Journal of Strategic Human Resource Management
14 (1) 2025, 10-26
www.publishingindia.com/jshrm/
https://doi.org/10.21863/jshrm/2025.14.1.002

Submitted: 03 January, 2025
Accepted: 13 January, 2025

# IMPACT OF QUALITY OF WORK LIFE (QWL) ON PERFORMANCE OF EMPLOYEE: A BIBLIOMETRIC ANALYSIS

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**Abstract:** *Improving employee work performance is a priority for every organisation, recognising individuals as key contributors to outcomes. Quality of work life (QWL) has emerged as vital for organisational functionality, encompassing initiatives to enhance the work environment and elevate employee well-being. Consequently, QWL has garnered significant attention in academic circles. This study aims to analyse global research trends in QWL and its impact on employee performance, examining publication outputs, countries, collaborations, and citations. Employing Marasco's (2008) four-phase bibliographic review method, the research reviews QWL and employee job performance publications from 1974 to 2023, yielding 494 publications from the Scopus database. Utilising reputable bibliometric measures, the study explores influential institutions and journals. Additionally, VOSviewer aids in visualising science mapping analysis, while keyword co-occurrence analysis identifies emerging trends. Co-authorship and citation networks elucidate connections among studies. The findings underscore the academic and practical significance of QWL research, offering recommendations to address potential journal challenges and identifying areas for future exploration. This research contributes to the advancement of QWL studies, identifying avenues for further investigation and enhancing understanding within the field.*

**Keywords:** *Quality of Work Life (QWL), Performance, Job Performance, Bibliometric Analysis, Scopus, VOSviewer, Research Direction*

## Introduction

Quality of Work Life (QWL) generally refers to an employee's satisfaction with their working life and emphasises the quality of the relationship between the employee and their work environment (Rose et al., 2006). Over time, scholars have conceptualised and operationalised the concept of QWL differently, as it encompasses a wide range of factors. From the 1960s to the 1980s, QWL primarily focused on working conditions. In the 1980s to 2000s, the need-fulfilment approach gained prominence. Currently, researchers often combine these approaches based on their judgement (Gogoleva et al., 2017). This combination has led to a broad range of QWL dimensions, such as employees' perceptions of job content, physical work environment, pay, benefits, promotions, autonomy, teamwork, decision-making participation, occupational health and safety, job security, communication, support from colleagues and managers, and work-life balance (Adhikari & Gautam, 2010), and others. Ultimately, QWL integrates all factors essential for attracting and retaining qualified employees (Mazlan et al., 2018; Mosadeghrad, 2013; Sulaiman et al., 2015).

QWL is a major issue for employees as well as organisations, which makes it a widely studied topic across various disciplines. The research focus in QWL has always changed over the years, and these shifting trends remain underexplored due to the limited scope of earlier studies. For instance, Gogoleva et al. (2017) conducted an extensive bibliometric analysis of 387 articles to explore the research perspectives and challenges in defining and measuring QWL factors. However, their study was limited to organisational studies. Further, Abdullah et al. (2021) also performed a bibliometric analysis on 757 published document from Scopus database but his research was in unidirectional i.e., to observe trends and developments about the term QWL research throughout study period and Zakaria et al. (2024) has also conducted research in the same line on the 644 documents from 1974 to 2019, which also limited to only identifying the current status of QWL research. None of them explored

the bibliometric analysis on the research paper published till now on QWL and its relationship with the performance. Other researchers have also performed literature reviews but faced constraints related to their specific focus areas and timeframes. This highlights the need for a comprehensive bibliometric analysis capable of tracing past trends in QWL research, identifying research gaps more intensively, and orienting future empirical studies toward addressing the topics and domains not yet explored in the field.

To address this problem and bridge the existing gap, this study conducted a comprehensive bibliometric analysis. The main objectives of this analysis were to: (1) identify trends and key contributions over the selected period concerning QWL and its impact on employee performance in the healthcare sector, (2) draw attention to the most influential publications during this timeframe, and (3) pinpoint areas that require further investigation. This study mainly focused on researching the trends, contributing dimensions, and outcomes of QWL and its impact on employee performance in the healthcare sector in the given period. The study proposed future research directions based on the emerging trends and contributions identified.

## Objective of Study

This study employs bibliometric evaluation and network visualisation analysis to answer the following research questions:

- What are the key trends in publishing and citations related to research papers/articles on QWL and its impact on performance in the healthcare sector?
- Who are the top contributors in terms of authors, countries, journals, and organisations in advancing knowledge in this field?
- What approach should be taken for the next phase of the study?

## Materials and Methods

### Data Description

Determining the database is the first and foremost important step while conducting a bibliometric study. Several databases exist such as Google Scholar, Science Direct, Medline, Scopus, and Web of Science (WoS), which are the most popular and widely known sources in the research fraternity. These databases are widely recognised for their network collecting. However, a major concern for the facilitator's growth in this study, as well as the advancement of previous research, is the accessibility of the information. Gavel and Iselid (2008) compare the coverage of the two main bibliometric database sources, WoS and Scopus by using the intersection technique. They found that most of the indexed items in WoS were also included in Scopus. Also, Feng et al. (2017) state that the information available in the Scopus dataset is more extensive than in the WoS database. Which provides around 20% greater coverage than WoS and is useful for both keyword searching and citation analysis. Whereas PubMed is the best resource for biomedical electronic research (Falagas et al., 2008). Moreover, Cobo et al. (2011) showed that the Scopus database is more useful compared to others due to a structured, ordered system that can be used to extract metadata and publication details for a range of research areas. With the aforementioned explanations in mind, Scopus was selected for this study. Table 1 shows the process for selecting samples for bibliometric analysis. Because it has several analytical tools, Scopus is an excellent choice for bibliometric research (Vieira & Gomes, 2009). The following method of collecting data is employed in this investigation.

**Table 1: The Process of Selecting Samples for Bibliometric Analysis**

| Steps | Details and an Explanation |
|---|---|
| Source of Data | Scopus |
| Study Period | 1974-2023 |
| Keywords | Quality of work life, Performance of Employee and related synonyms commonly used by researchers. |
| Refine | Keywords searched in the field of title, abstract or authors' keywords |
| 1st Phase Exclusion | English articles/reviews |
| 1st Phase Sample | 545 publications |
| 2nd Phase Exclusion | Economics, econometrics, banking, psychology, the arts and humanities, medicine, engineering, sociology, commerce, management, and accounting, as well as decision sciences, environmental science, computer science, and economics. |
| Exclusion Steps | Based on the selected year, language, document type, and publishing stage, 51 articles were eliminated. |
| Final Collection | This bibliometric analysis comprised 494 articles. |

(TITLE-ABS-KEY ("Quality of work Life" OR "Quality of Working Life" OR "Work Life Quality" OR "Working Life Quality") AND TITLE-ABS-KEY ("performance")) AND ( EXCLUDE ( PUBYEAR , 2024 ) ) AND ( LIMIT-TO (LANGUAGE, "English")) AND (EXCLUDE

(PUBSTAGE, "aip")) AND (EXCLUDE (DOCTYPE, "le") OR EXCLUDE (DOCTYPE, "tb") OR EXCLUDE (DOCTYPE, "no") OR EXCLUDE (DOCTYPE , "ed"))

In the first phase, the data was taken from the Scopus database on March 10, 2024. The keywords "quality of work life" OR "quality of working life" OR "work life quality" OR "working life quality" AND "performance" in the title, abstract, and keywords were used to collect the data. The year 1974-2023 was chosen as the range. Since the first published article or review paper was discovered in the Scopus database in 1974. Data were also filtered by language, which is limited to English only, publication stage, document type, and year to make the dataset more cleaned and easy to perform analytical tools. This search yielded 494 articles that will be analysed and evaluated further.

