

GLOBAL TRENDS AND PROSPECTS IN EMPLOYEE WELL-BEING RESEARCH: A BIBLIOMETRIC ANALYSIS FROM 1950 TO 2022

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Global Trends and Prospects in Employee Well-Being

Research: A Bibliometric Analysis From 1950 To

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Abstract: *A sustainable workforce depends on the health of its workers. To maintain a viable workforce, each organization must be concerned for its employee well-being. Nevertheless, the issues regarding employee well-being remain and it has called for more research on this topic. This article includes a bibliometric analysis of employee well-being that has been examined using the VOSviewer1.6.18 to assess the worldwide research trends, including the growth of publications, popular themes, publishing outputs by nations, and co-occurrences of author keywords. Searches were done in the article title using the keyword "Employee Well-being". This study retrieved 3,134 documents from the Scopus database. Data analysis tools used included data visualisation, citation metrics and frequency analysis. The results demonstrate a consistent increase in the number of research publications on employee well-being for the past 72 years since 1950. Researchers from the United States wrote the majority of the articles, followed by those from the United Kingdom, Australia, and Germany. India was the only Asian country listed among the top ten of the publication lists by country, which implies a scarcity of research on employee well-being by researchers from Asian countries. A closer look at the co-occurrences of author keywords revealed that the keyword "employee wellbeing" has the highest co-occurrences, which are 3568 links and the highest total link strengths, which are 2526 links. It can be concluded that future researchers could use the results from the analysis to explore research areas related to employee wellbeing.*

Keywords: *burnout, employee wellbeing, job satisfaction, stress, sustainable workforce, work engagement*

Introduction

Employee well-being has always been an important aspect of a sustainable workforce approach. A sustainable workforce refers to an environment that looks after its employees and is concerned about the employees' health and well-being (Kossek et al., 2014). Caring for employee well-being is an essential element in a successful organisation. Well-being can be defined as the experience of health, happiness, and prosperity, in addition to having a positive mental state, higher life satisfaction, a knowledge of life's meaning and purpose, and the ability to manage high levels of stress (Davis, 2019). Occasionally, well-being is generally a term used to describe a condition of an individual or a group's condition, economic, psychological, spiritual, or medical attention (Ionescu et al., 2014). Employee well-being is also contented with living and working conditions (Senthil, 2021).

A person must work to achieve life satisfaction, which forces them to spend most of their day at work. Consequently, it is not surprising that the workplace has always been associated with well-being and life happiness. Considering this, an organisation needs to foster a culture that prioritises the well-being of its employees. Senthil (2021) stated that employees can show their potential if the working environment is good. However, the issue regarding employee well-being being affected significantly by employees' mental health is getting hotly debated. Referring to statistics reported by Carolan et al., (2017), workers facing mental health issues due to the toxic workplace environment are increasingly worrying. Thus, in this investigation, stress, job satisfaction and workplace are listed as the top three on the list of author keywords in the publications related to "employee well-being". Bullying, incivility, ostracism, workload, lack of engagement between workers, and inflexible working hours contribute to a toxic environment that is the cause of employee well-being being affected (Rasool et al., 2021). Extended work experience will impact a person's health and well-being due to a toxic environment that will affect a person's health. Much worse, the victims also intended to leave their job and go through prolonged trauma. As mentioned by Hoel et al. (2001) people may become involved in stress, bullying, conflict, alcohol and drug abuse and mental health disorders at work if it is not recognised how crucial it is to make employees feel good about their work and lives.

Even though this topic has been studied for a long time; problems involving the well-being of employees remain constant; in fact, there is no shadow of a decline. Consequently, if authorities do not cooperate in preventing this issue, the case of employee wellbeing will persist. Furthermore, stigma and societal thinking still view the subject of the toxic environment and bullying, as an irrelevant matter. Not only that, but it has become a culture, for example, senior-junior bullying and top managers with subordinates. Referring to the discussion by Hakanen et al. (2018), employees who detest their jobs may experience burnout or work holism, whereas those who enjoy their jobs may feel fulfilled or engaged. Employees dealing with mental health issues are challenging to detect with the bare eye. This is because those with mental problems do not look like disabled, sick people but are still able to do work as usual. It is also agreed by Geldart et al. (2018), who stated that treating employees poorly will impact their health and well-being.

Those situations as presented above have given a motivation for this study which aims to analyze the trends and advances in the research related to employee wellbeing to help researchers recognize the holistic perspective of employee wellbeing research and subsequently strategize future research.

Literature Review

Many studies have reported that a competitive organisation that employs a sustainable workforce environment must prioritise employee wellbeing. To develop a sustainable workforce approach, the organisation should understand well about it. Well-being is an important aspect of a sustainable workforce approach. Well-being means to be happy, to have a sense of accomplishment in one's life, to have both excellent and negative emotional aspects, and to be content with one's circumstances, for instance, with work, private life, or health (Horváthová et al., 2021). Referring to Niemiec (2014), a person's subjective feelings of happiness or leading a good life in the pursuit of human greatness are referred to as their well-being. When the World Health Organization (WHO) (2020) defined health as a condition of optimum physical, mental, and social well-being rather than only the absence of disease or infirmity, there was a scholarly discussion about employee well-being. Moreover, the International Labor Organization also stated that the environment in which employees work, the culture at work, and how the employees feel about their day-to-day work could all be taken into account when determining an employee's well-being. This proves that having a healthy work environment allows an organisation to maintain and sustain the well-being of employees.

