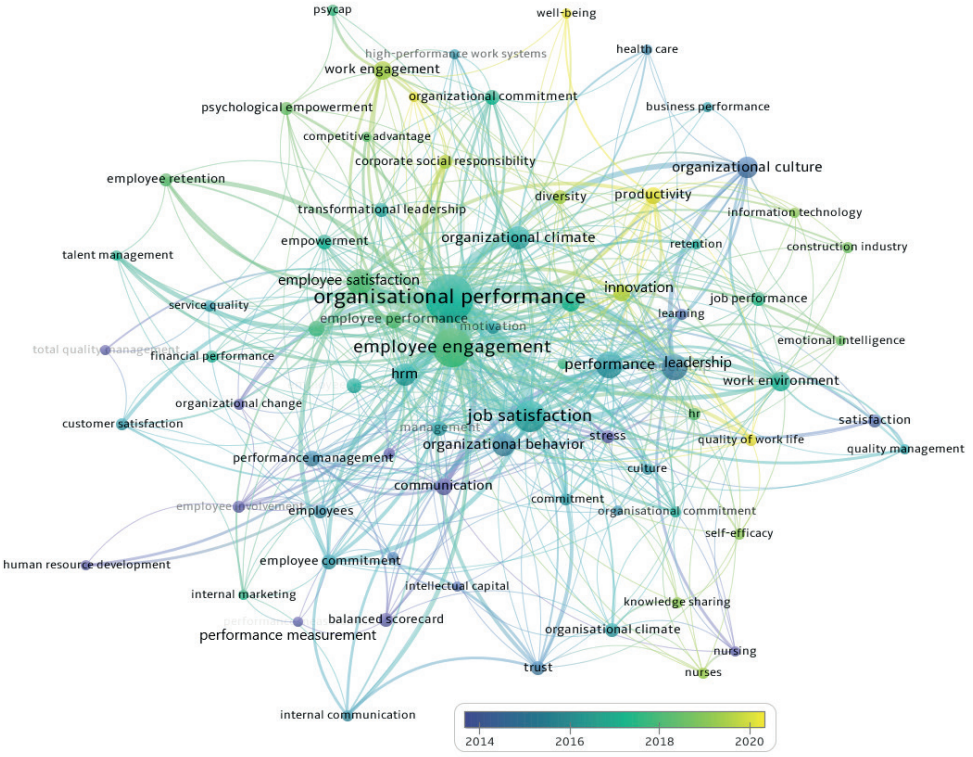

Fig. 8. Overlay co-occurrence of author keywords

Figure 8, which depicts the overlay visualization, provides valuable insights into the current research landscape of organizational climate and performance. The overlay visualization enables the identification of the most prominently discussed subjects within the organizational climate and performance and offers insights into their relative importance As can be seen from this figure, recent publications (yellow or close-to-yellow color) in this field have placed considerable emphasis on several key topics including quality of work life, innovation, productivity, well-being, organizational commitment, work engagement, and corporate social responsibility. This information can be instrumental in identifying significant areas of research, fostering potential collaborations, and identifying avenues for future study.

Density visualization is another feature in VOSviewer used for identifying patterns and trends in the data and areas of high and low concentration within the data. The density visualization of the keyword occurrence is illustrated in Figure 9. By visualizing the density of keyword occurrences, we can gain some insights into the relative importance and prevalence of specific topics within the organizational climate and performance data we retrieved from the Scopus database. The visualization utilizes different colors to represent varying densities of data. The red color, denoting a high density of data, specifically highlights the keywords "organizational performance" and "employee engagement." This indicates that these topics have a significant presence within the research community, suggesting that they are widely discussed and studied. On the other hand, the blue color represents a low density of data, indicating areas where the occurrence of keywords is less prevalent.