## Bibliometric Analysis

This study employs bibliometric analysis, a term first used by Pritchard (1969), who said that all studies attempting to measure the textual communication process may utilise it (Gokhale et al., 2020). Furthermore, bibliometrics is defined by Hung (2012) as a group of methods for assessing and measuring texts and data. Bibliometric analysis is a methodology that measures, tracks, and analyses academic literature using a variety of quantitative techniques (Roemer & Borchardt, 2015). It identifies the writers' publications, the most prestigious journals, the approaches taken, and the results attained (Durán Sánchez et al., 2014). Moreover, Van Raan (2014) adds that bibliometric analysis is also necessary to track the evolution of research over time and the expansion of the body of literature. Through quantitative measurement of the body of published literature, bibliometric analysis provides an answer to this issue. Bibliometric analysis (Dzikowski, 2018; Small, 1973) is a sampling approach for comparing and tracking the current renown of research in a specified topic of academic interest. According to Zupic and Cater (2015), the bibliometric methodology offers a scientifically valid foundation for research themes by analysing long publications, which is not the case with the usual structured method. Software called VOSviewer (Bastian et al., 2009; Van Eck & Waltman, 2014) may be used to undertake network investigations and provide visual representations of bibliometric data. Merigó and Yang (2017) used a range of bibliometric metrics based on keyword co-occurrence, co-citation, and bibliographic coupling to gather information for mapping (Valenzuela-Fernandez et al., 2019). In the network representation produced by VOSviewer, the size of nodes and merges indicates the strength of links (Van Eck & Waltman, 2014). Because VOSviewer employs multidimensional scaling stress reduction in its layout and does away with cluttered labelling, some researchers prefer it (Leydesdorff & Rafols, 2012). The Bibliometric analysis step-by-step processes are shown in Fig. 1.

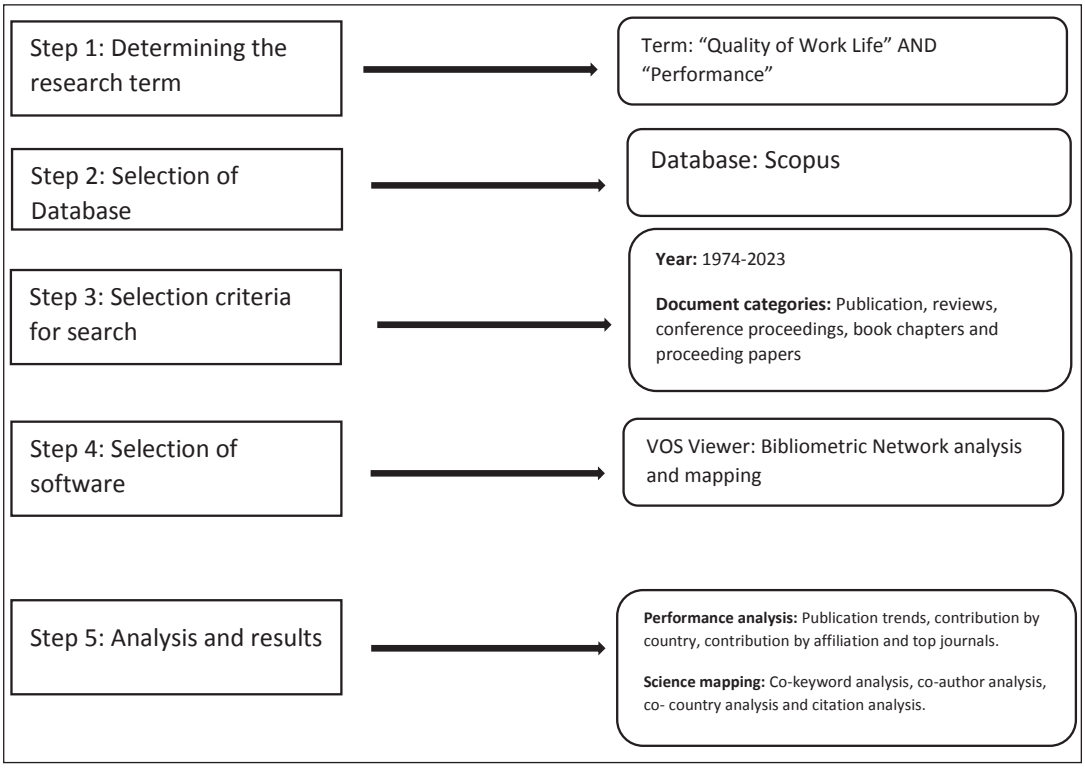


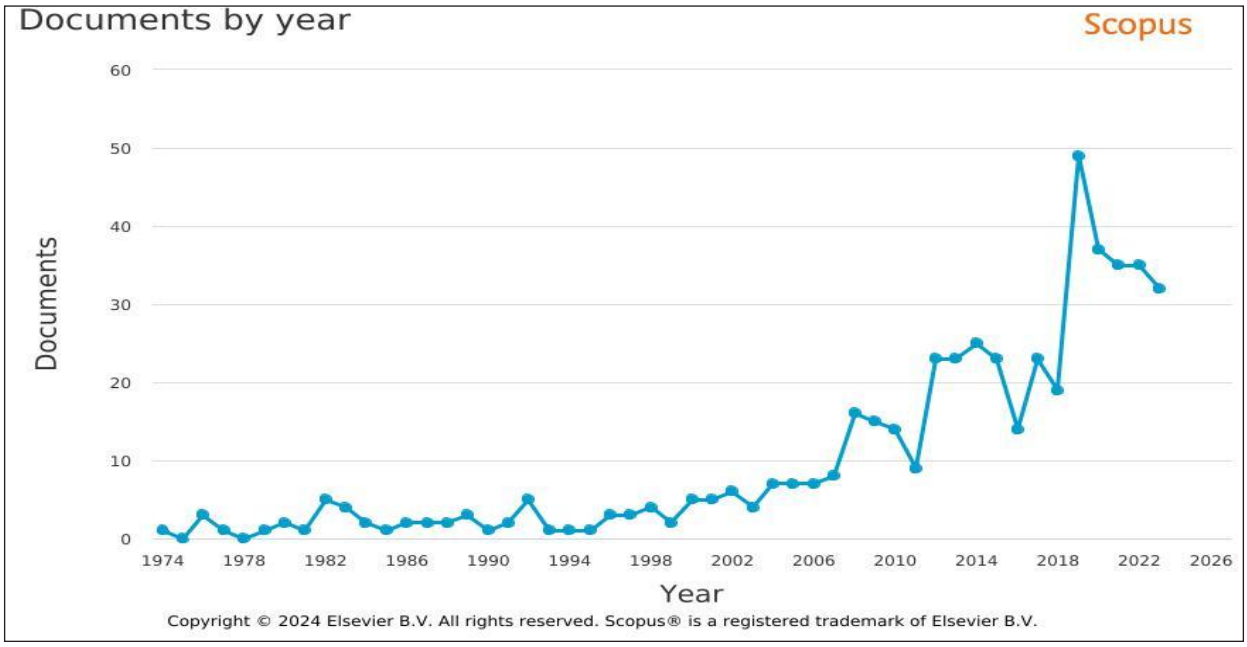

**Fig. 1: The Bibliometric and Network Visualisation Analysis Methodology**

## Results of the Study of Bibliometric Data and Network Visualisation

### Part A: Performance Analysis

#### Analysis of Publication Trends

Fig. 2 shows the total number of publications published between 1974 and 2023 on 'QWL and Its impact on performance'. The findings reveal a constant growth in the majority of published papers over the course of the study, with the impact increasing over time. Only in the last decade has research in this field begun, with only a few publications being published on or before 2010. The number of publications has only been slowly growing in the previous several years, i.e., 2010 onwards. The trend is anticipated to continue, with 2019 marking the highest year for papers published (49). The same can be said in Table 2 as well. Table 3 displays the type of documents, that is, 494 documents in the area of QWL and its relation with the performance. A total of 391 articles were submitted, accounting for 79.15% of the total. Thus, the number of papers is rather large, implying that key research has evolved and changed. Fig. 3 summarises the total document type in the form of a pie chart.