Employee well-being and happiness can be classified into two categories which are hedonic and eudemonic wellbeing, which can be described as functioning well and feeling good (Ryan & Deci, 2001). They also conclude that "Hedonic well-being ("happiness") relates to the evaluation of one's feelings toward life, such as life satisfaction." People's quality of life improves as they see their lives as more emotionally satisfying (Keyes, 2007). Self-actualization, emotional expression, and vitality are phenomenological sensations of this kind of living. Thus, lack of focus on workplace health is one of the leading causes of employee illness and, as a result, decreased employee productivity. In addition, due to a lack of understanding, apprehension and social stigma, this topic goes mostly unnoticed. Most of the organisation's higher management is also unaware of this problem or sometimes ignores it and refuses to admit that the problem exists (Rasool et al, 2021).

Employee well-being and job satisfaction are affected if they are in a toxic work environment (Geldart et al., 2018). Employee well-being and job satisfaction can be affected if they are not in a healthy working environment. Citing arguments from Wang et al. (2020), "A toxic workplace environment features narcissistic behaviour, offensive, and insulting leadership, threatening behaviour, harassment, humiliation, mobbing, ostracism, incivility, and bullying among employees". Those in a toxic work environment will have their mental health and wellbeing to be disrupted. The author argues that high levels of stress, burnout, and negative psychological consequences on the health of employees are caused by physical and mental imbalances. Moreover, Rasool et al. (2021) found in their research that a toxic workplace environment leads to adverse effects on employee outcomes, such as stress and disengagement. This is because if the victim is in an environment where they are not happy and comfortable continuously, the victim may get emotionally exhausted. Supported by a previous study, stress can have negative consequences and increase staff turnover as well (Dajnoki et al., 2020). When they experience emotional well-being disorders, they will eventually feel unmotivated, which leads to absenteeism and influence them to leave their job. When this happens, an organisation needs to manage a replacement which leads to a very high cost. Quoting arguments from the article written by Lee & Rhee (2022), "Although organisations can continue to operate by replacing those who have left, it eventually poses a high cost to an organisation and undermines their productivity in the long run". Every organisation needs to be aware of the importance of a sustainable workforce for the future, as emphasised as one of the strategic priorities stated by

the World Health Organization (WHO, 2020). However, awareness of employee well-being in terms of mental health in an organisation is still low. The management in the organisation seems to deny the issue, especially the critical person in the organisation, i.e., the top manager. Today, many employees face depression as a result of a workplace environment that does not care about employee wellbeing. Much worse, most depressed employees do not seek medical help because of the negative connotations surrounding the matter.

Therefore, this paper aims to describe the patterns of publication of employee well-being by conducting a bibliographic analysis using the Scopus database. To discover the most often cited works, publication trends, top nations, and finally the co-occurrence of the author's keywords, this study will analyse the various types of publications in terms of access type, language, topic matter, and source title. The significance of this study for future researchers is that it gives insight into the global research trends on “employee well-being” which provides directions for future research.

Methodology

This study employs bibliometric analysis that enables the researchers to evaluate the global research trends by analysing all the publication outputs within the Scopus database. As mentioned in previous studies by Yvonne (2020), Scopus is one of the most comprehensive databases of citations and abstracts for peer-reviewed publications, such as scientific journals, books, and conference proceedings. The data mining from the Scopus database was conducted on the 16th of June 2022. The query string used for the search was TITLE-ABS-KEY (employee wellbeing) and yielded 3,134 articles from the oldest publication in 1950 to publications in 2022. The Scopus search result was then analysed based on access type, year, country, subject area, language, and source title. In addition, the researchers also analysed citation scores for ranking purposes. Then, the search results of the citation, bibliographic, and abstract information were exported by using VOSViewer software. Using the software, the co-occurrences of the author keywords were analysed first to identify the item with the highest occurrence and second, to examine the item related to the strength of the link. PRISMA guidelines were adopted in this review to conduct a bibliometric analysis of research, as depicted in Figure 1 below.

The 3,134 documents that were retrieved from the Scopus index made up the data that was used for this analysis. The documents' author names, titles, publication dates, affiliations, and Scopus citation details were incorporated in these “meta-data”. Furthermore, Microsoft Excel software was used to conduct the frequency analysis, Harzing's Publish or Perish for citation metrics and analysis, and VOSviewer for data visualisation. Standard bibliometric variables used in this study to report the findings include publication growth, authorship patterns, collaboration, prolific authors, nation contribution, most active institutions, favourite journals, and most-cited papers.