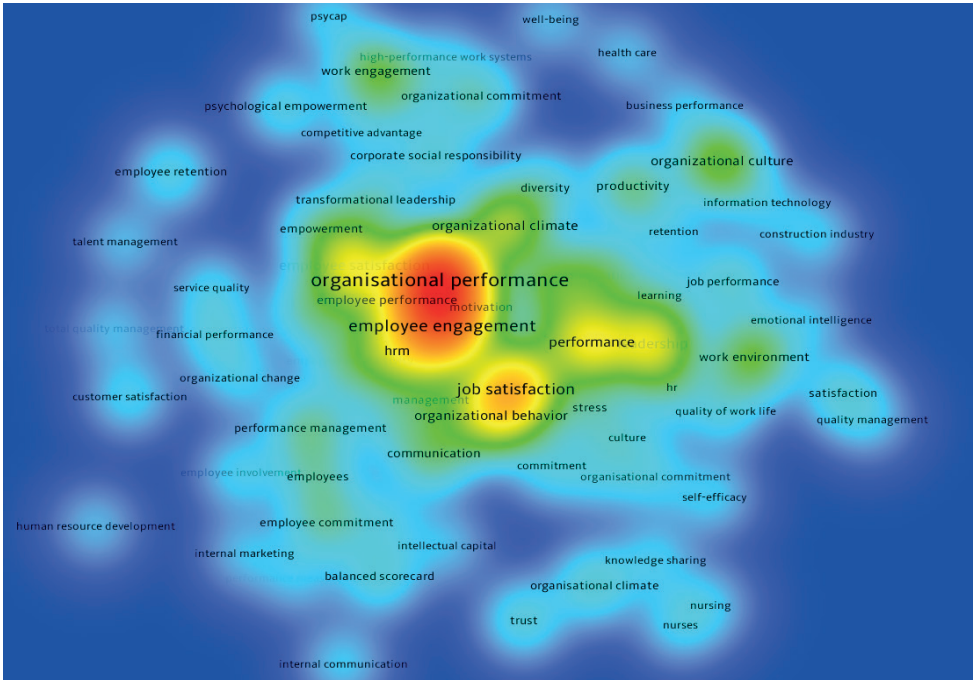

Fig. 9. Density co-occurrence of author keywords. The co-occurrence of keywords density

5. CONCLUSIONS

Bibliometric analysis of research in organizational climate and performance offers unmatched opportunities to make important contributions to theory and practice that spans several fields and disciplines and highlights the relevance of the research in this field. This study showed that organizational climate plays a vital role in improving employee performance. Results revealed that most of the documents published were in the fields of organizational climate and revolve around topics such as organizational performance, employee engagement, job satisfaction, leadership, performance, organizational climate, and leadership culture. The five most active countries in terms of published documents are the USA (117 documents, 9031 citations), India (71 documents, 596 citations), the UK (60 documents, 1943 citations), Australia (44 documents, 1945 citations), and Malaysia (40 documents, 377 citations). Results from overlay visualization of recent publications in the field of organizational climate and performance have placed considerable emphasis on several key topics including quality of work life, innovation, productivity, well-being, organizational commitment, work engagement, and corporate social responsibility. This information can be instrumental in identifying significant areas of research, fostering potential collaborations, and identifying avenues for future study.

One potential limitation of this study is that it is based on a bibliometric analysis of published research, which may not capture the full extent of research activity in the field of organizational climate and performance as some publication are for internal use only. Despite this limitation, this bibliometric analysis provides valuable insights into the current state of research. In the present study, we focused on the relationship between various factors related to organizational climate, work environment, employee satisfaction, and employee engagement, and their impact on organizational performance, employee productivity, organizational behavior, and performance outcomes. Several areas can be explored for future research. For example, understand the specific mechanisms by which organizational climate, work environment, employee satisfaction, and employee engagement are interrelated. Secondly, exploring the role of organizational behavior in the context of employee productivity and its contribution to overall organizational performance. Finally, evaluating and refining existing performance measurement systems to ensure they align with organizational goals and effectively capture performance indicators. Addressing these three components can enhance our understanding of the complex dynamics of organizational climate and performance and provide practical implications for improving organizational performance.

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Применение библиометрического анализа для оценки взаимосвязи социально-психологического климата и производительности труда

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Целью исследования является получение более глубокого и системного понимания взаимосвязи социально-психологического климата с производительностью труда. Методология предполагает анализ публикаций с использованием библиометрических методов и специализированного средства визуализации данных – VOSviewer. Результаты показывают, что эффективность работы организации, вовлеченность сотрудников, удовлетворенность работой, лидерство и культура лидерства являются ключевыми и тесно взаимосвязанными понятиями в исследованиях социально-психологического климата. В первую пятерку стран по количеству опубликованных документов и цитирований по данной тематике входят США, Индия, Великобритания, Австралия и Малайзия. В недавних публикациях в этой отрасли приоритетными были названы такие темы, как качество трудовой жизни, инновации, производительность, благополучие, приверженность организации, вовлеченность в работу и корпоративная социальная ответственность. Это исследование дает ценную для повышения эффективности работы сотрудников информацию, которая может быть полезна исследователям, практикантам и организациям. Важность работы заключается в определении направления будущих исследований и возможных точек соприкосновения в междисциплинарных исследованиях, а также способствует пониманию взаимосвязи социально-психологического климата в трудовом коллективе и изменении производительности труда.

Ключевые слова: социально-психологический климат, производительность труда, библиометрия, Scopus, VOSviewer.

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