Source: Scopus database.

**Fig. 2: Publications on Employee Experience from 1974 to 2023**

**Table 2: Documents Published by Year (1974-2024)**

| Year | Document Published | Year | Document Published | Year | Document Published | Year | Document Published |
|---|---|---|---|---|---|---|---|
| 2023 | 32 | 2010 | 14 | 1997 | 03 | 1984 | 02 |
| 2022 | 35 | 2009 | 15 | 1996 | 03 | 1983 | 04 |
| 2021 | 35 | 2008 | 16 | 1995 | 01 | 1982 | 05 |
| 2020 | 37 | 2007 | 08 | 1994 | 01 | 1981 | 01 |
| 2019 | 49 | 2006 | 07 | 1993 | 01 | 1980 | 02 |
| 2018 | 19 | 2005 | 07 | 1992 | 05 | 1979 | 01 |
| 2017 | 23 | 2004 | 07 | 1991 | 02 | 1978 | 00 |
| 2016 | 14 | 2003 | 04 | 1990 | 01 | 1977 | 01 |
| 2015 | 23 | 2002 | 06 | 1989 | 03 | 1976 | 03 |

| Year | Document Published | Year | Document Published | Year | Document Published | Year | Document Published |
|---|---|---|---|---|---|---|---|
| 2014 | 25 | 2001 | 05 | 1988 | 02 | 1975 | 00 |
| 2013 | 23 | 2000 | 05 | 1987 | 02 | 1974 | 01 |
| 2012 | 23 | 1999 | 02 | 1986 | 02 | | |
| 2011 | 9 | 1998 | 04 | 1985 | 01 | | |

**Table 3: Document Type Information (1974-2021)**

| Sr. No. | Document Type | Number | Percentage |
|---|---|---|---|
| 1 | Article | 391 | 79.15 |
| 2 | Conference paper | 43 | 8.70 |
| 3 | Review | 25 | 5.06 |
| 4 | Book chapter | 20 | 4.05 |
| 5 | Conference review | 12 | 2.43 |
| 6 | Book | 2 | 0.40 |
| 7 | Short survey | 1 | 0.20 |

Source: Scopus database.

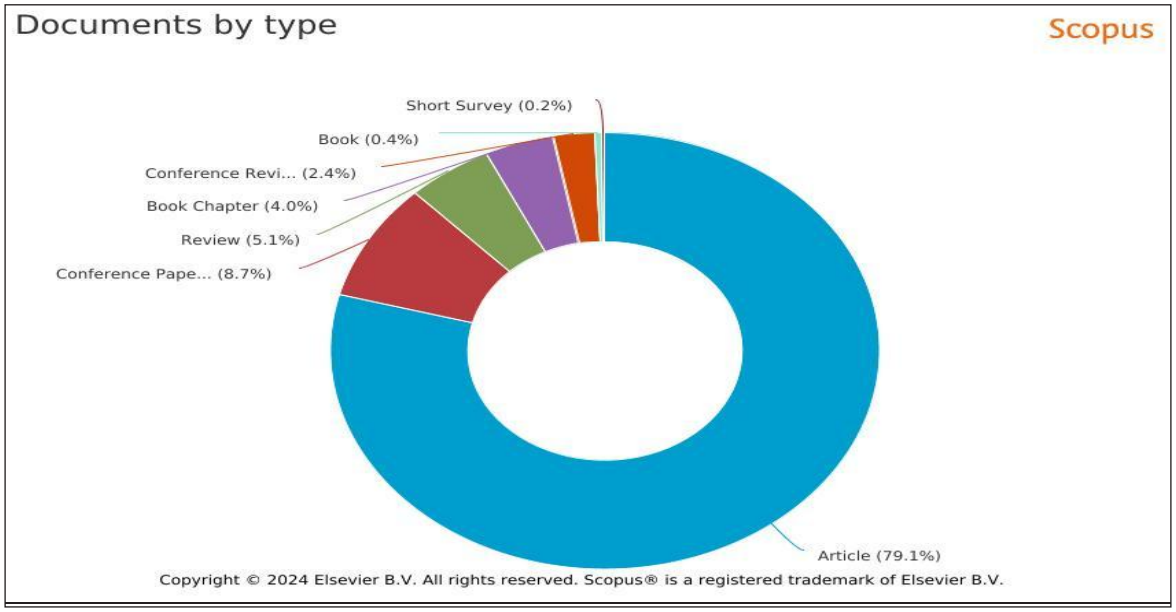
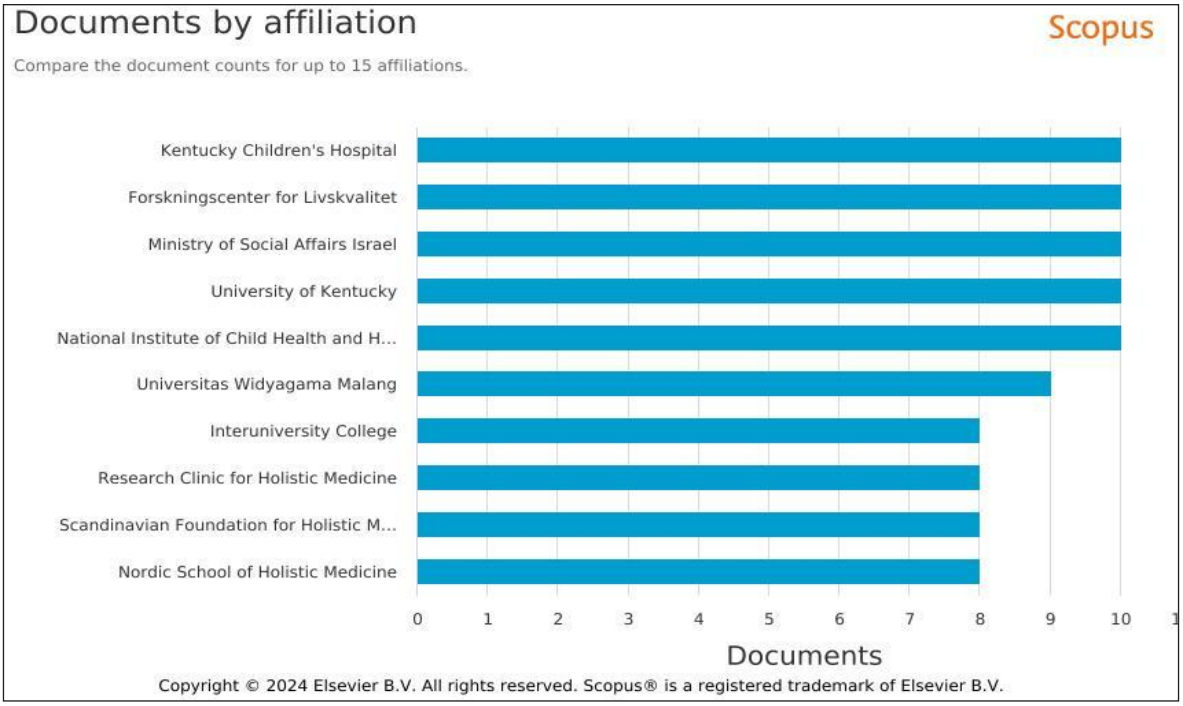



**Fig. 3: Document by Type**

## Analysis of Institutional Contribution

The current scenario of the top 10 institutions publishing in this field is shown in Table 4. The table provides a brief overview of the institute's contribution. As displayed in Table 4, Kentucky Children's Hospital, United States; Forskningscenter for Livskvalitet; Ministry of Social Affairs Israel; University of Kentucky; National Institute of Child Health and Human Development NICHD is the preeminent contributor followed by the Universitas Widyagama Malang, Interuniversity College, Research Clinic for Holistic Medicine, Scandinavian Foundation for Holistic Medicine, and Nordic School of Holistic Medicine. Figure 4 also illustrates the growth rates of the top 10 institutions. Strong increases were observed between 1974 and 2023 in the counts for America (USA) publications from Kentucky Children's Hospital. The rise in university-authored publications further highlights these institutions' growing global significance. In the area of QWL and its impact on performance, European nations have made notable contributions. However, China did not rank among the top 10, while the United States and the United Kingdom have maintained their positions on the list.