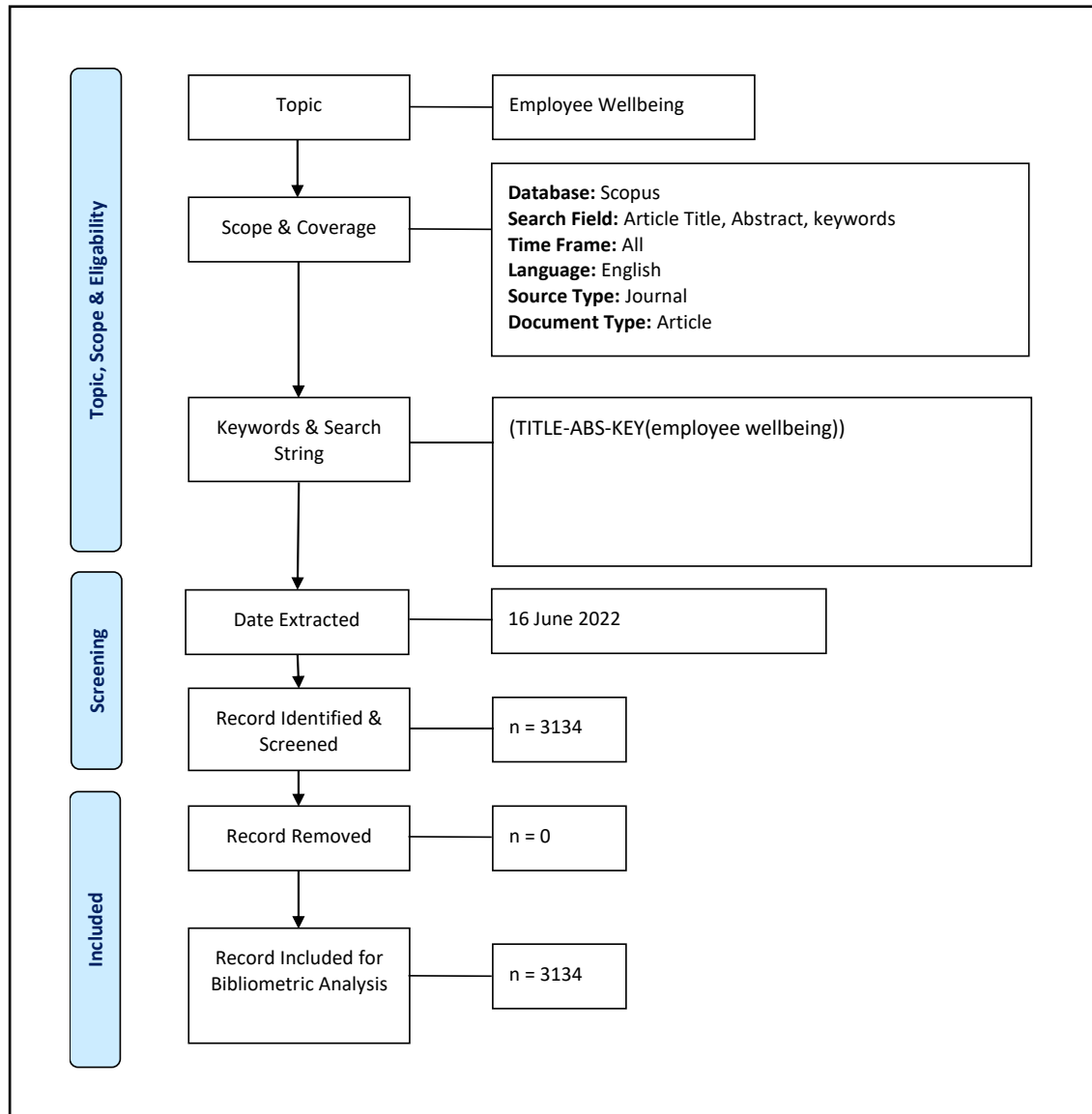


Figure 1: Flow diagram of the search strategy

Results and Discussion

The findings from the search analysis conducted using the Scopus database and the bibliometric analysis conducted using Microsoft Excel, Harzing's Publish or Perish and VOSViewer version 1.6.18 is presented in this section.

Document Profile

A document profile is a record and analysis of the characteristics of the document. In this study, a total of 3,134 documents were retrieved, most of which (2,449; 78.14%) were research articles. The second most common type of document was review articles, constituting 6.51% (204) of the total documents retrieved. Another type of documents is a conference paper, book chapter, note, editorial, short survey, book, letter, conference review, erratum, abstract report, and retracted. Details about the types of retrieved documents are shown in Table 1.

Table 1: Document Type

Document Type	Total Publications	Percentage (%)
Article	2449	78.14%
Review	204	6.51%
Conference Paper	187	5.97%
Book Chapter	128	4.08%
Note	49	1.56%
Editorial	47	1.50%
Short Survey	21	0.67%
Book	20	0.64%
Letter	17	0.54%
Conference Review	8	0.26%
Erratum	2	0.06%
Abstract Report	1	0.03%
Retracted	1	0.03%
Total	3134	100.00

Most retrieved documents were published in the English language (3015; 95.65%). Other commonly encountered languages included German (30; 0.95%), Italian (21; 0.67%), French (18; 0.57%) and Spanish (15, 0.48%). The top 20 languages are presented in Table 2 below.

Table 2: Languages

Language	Total Publications	Percentage (%)
English	3015	95.65%
German	30	0.95%
Italian	21	0.67%
French	18	0.57%
Spanish	15	0.48%
Russian	13	0.41%
Dutch	10	0.32%
Persian	6	0.19%
Chinese	4	0.13%
Polish	4	0.13%
Portuguese	4	0.13%
Croatian	2	0.06%
Lithuanian	2	0.06%
Turkish	2	0.06%
Arabic	1	0.03%
Bosnian	1	0.03%
Greek	1	0.03%
Hungarian	1	0.03%
Icelandic	1	0.03%
Slovak	1	0.03%
Total	3134	100.00

Most of the documents published are research related to the field of Medicine (1572; 50.16%). Other subject areas include Business, Management and Accounting (652; 20.80%), Environmental Science (285; 9.09%), Engineering (219; 6.99%) and Economics, Econometrics and Finance (167; 5.33%), Economics, Econometrics and Finance (386; 9.76%). Detail of the top 20 subject areas is presented in Table 3 below.

Table 3: Subject Area

Subject Area	Total Publications	Percentage (%)
Medicine	1572	50.16%
Business, Management, and Accounting	652	20.80%
Environmental Science	285	9.09%
Engineering	219	6.99%
Economics, Econometrics, and Finance	167	5.33%
Computer Science	130	4.15%
Arts and Humanities	126	4.02%
Health Professions	97	3.10%
Energy	74	2.36%
Decision Sciences	71	2.27%
Biochemistry, Genetics, and Molecular Biology	64	2.04%
Agricultural and Biological Sciences	53	1.69%
Multidisciplinary	41	1.31%
Mathematics	40	1.28%
Chemical Engineering	22	0.70%
Earth and Planetary Sciences	22	0.70%
Materials Science	11	0.35%
Immunology and Microbiology	7	0.22%
Chemistry	5	0.16%
Dentistry	3	0.10%

For the source type of publication, the analysis shows that the majority of publication sources retrieved were journals (2778; 88.64%), books (131; 4.18%), conference proceedings (129; 4.12%), book series (76; 2.43%) and followed by trade journal (18; 0.57%). Details about the source types of retrieved documents are shown in Table 4.

Table 4: Source Type

Source Type	Total Publications	Percentage (%)
Journal	2778	88.64%
Book	131	4.18%
Conference Proceeding	129	4.12%
Book Series	76	2.43%
Trade Journal	18	0.57%
Undefined	2	0.06%
Total	3,134	100.00%

Research Trends Analysis

The highest productivity was observed in 2021, with a total of 448 documents, and the lowest productivity was from 1950 until the year 1987, with only one publication. The quantity of documents throughout the study period has increased for 20 years, as shown in Figure 2. The documents released in 2008 had the most citations per publication (2032), whereas those produced in 1950, 1974, 1978, 1981, and 1986 had the least number of citations (zero) because of the short period that had passed since their publishing. Table 5 below provides information on the citation matrix for retrieved documents by year for 30 years.

Table 5: Year of Publication

Year	TP	NCP	TC	C/P	C/CP	<i>h</i>	<i>g</i>
2022	214	44	105	0.49	2.39	4	7
2021	448	262	1056	2.36	4.03	12	19
2020	350	286	2835	8.10	9.91	22	40
2019	311	255	2764	8.89	10.84	25	37
2018	262	223	2855	10.90	12.80	26	40
2017	200	172	3247	16.24	18.88	28	49
2016	168	150	3357	19.98	22.38	29	52
2015	142	117	2015	14.19	17.22	25	40
2014	112	112	2158	19.27	19.27	28	43
2013	122	103	3314	27.16	32.17	30	55
2012	88	71	2442	27.75	34.39	27	48
2011	95	88	3242	34.13	36.84	29	55
2010	62	51	1866	30.10	36.59	22	43
2009	66	54	2092	31.70	38.74	25	45
2008	45	39	2032	451.82	521.33	21	45
2007	55	43	2108	38.33	49.02	19	43
2006	62	52	2621	42.27	50.40	24	51
2005	63	53	4089	64.90	77.15	28	53
2004	49	41	2568	52.41	62.63	22	49
2003	35	31	1339	38.26	43.19	18	31
2002	23	18	1066	46.35	59.22	13	18
2001	23	21	1222	53.13	58.19	14	21
2000	13	12	981	75.46	81.75	9	12
1999	16	12	1590	99.38	132.50	9	12
1998	16	14	274	17.13	19.57	8	14
1997	15	13	570	38.00	43.85	8	13
1996	12	12	528	44.00	44.00	8	12
1995	12	10	664	55.33	66.40	7	10
1994	13	13	803	61.77	61.77	9	13
1993	7	3	44	6.29	14.67	2	3

Notes: TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; *h*=*h*-index; and *g*=*g*-index.

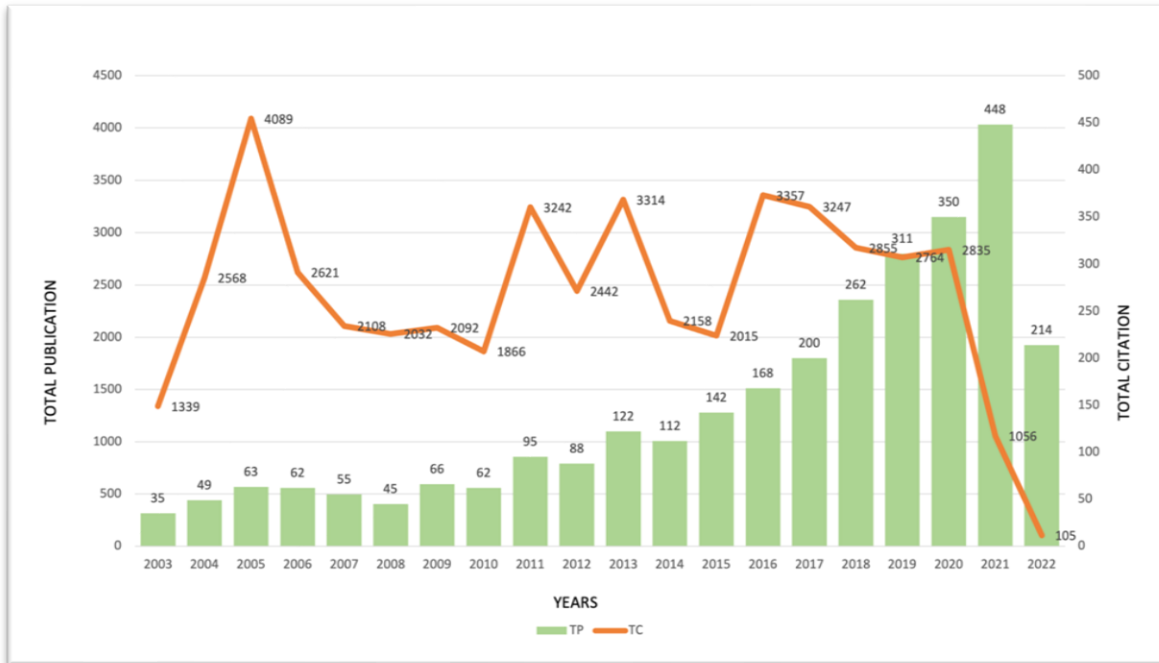


Figure 2: Research Trends 2003-2022

Geographical Distribution of Publications Analysis

Researchers from 41 different nations contributed to the release of the documents that were found. Table 6 lists the top 20 nations that contributed to the publications. With a total of 766 (26.44%) documents, the United States of America came out on top, followed by the United Kingdom (452; 11.88%) and China (317; 8.01%). Canada (236; 5.97%) and Australia (244; 6.17%). Figure 3 shows the map that displays 41 nations divided into five groups, each of which is represented by a distinct colour.