Source: Scopus database.

**Fig. 4: Document by Affiliation**

**Table 4: Performance of Top 10 Contributing Institutions**

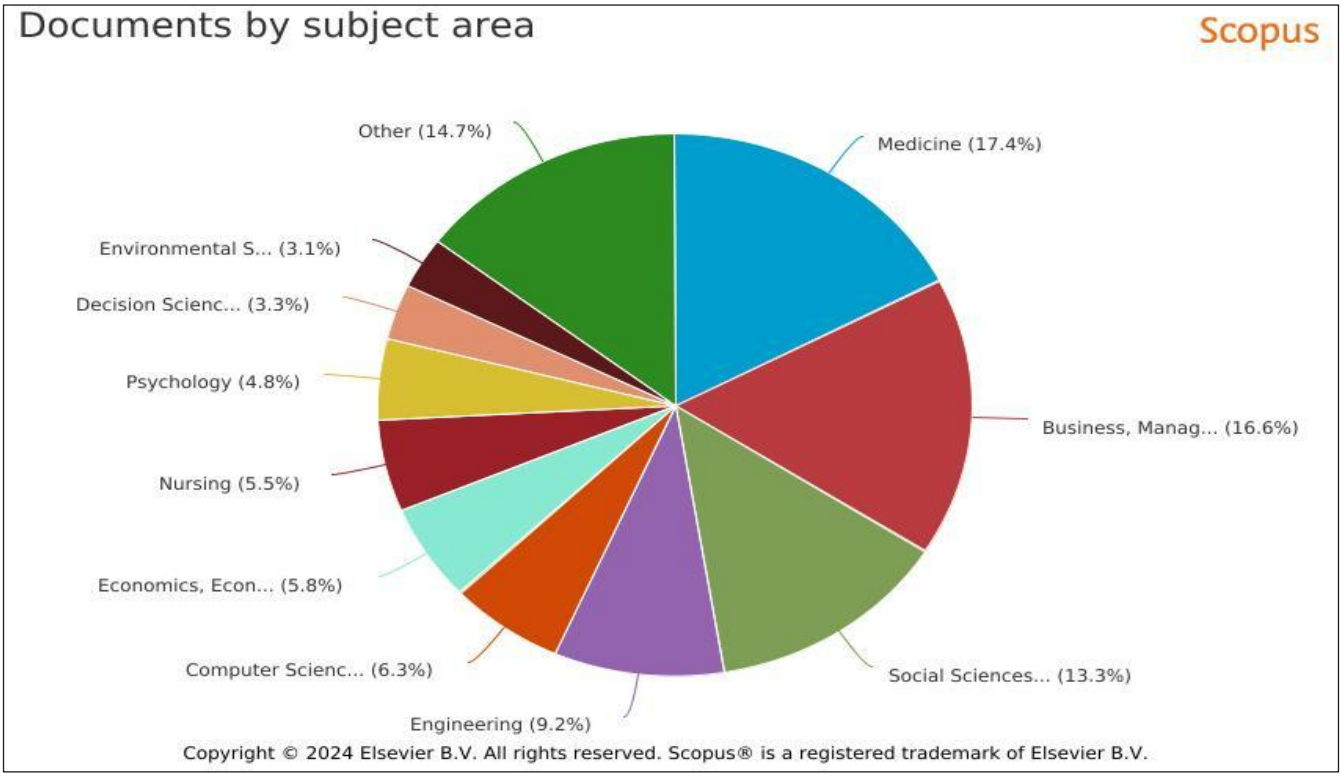
| Sr. No. | Name of the Institution | Number of Documents |
|---|---|---|
| 1 | Kentucky Children's Hospital, United States | 10 |
| 2 | Forskningscenter for Livskvalitet | 10 |
| 3 | Ministry of Social Affairs Israel | 10 |
| 4 | University of Kentucky, United Kingdom | 10 |
| 5 | National Institute of Child Health and Human Development NICHD, U.S. | 10 |
| 6 | Universitas Widyagama Malang, Indonesia | 09 |
| 7 | Interuniversity College | 08 |
| 8 | Research Clinic for Holistic Medicine | 08 |
| 9 | Scandinavian Foundation for Holistic Medicine | 08 |
| 10 | Nordic School of Holistic Medicine | 08 |

## Analysis of Subjects and Journals

From 1974 to 2023, different areas contribute to the body of knowledge on QWL and its relationship to performance in the healthcare industry. The top 10 themes that make up the majority of the 494 papers are listed in Table 5. Medicine (17.4%), business, management, and accounting (16.6%), social science (13.3%), engineering (9.2%), computer science (6.3%), economics, econometrics, and finance (5.8%), psychology (4.8%), nursing (5.5%), decision sciences (3.3%), environmental science (3.1%), and others (14.7%) were the top contributors to the total number of articles.

Fig. 5 also highlights the leading disciplines contributing to the field of QWL and its connection to performance. The top five contributors Medicine, Business, Management and Accounting, Social Science, Engineering, and Computer Science show consistent annual growth. Table 6 lists the top 10 journals that made the most significant contributions to the topic of "QWL and its relationship with performance in the healthcare sector" between 1974 and 2023. These journals account for the majority of articles published on this subject. Further, Fig. 6 displays the year-wise publication trends of these top 10 journals. The percentage of review articles by year reveals a comparison among the journals: Advances in Intelligent Systems and Computing (20.6%),

International Journal of Applied Business and Economic Research (13.2%), International Journal of Environmental Research and Public Health (13.2%), International Journal on Disability and Human Development (11.8%), PLOS ONE (8.8%), International Journal of Applied Engineering Research (7.4%), International Journal of Human Resource Management (7.4%), Approaches to Global Sustainability Markets and Governance (5.9%), BMJ Open (5.9%), and Indian Journal of Public Health Research and Development (5.9%).