Table 6: The top 20 Countries contributed to the publications

Country	TP	NCP	TC	C/P	C/CP	h	g
United States	766	629	16554	21.61	26.32	62	105
United Kingdom	452	370	12037	26.63	32.53	54	98
Australia	325	276	6049	18.61	21.92	44	64
Germany	184	155	4352	23.65	28.08	29	62
Netherlands	169	149	8964	53.04	60.16	47	93
Finland	136	115	4017	29.54	34.93	32	61
Canada	135	116	3512	26.01	30.28	29	57
Italy	133	100	1257	9.45	12.57	20	31
India	107	54	621	5.80	11.50	12	24
Sweden	105	93	2503	23.84	26.91	27	48
Spain	98	82	1308	13.35	15.95	21	33
China	87	68	970	11.15	14.26	17	28
South Africa	83	66	1027	12.37	15.56	17	30
Belgium	57	49	1109	19.46	22.63	17	32
Malaysia	57	26	153	2.68	5.88	7	10
Denmark	56	42	2338	41.75	55.67	19	42
France	56	41	475	8.48	11.59	11	20
New Zealand	56	46	1298	23.18	28.22	20	35
Norway	50	40	815	16.30	20.38	13	28
Switzerland	47	39	608	12.94	15.59	13	24

Notes: TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; and g=g-index.

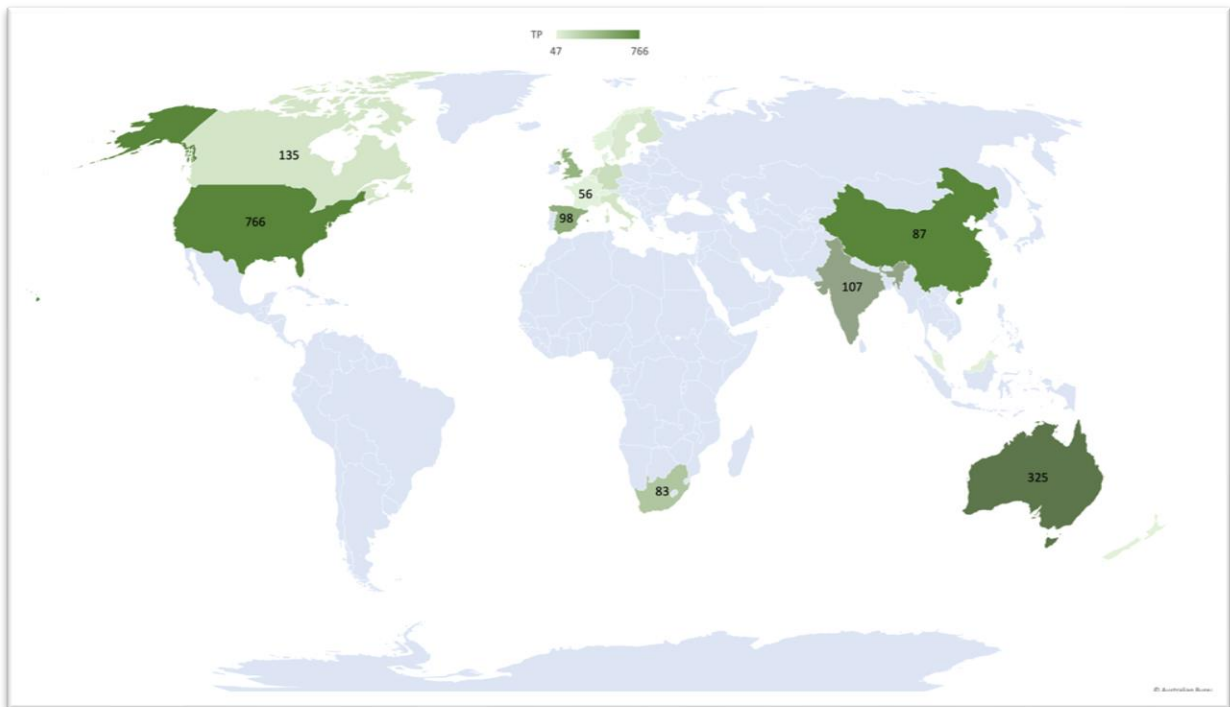


Figure 3: Geographical Distribution of Publications

Authorships and Affiliations Analysis

The most significant institution had at least five publications, which can be seen in Table 7. With a total of 49 publications (1.56%), the Department of Occupational Health in Finland is the most productive institution in the sector. Following this was the University of Queensland (32; 1.02%), K.U. Leuven (37; 01.18%), University of Utrecht (34; 1.08%), and Tampere University (40; 1.28%).