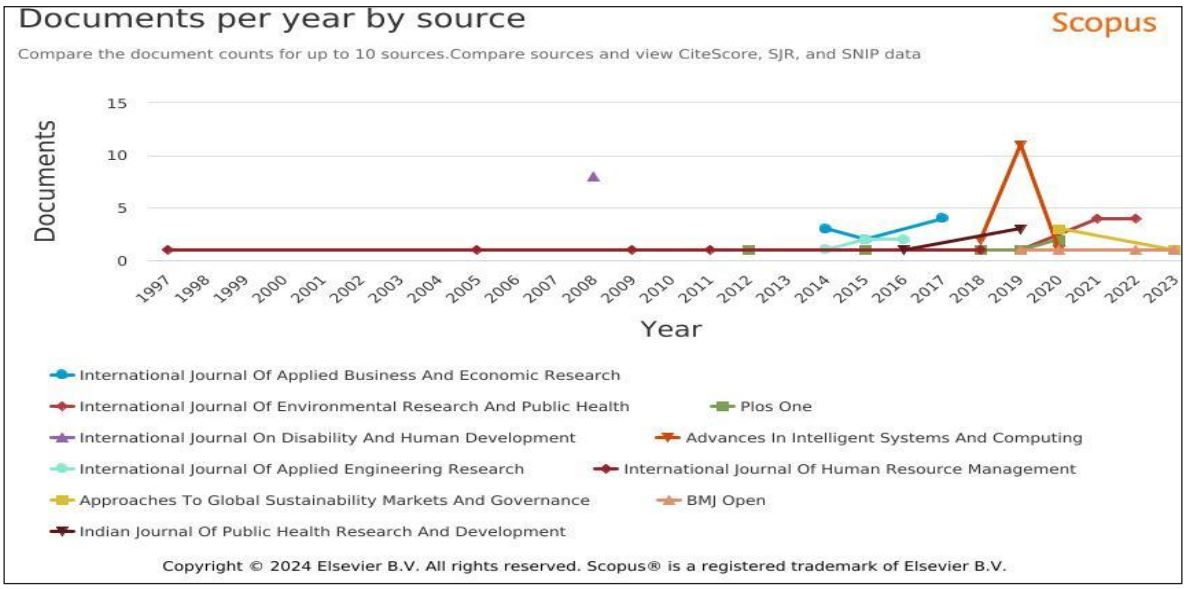



Source: Scopus database.

**Fig. 5: Documents by Subject Area**

**Table 5: Subject-Wise Contribution**

| Sr. No. | Subject Area | Number of Documents | Percentage |
|---|---|---|---|
| 1 | Medicine | 153 | 17.4 |
| 2 | Business, Management and Accounting | 146 | 16.6 |
| 3 | Social Sciences | 117 | 13.3 |
| 4 | Engineering | 81 | 9.2 |
| 5 | Computer Science | 55 | 6.3 |
| 6 | Economics, Econometrics and Finance | 51 | 5.8 |
| 7 | Nursing | 48 | 5.5 |
| 8 | Psychology | 42 | 4.8 |
| 9 | Decision Sciences | 29 | 3.3 |
| 10 | Environmental Science | 27 | 3.1 |




Source: Scopus database.

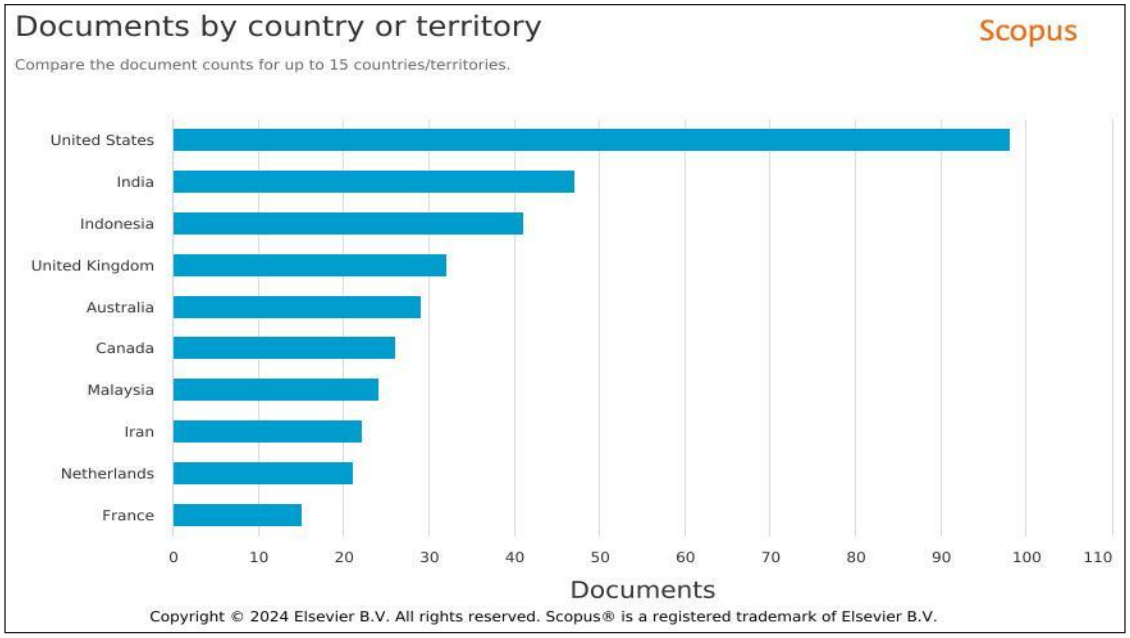
**Fig. 6: Journals with Publication Trends**

**Table 6: Performance of Top 10 Journals**

| Sr. No. | Journal | Number of Documents | Percentage |
|---|---|---|---|
| 1 | Advances in Intelligent Systems and Computing | 14 | 20.6 |
| 2 | International Journal of Applied Business and Economic Research | 09 | 13.2 |
| 3 | International Journal of Environmental Research and Public Health | 09 | 13.2 |
| 4 | International Journal on Disability and Human Development | 08 | 11.8 |
| 5 | Plos One | 06 | 8.8 |
| 6 | International Journal of Applied Engineering Research | 05 | 7.4 |
| 7 | International Journal of Human Resource Management | 05 | 7.4 |
| 8 | Approaches to Global Sustainability Markets and Governance | 04 | 5.9 |
| 9 | BMJ Open | 04 | 5.9 |
| 10 | Indian Journal of Public Health Research and Development | 04 | 5.9 |

## Analysis of Territory/Country Contribution

Fig. 7 highlights the top 10 countries contributing to the field. According to the dataset, the United States produced the largest share of articles (19.84%), followed by India (9.51%), Indonesia (8.30%), the United Kingdom (6.48%), Australia (5.87%), and others. The increase in publications is particularly evident in the United States, a major contributor. Strong collaborative ties between the United States and India are evident, along with close cooperation between the United States and Indonesia, the United Kingdom, and Australia. This suggests that developed countries tend to collaborate more in academic publishing. However, some nations or regions, such as Uganda, Japan, and Brazil, display minimal collaboration, highlighting areas where greater focus could be directed. Table 7 further validates the contributions of the top 10 nations based on the number of published documents.




Source: Scopus database.

**Fig. 7: Documents by Country/Territory**

**Table 7: Contribution of the Top 10 Nations**

| Sr. No. | Country | Number of Documents | Percentage |
|---|---|---|---|
| 1 | United States | 98 | 19.84 |
| 2 | India | 47 | 9.51 |
| 3 | Indonesia | 41 | 8.30 |
| 4 | United Kingdom | 32 | 6.48 |
| 5 | Australia | 29 | 5.87 |
| 6 | Canada | 26 | 5.26 |
| 7 | Malaysia | 24 | 4.86 |
| 8 | Iran | 22 | 4.45 |
| 9 | Netherland | 21 | 4.25 |
| 10 | France | 15 | 3.04 |

## Part B: Network Visualisation

### Co-Occurrence of Keywords

According to co-occurrence analysis, the frequent usage of various keywords in a certain subject demonstrates the significance of terms in that discipline (Baldwin et al., 2003). The phrase 'co-word' describes a group of related keywords that frequently appear in writings on the same subject (Lu & Wolfram, 2012). The research approach themes are revealed through the co-occurrence of terms, which also looks at the relationships and patterns of related subfields (Ding et al., 2001; He, 1999).

A network model of keyword co-occurrences was created using VOSviewer, focusing on 'Author's Keywords' for the analysis of the specified terms. From the Scopus database, a total of 1,139 keywords were identified but to make the figure gain a more simplified and comprehensible appearance, a minimum requirement of three occurrences was set for a term to be included in the network analysis out of which 96 met the established thresholds, which are divided into 10 clusters. The largest cluster contains 19 items and the smallest has only 2 items. Fig. 8 illustrates network visualisation maps that depict term co-occurrences from the Scopus database. As shown in Fig. 8, QWL and its related synonyms have the highest frequency of co-occurrences. The thickness of the lines connecting the keywords represents the strength of their relationships, with QWL having the strongest connections to Job Performance, followed by Job Satisfaction, Quality of Life, Nurses, Stress, Burnout, Work, Leadership, and other terms.

The connections between QWL and other aspects such as performance, job satisfaction, organisational commitment, human resources, burnout, and employee well-being are evident from the network representations. Opportunities for additional research into the connections among organisational culture, higher education, occupation and occupational health, work environment, retention factors, innovation, turnover intentions, and emotional intelligence challenges are highlighted in the network visualisation map. Table 8 confirms the list of top keyword occurrences along with their connections and overall link strength.

**Table 8: The List of Top Keyword Occurrences and Its Overall Link Strength**

| Ranking Order (RO) | Keywords | Total Link Strength | Occurrences |
|---|---|---|---|
| 1 | Quality of work life & related words* | 318 | 179 |
| 2 | Performance & related words** | 151 | 86 |
| 3 | Job Satisfaction | 106 | 50 |
| 4 | Quality Of Life | 93 | 29 |
| 5 | Nurses | 40 | 14 |
| 6 | Stress | 29 | 14 |
| 7 | Burnout | 24 | 13 |
| 9 | Work | 25 | 13 |
| 10 | Leadership | 18 | 10 |
| 11 | Motivation | 24 | 10 |
| 12 | Organisational Commitment | 18 | 9 |
| 13 | Human Resources | 10 | 8 |
| 14 | Productivity | 19 | 8 |
| 15 | Well-Being | 9 | 8 |
| 16 | Commitment | 13 | 7 |

* Related words mean Quality of working life, Quality of work life (QWL), Quality of work-life, Quality of worklife, and QWL.

**Job performance, Employee performance, Organisational performance, Work performance, Performance measurement, Performance management, Performance obstacles.

Source: Authors' Calculation based on Scopus database and VOSviewer.

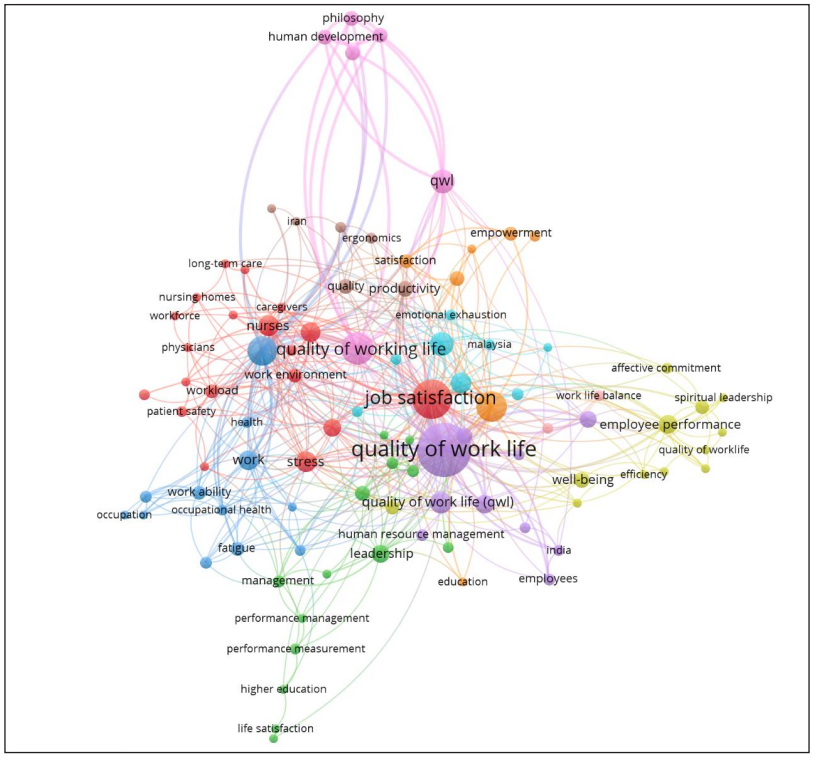



**Fig. 8: Network Visualisation of Author's Keyword Co-Occurrence**

## Co-Authorship Links

Co-authorship analysis explains how researchers interact with each other. Since co-authorship constitutes a formal method of intellectual collaboration, it is critical to understanding the interactions among researchers (Acedo et al., 2006; Cisneros et al., 2018). This analysis also encompasses related author attributes, such as their affiliated institutions and countries. Therefore, the co-authorship visualisation feature in VOSviewer was used to examine patterns of collaboration among authors and nations in the context of QWL research. Co-authorship connections provide insights into the authors and researchers from different countries who collaborate to produce studies on this topic.

*Co-Authorship Network Visualisation Based on Authors*

The Scopus database records a total of 1,353 authors when the minimum number of publications and citations is set at one and zero, respectively. But when the threshold was raised to one for citation and kept constant for the minimum number of publications, then a total of 1,146 authors qualified for the threshold which means there are a total of 1,146 authors who have at least one published document and have one citation as well. For author co-authorship network analysis, the cut off threshold is set at one for the minimum number of publications and three for the minimum number of citations because it helps to create better network visualisation and more appropriate results for analysis. By applying the threshold, a total of 945 out of 1,353 authors met the requirement but out of those the largest connected group consisted of just 24 authors, which formed a single cluster with an overall 276 links and zero total link strength. The network of authors collaborating on publications can be seen in Fig. 9a, where each cluster is distinguished by a unique colour for easier identification. In this co-authorship analysis, all connected items are included. The colours represent clusters of collaborating authors, and the lines indicate their connections.

Further, Table 9 highlights the overall link strength of the top five authors based on their co-authorship networks. Andersen, Niels Jorgen; Merrik, Joav; and Ventegodt, Soren lead the strongest co-authorship network, given their number of publications, citations, and total link strength. Fig. 9a also reveals through the visualisation that, despite a sufficient number of authors, collaboration within the field of "Quality of Work Life and Performance" is limited, with relatively few active researchers. This presents a significant opportunity for researchers in this area to collaborate and expand the body of publications.

**Table 9: The Top Five Authors and Total Link Strength**

| Sr. No. | Name of Authors | Publications of Author | Author' Total Citation | Total Link Strength of the Author |
|---|---|---|---|---|
| 1 | Andersen, Niels Jorgen | 10 | 13 | 28 |
| 2 | Merrik, Joav | 10 | 13 | 28 |
| 3 | Ventegodt, Soren | 10 | 13 | 28 |
| 4 | Kandel, Isack | 8 | 12 | 24 |
| 5 | Arronson, Neil K. | 1 | 6 | 23 |

Source: Authors' Calculation based on Scopus database and VOSviewer.