Table 7: Most influential institutions with a minimum of five publications

Affiliation	TP	%	NCP	TC	C/P	C/CP	<i>h</i>	<i>g</i>
Dept. of Occupational Health, Finland	49	1.56	48	2362	48.20	49.21	19	48
Tampere University	40	1.28	36	825	20.63	22.92	16	28
K.U. Leuven	37	1.18	35	1005	27.16	28.71	16	31
University of Utrecht	34	1.08	33	2373	69.79	71.91	25	33
The University of Queensland	32	1.02	29	1129	35.28	38.93	16	29
University of Helsinki	31	0.99	28	709	22.87	25.32	13	26
Monash University	29	0.93	26	570	19.66	21.92	11	23
University of Melbourne	28	0.89	26	612	21.86	23.54	13	24
University of Michigan, Ann Arbor	26	0.83	24	1343	51.65	55.96	13	24
The University of Sydney	25	0.80	23	571	22.84	24.83	13	23
Griffith University	25	0.80	19	273	10.92	14.37	9	16
Deakin University	24	0.77	20	549	22.88	27.45	12	20
The University of Sheffield	23	0.73	20	1153	50.13	57.65	11	20
The University of Manchester	23	0.73	22	1399	60.83	63.59	12	22
University of Turin	23	0.73	19	193	8.39	10.16	8	13

Notes: TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; *h*=*h*-index; and *g*=*g*-index.

As summarised in Table 8 below, the most productive author is Cooper, C.L. (Alliance Manchester Business School, Manchester) and Kinnunen, U. (Tampere University, Tampere Johns Hopkins Bloomberg School of Public Health, Institute for Health and Productivity Studies, Baltimore) with a total of 16 publications (0.51%). Cooper, C.L. still holds the record for having the most papers quoted about him. Other productive authors in the area include Goetzel, R.Z. (15: 0.48%). Nielsen, K. (15; 0.48%), Pope, J.E. (14; 0.45%) and Taris, T.W. (14;0.45%).

Table 8: Most Productive Authors

Author Name	Affiliation	TP	NCP	TC	C/P	C/CP	h	g
Cooper, C.L.	Alliance Manchester Business School, Manchester	16	14	1241	77.56	88.64	9	14
Kinnunen, U.	Tampere University, Tampere	16	16	697	43.56	43.56	11	16
Goetzel, R.Z.	Johns Hopkins Bloomberg School of Public Health, Baltimore	15	13	563	37.53	43.31	10	13
Nielsen, K.	Sheffield University Management School, Sheffield	15	13	709	47.27	54.54	9	13
Pope, J.E.	Healthways, Inc, Nashville	14	13	314	22.43	24.15	9	13
Taris, T.W.	Utrecht University, Health, and Organizational Psychology, Utrecht	14	13	813	58.07	62.54	11	13
Bakker, A.B.	Erasmus University Rotterdam, Rotterdam	13	13	1540	118.46	118.46	12	13
Schaufeli, W.B.	K.U. Leuven, Research Unit Occupational & Organizational Psychology and Professional Learning, Utrecht	13	13	1379	106.08	106.08	12	13
Blake, H.	University of Nottingham, Birmingham	12	12	440	36.67	36.67	7	12
Cortese, C.G.	University of Turin, Turin	11	10	1540	140.00	154.00	12	13
De Witte, H.	K.U. Leuven, Research Unit Occupational & Organizational Psychology and Professional Learning, Utrecht	11	10	245	22.27	24.50	6	10
Kompier, M.A.J.	Radboud Universiteit, Nijmegen	11	11	966	87.82	87.82	11	11
Merrill, R.M.	Brigham Young University, Provo	10	10	235	23.50	23.50	7	10
Hakanen, J.J.	Finnish Institute of Occupational Health, Helsinki	9	9	655	72.78	72.78	7	9
Peiró, J.M.	Valencian Institute of Economic Research, Valencia	9	9	156	17.33	17.33	6	9
Brunetto, Y.	School of Business and Tourism, Lismore	8	6	54	6.75	9.00	4	6
Coberley, C.R.	Concert Genetics, Inc, Franklin	8	7	222	27.75	31.71	6	7
Demerouti, E.	University of Johannesburg, South Africa	8	8	524	65.50	65.50	7	8
Ghislieri, C.	University of Turin, Turin	8	8	91	11.38	11.38	5	8

Notes: TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; and g=g-index.

Source Title Analysis

Table 9 highlights the top 20 journals that have published research on employee well-being in the section of the Source title analysis. The International Journal of Environmental Research and Public Health came out top of the list with 157 documents (5.01%), followed by the Journal of Occupational and Environmental Medicine came in second with 113 (3.60%). Next on the list is the Journal of Occupational Health Psychology with 84 documents (2.68%), Work and Stress with 56 documents (1.79%) and the International Journal of Workplace Health Management with 41 documents (1.31%).

Table 9: Most Active Source Title

Source Title	TP	TC	Publisher	Cite Score	SJR 2021	SNIP 2021
International Journal of Environmental Research and Public Health	157	1304	Multidisciplinary Digital Publishing Institute (MDPI)	4.5	0.814	1.44
Journal Of Occupational and Environmental Medicine	113	3069	Wolters Kluwer Health	3.3	0.732	0.96
Journal Of Occupational Health Psychology	84	6698	APA	12.4	3.014	3.404
Work And Stress	56	5273	Taylor & Francis	10	2.422	3.097
International Journal of Workplace Health Management	41	358	Emerald	1.8	0.393	0.615
Plos One	36	843	Public Library of Science	5.6	0.852	1.368
Work	34	501	IOS Press	2	0.437	0.872
Occupational Health	33	13	Royal College of Nursing	0.1	0.108	0.11
Stress And Health	33	664	Wiley-Blackwell	5.2	1.025	1.673
Sustainability Switzerland	33	208	Multidisciplinary Digital Publishing Institute (MDPI)	5.0	0.664	1.31
American Journal of Health Promotion	31	961	SAGE	4.8	0.807	1.16
Frontiers In Psychology	29	228	Frontiers Media S.A.	4	0.873	1.605
BMC Public Health	27	277	Springer Nature	4.9	1.156	1.703
Population Health Management	25	326	Mary Ann Liebert	3.3	0.685	0.831
Journal Of Happiness Studies	22	401	Springer Nature	5.9	1.185	2.209
Human Resource Management International Digest	21	10	Emerald	0.5	0.139	0.153
International Journal of Human Resource Management	20	321	Journal	7.8	1.544	2.264
Occupational Medicine	19	566	Oxford University Press	4.3	0.701	1.149
Social Science and Medicine	19	1324	Elsevier	6.9	1.806	2.249
Journal Of Applied Psychology	18	396	APA	10.6	6.445	4.251
Advances In Intelligent Systems and Computing	17	33	Springer Nature	0.9	0.215	0.307