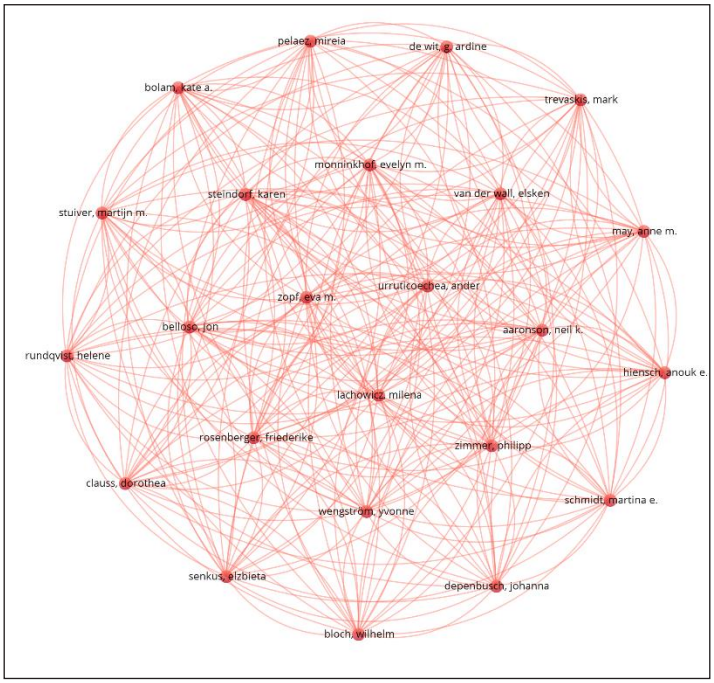



**Fig. 9a: Collaboration Co-Authorship Network Based on Authors in QWL and Performance**

*Co-Authorship Network Visualisation Based on Countries*

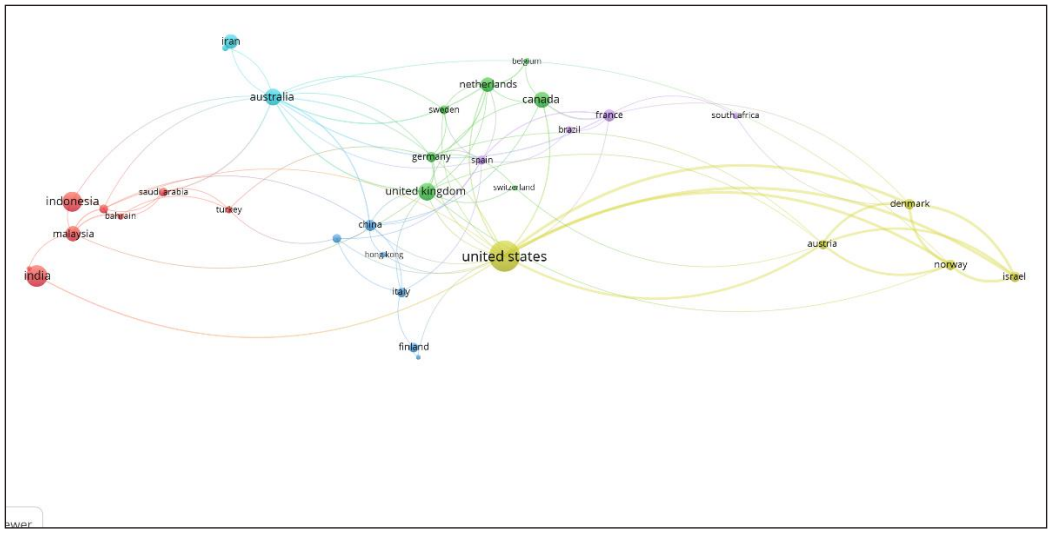
The research collaboration among the important research-oriented countries is depicted on the network visualisation map. The density of connections between countries signifies the degree of co-authorship between them. In this study, publications were analysed with a limit of 25 nations for each research article. The countries with at least three publications and two citations were included which produced 33 items out of a total of 87 items into six clusters

from the Scopus database. Co-authorship within the nations' network who were within the Scopus dataset is displayed in Fig. 9b. In co-authorship analysis, Table 10 displays the five most collaborating nations from the overall relationship strength perspective. Based on the results, the United States, Denmark, Norway, Israel, and Austria indicate the highest degree of co-authorships, with total link strengths between 35 and 57. Leading the pack is the United States with 98 publications, 5927 citations, and a total link strength of 57.

Fig. 9b shows the countries that are collaborating on the QWL research including the authors' concerns for the countries through which they co-author the studies. The dominion gaps show that the domain is growing with international efforts to address QWL; however, dissemination has not been thorough since country differences in co-authorship are seen to be insignificantly pronounced. This is, however, not the case for developing countries which seem to stand as an island that is more distant from interactions with other countries or clusters in the broad sea network. There is an effective displacement of developing countries towards a powerful collaboration with developed countries.

**Table 10: Top Five Countries Based on Co-Authorship Links**

| Sr. No. | Countries | Number of Publications | Total Citation | Total Link Strength |
|---|---|---|---|---|
| 1 | United States | 98 | 5927 | 57 |
| 2 | Denmark | 12 | 21 | 28 |
| 3 | Norway | 12 | 149 | 39 |
| 4 | Israel | 12 | 149 | 39 |
| 5 | Austria | 10 | 69 | 35 |




Source: Authors' Calculation based on the Scopus database and VOSviewer.

**Fig. 9b: Network Visualisation Co-Authorship Network Based on Countries and Regions**

## Citation Analysis

The core idea behind citation analysis is that authors cite works relevant to their specific fields. As a result, citations are regarded as an indicator of significance (Dzikowski, 2018; Van Raan, 2003). Citation analysis is widely recognised as the most effective approach for evaluating the impact of a research publication (Tsay, 2009). In this section, we delve into citation analysis, focusing on the most prominent authors and countries.

## Citation Network Based on Authors

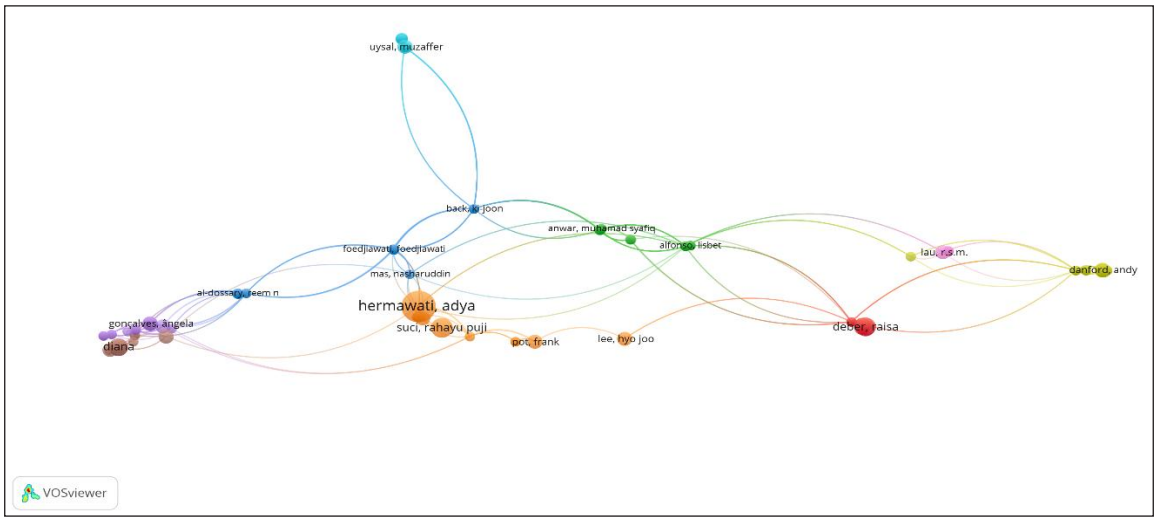
Citation analysis is performed to determine the most frequently cited papers and influential authors, providing insights into their research objectives. By setting minimum thresholds of one for publications and five for citations, a network of 814 related authors was identified. Fig. 10a illustrates the authors' citation network, emphasising those with the highest publication counts. The network is composed of nine clusters, distinguished by different colours, includes

127 connected authors, a total of 427 links, and a total link strength of 454. Authors within the same colour cluster are more likely to collaborate closely.