Notes: TP=total number of publications; TC=total citations

A network visualisation map for co-occurrence analysis for journals with a minimum of five citations is shown in Figure 4 below. The most connecting lines from other journals were obtained by the Journal of Occupational Health Psychology, showing that it was often mentioned in other publications. In addition, this publication had the biggest circle size, indicating that it had the most citations for employee well-being research.

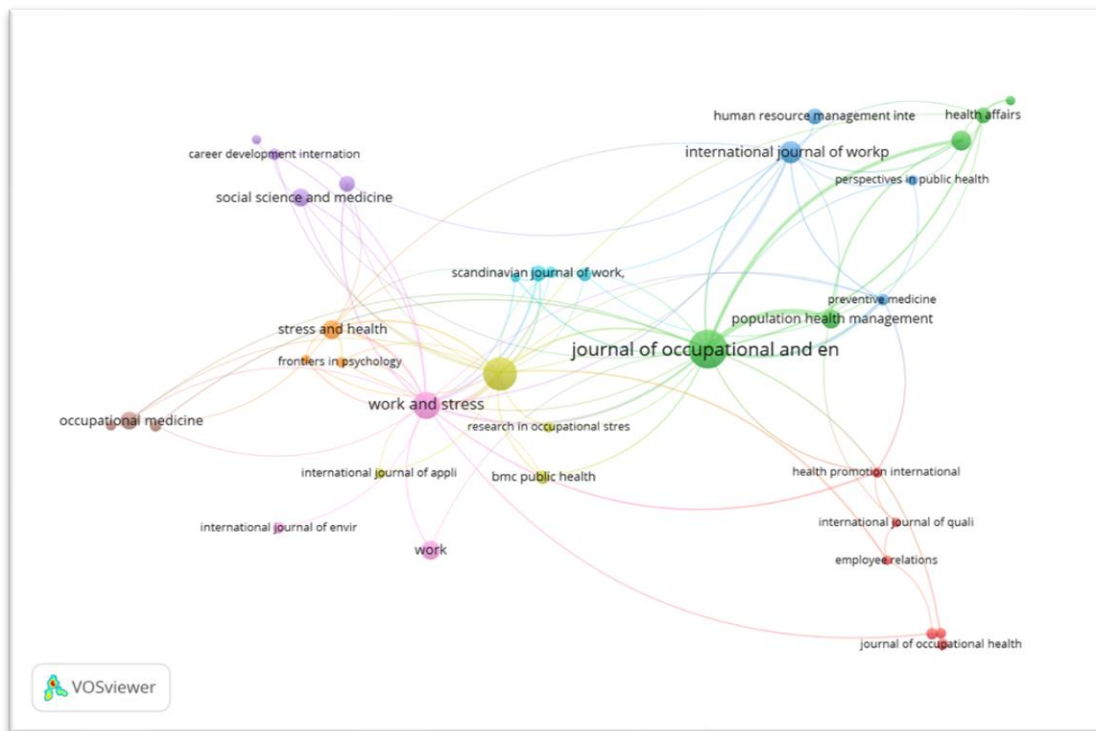


Figure 4: VOSviewer visualisation of a term co-occurrence network based on journal (Full counting)

Citation Analysis

Citation analysis is the process of calculating the number of times a particular author, article, or publication has been cited in other works to assess the relative significance or impact of those things. This study analysed employee well-being-related documents found in the Scopus database. The metrics for citations are shown in Table 10 below. From the database, 3,134 documents containing articles tagged “Employee well-being” and published between 1950 and 2023 were found. For all of these papers, there were 57087 citations overall.

Table 10: Citations Metrics

Metrics	Data
Papers	3,134
Number of Citations	57,087
Years	72
Citations Per Year	792.88
Citations per Paper	18.22
Cites Author	22,199.64
Papers Author	1,296.22
Authors Paper	3.42
h index	104
g index	169

The top 20 cited articles related to employee well-being are shown in Table 11. The article that received the highest citation, “Managing Cancer Care during the COVID-19 Pandemic: Agility and Collaboration Toward a Common Goal”, authored by M. Ueda, R. Martins, P.C. Hendrie, T. McDonnell, J.R. Crews, T.L. Wong, B. McCreery, B. Jagels, A. Crane, D.R. Byrd, S.A. Pergam, N.E. Davidson, C. Liu, F.M. Stewart was published in Journal of the National Comprehensive Cancer Network (JNCCN) in 2020. This article received a total of 332 citations and was the most impactful article based on the citation per year (166 citations/y). This is followed by the article “Mitigating the psychological impact of covid-19 on healthcare workers: A digital learning package”, authored by .K. Brooks, R. Dunn, R. AmlÃ´t, G.J. Rubin, N. Greenberg (259; 64.75 citations/y), “A Systematic, Thematic Review of Social and Occupational Factors Associated with Psychological Outcomes in Healthcare Employees during an Infectious Disease Outbreak”, authored by H. Blake, F. Bermingham, G. Johnson, A. Tabner (224; 112 citations/y), “The job demands-resources model: A meta-analytic review of longitudinal studies” authored by T. Lesener, B. Gusy, C. Wolter, (174; 58 citations/y) and “The influence of social distancing on employee wellbeing: a conceptual framework and research agenda” authored by Z. Song, K. Baicker (106; 35.33 citations/y).