The impact of an author is reflected in both the number of publications they produce and the citations they receive (Dzikowski, 2018). Table 11 lists the top five authors based on citation frequency and their total link strength. Among these, Noseworthy, John H., and Shanafelt, Tait D., stand out as the most influential authors in terms of citation. However, the analysis shows that high publication output does not necessarily correlate with influence, as only a few researchers achieved high citation counts. This suggests that, despite significant research on QWL and its effect on performance, the anticipated level of engagement from researchers in this area remains limited. Citation analysis thus underscores the need for researchers to prioritise creating more impactful publications with higher citation potential, fostering further progress in this field.

**Table 11: The Top Five Occurrences' of Authors Based on Citation Frequency and Their Total Link Strength**

| RO | Author | Citation | Publication | Total Link Strength |
|---|---|---|---|---|
| 1 | Noseworthy, John H. | 1019 | 1 | 0 |
| 2 | Shanafelt, Tait D. | 1019 | 1 | 0 |
| 3 | Cameron, Judy L. | 679 | 1 | 0 |
| 4 | Heckman, James J. | 679 | 1 | 0 |
| 5 | Knudsen, Eric I. | 679 | 1 | 0 |




Source: Authors' Calculation based on Scopus database and VOSviewer.

Note: Network visualisation was based on author link weights.

**Fig. 10a: Citation Visualisation Map of Authors**

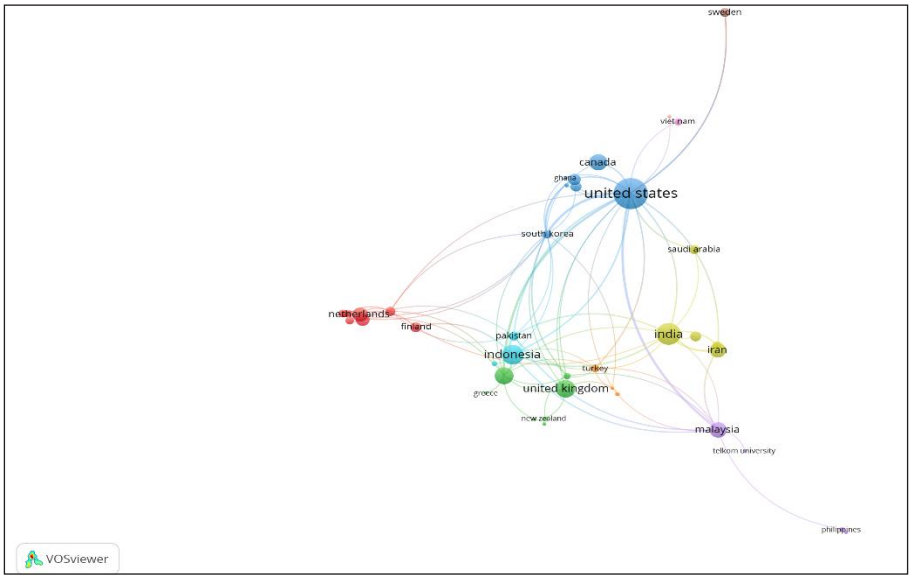
## Citation Network Based on Countries

Bibliographic data from the Scopus dataset was analysed using VOSviewer to create a citation network visualisation map for nations (Fig. 10b). For inclusion, each nation required at least one document and one reference. The analysis identified 41 countries grouped into 10 clusters. The map highlights the United States as the leader in research output, with 98 publications, 90 total links, and a link strength of 137. Table 12 presents the top five countries based on citation links.

As shown in Fig. 10b, the most frequently cited nations are developed countries, with the United States ranking first, followed by the Netherlands, the United Kingdom, Canada, and Australia. This highlights an opportunity for researchers from developing countries to make a greater impact in studies on QWL and its effects on performance, thereby improving their citation counts and enhancing global research visibility.

**Table 12: Top Five Countries and Citations Links**

| Sr. No. | Countries | Number of Publications | Total Citation | Total Link Strength |
|---|---|---|---|---|
| 1 | United States | 98 | 5927 | 48 |
| 2 | Netherlands | 21 | 2007 | 7 |
| 3 | United Kingdom | 32 | 1441 | 5 |
| 4 | Canada | 26 | 921 | 3 |
| 5 | Austria | 30 | 883 | 18 |




Source: Authors' Calculation based on Scopus Database and VOSviewer.

**Fig. 10b: Citation Visualisation Map Based on Countries**

## Conclusion

This study conducts a bibliometric analysis of prior research on advocacy in the context of QWL and its relationship to performance. Specifically, it examines research publications from 1974 to 2023 retrieved from the Scopus database. A total of 494 articles were extracted and analysed using bibliometric methods. Rather than simply reporting data from databases, the study employs performance analysis and network mappings and visualisation to illustrate the evolution of the literature in this field. The findings highlight significant progress in research on QWL and its connection to performance over the past 49 years, indicating a surge in studies addressing propaganda in this domain.

The study examines various indicators, such as leading authors, institutions, countries, co-occurrence of keywords, and collaboration patterns among authors and nations. It adopts a comprehensive and rigorous approach, utilising both performance and network analyses. Papers and journals from diverse disciplines, focusing on different aspects of QWL, provided the foundation for the study. The analysis identifies the United States, India, Indonesia and the United Kingdom as the top four nations contributing to this research area.

The results show that important research performance indicators, including publication trends, institutional contributions, and thematic analyses of topics and journals, are strongly interrelated. Keyword analysis reveals that studies on propaganda in QWL mainly concentrate on aspects like employee engagement, job satisfaction, stress, burnout, commitment, and performance evaluation. Prominent contributors to this field include Andersen, Niels Jorgen; Merrik, Joav; Ventegodt, Soren; Kandel, Isack; and Arronson, Neil K.

Spanning from 1974 to 2023, this study provides a comprehensive overview of scholarly developments and practical insights into all aspects of QWL and its relation to performance. It offers valuable information for researchers by exploring various themes and lines of inquiry in the field,

serving as a global resource for advancing understanding and research in this area.

## Limitations and Future Study Directions

This study presents a bibliometric analysis of all articles published in the journal from 1974 to 2023, aiming to track the evolution of its scientific contributions. Through performance analysis and scientific mapping of the journal's output over the past 49 years, the study addresses a gap in understanding its research progression. Notably, over half of the articles on QWL and its relationship with performance were published between 2011 and 2023, a period characterised by a significant rise in publications, citations, and author collaborations. The findings highlight a growing interest in this field in recent years.

The bibliometric analysis focused solely on empirical studies, excluding data from other sources such as WoS, PubMed, Google Scholar, etc. Future research may utilise these many databases, leading to a greater quantity of studies for analysis. It utilised the Scopus database exclusively for data extraction, and the findings are derived from publications indexed within that database. Articles were selected using specific keywords while excluding index keywords. Data processing was conducted using a single software tool, i.e., VOSviewer, which may influence the presentation of results if any other software tools are used. Utilising different software, databases, indexes, disciplines, or keywords could yield varying outcomes. Additionally, different tools, methods, or levels of author expertise might result in distinct clusters and research streams. The citation analysis in this study primarily emphasises quantity over quality.

As interest in QWL and its impact on performance continues to grow, the study recommends incorporating case-based practical perspectives to address challenges and enhance research in this area. Detailed insights and actionable recommendations are necessary to further advance the field. While this paper focuses specifically on QWL and its relationship with performance, future studies could explore the intersection of QWL with other areas, such as job satisfaction, work environment, or employee engagement, using similar methodologies. Overall, the study offers valuable insights to the scientific community, highlighting emerging trends and the significance of QWL in relation to performance.

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