Table 11: Top 20 Highly cited articles

No.	Authors	Title	Year	Cites	Cites per Year
1	M. Ueda, R. Martins, P.C. Hendrie, T. McDonnell, J.R. Crews, T.L. Wong, B. McCreery, B. Jagels, A. Crane, D.R. Byrd, S.A. Pergam, N.E. Davidson, C. Liu, F.M. Stewart	Managing Cancer Care during the COVID-19 Pandemic: Agility and Collaboration Toward a Common Goal	2020	332	166
2	H. Blake, F. Bermingham, G. Johnson, A. Tabner	Mitigating the psychological impact of covid-19 on healthcare workers: A digital learning package	2018	259	64.75
3	Brooks, S.K., Dunn, R., Amlõt, R., Rubin, G.J., Greenberg, N.	A Systematic, Thematic Review of Social and Occupational Factors Associated with Psychological Outcomes in Healthcare Employees during an Infectious Disease Outbreak	2020	224	112
4	Lesener T, Gusy B, Wolter C	The job demands-resources model: A meta-analytic review of longitudinal studies	2019	174	58
5	Tuzovic S, Kabadayi S	The influence of social distancing on employee wellbeing: a conceptual framework and research agenda	2019	106	35.33

6	Ipsen Cvan, Veldhoven M, Kirchner K, Hansen J	Six key advantages and disadvantages of working from home in Europe during covid-19	2018	87	21.75
7	Song Z, Baicker K	Effect of a Workplace Wellness Program on Employee Health and Economic Outcomes: A Randomised Clinical Trial	2019	86	28.67
8	Rasool S, Wang M, Tang M, Saeed A, Iqbal J	How toxic workplace environment effects employee engagement: The mediating role of organisational support and employee wellbeing	2019	74	24.67
9	M.K. Al-Hanawi, M.L. Mwale, N. Alshareef, A.M.N. Qattan, K. Angawi, R. Almubark, O. Alsharqi	Psychological distress amongst health workers and the general public during the COVID-19 pandemic in Saudi Arabia	2018	74	18.5
10	Scanlan J, Still M	Relationships between burnout, turnover intention, job satisfaction, job demands and job resources for mental health personnel in an Australian mental health service	2018	60	15
11	Kelly L, Gee P, Butler R	Impact of nurse burnout on organisational and position turnover	2020	58	29
12	Chawla N, MacGowan R, Gabriel A, Podsakoff N	Unplugging or staying connected? Examining the nature, antecedents, and consequences of profiles of daily recovery experiences	2020	56	28
13	Chawla N, MacGowan R, Gabriel A, Podsakoff N Nayal P, Pandey N, Paul J	Covid-19 pandemic and consumer- employee-organisation wellbeing: A dynamic capability theory approach	2018	56	14
14	Cooper B, Wang J, Bartram T, Cooke F	Well-being-oriented human resource management practices and employee performance in the Chinese banking sector: The role of social climate and resilience	2021	54	54
15	Song Y, Gao J	Does Telework Stress Employees Out? A Study on Working at Home and Subjective Wellbeing for Wage/Salary Workers	2018	51	12.75
16	Ho H, Kuvaas B	Human resource management systems, employee well-being, and firm performance from the mutual gains and critical perspectives: The wellbeing paradox	2018	50	12.5

17	Charoensukmongkol P, Phungsoonthorn T	The effectiveness of supervisor support in lessening perceived uncertainties and emotional exhaustion of university employees during the COVID-19 crisis: the constraining role of organisational intransigence	2018	49	12.25
18	Smith M, Smit I, Swemmer L, Mokhatla M, Freitag S, Roux D, Dziba L	Sustainability of protected areas: Vulnerabilities and opportunities as revealed by COVID-19 in a national park management agency	2020	48	24
19	Pamidimukkala, A., Kermanshachi, S.	Impact of Covid-19 on field and office workforce in construction industry	2018	48	12
20	Robbins J, England E, Patel M, DeBenedectis C, Sarkany D, Heitkamp D, Milburn J, Kalia V, Ali K, Gaviola G, Ho C, Jay A, Ong S, Jordan S	COVID-19 Impact on Well-Being and Education in Radiology Residencies: A Survey of the Association of Program Directors in Radiology	2020	47	23.5

Keywords Analysis

A keyword analysis is a method that determines which keywords and search phrases are most frequently used in an article by reviewing and analysing the ones that are present in the content. After the core search, query-related keywords were eliminated, the author keywords with the highest frequency were those with a minimum of five occurrences, including human, wellbeing, article, humans, employee, female, male, adult, workplace, controlled study, occupational health, questionnaire, job satisfaction, and middle age. This study applied the author keywords as the unit of analysis, full counting, a term must appear a minimum of 5 times, and a cluster must contain a minimum of 5 nodes.

Table 13: Top Keywords

Author Keywords	Total Publications	Percentage (%)
Human	1866	59.54%
Wellbeing	1791	57.15%
Article	1384	44.16%
Humans	1135	36.22%
Employee	1094	34.91%
Female	1062	33.89%
Male	1026	32.74%
Adult	1012	32.29%
Workplace	752	23.99%
Controlled Study	571	18.22%
Occupational Health	550	17.55%
Questionnaire	516	16.46%
Job Satisfaction	511	16.31%

Author Keywords	Total Publications	Percentage (%)
Middle Aged	511	16.31%
Psychology	413	13.18%
Health Promotion	383	12.22%
Major Clinical Study	370	11.81%
Human Experiment	365	11.65%
Mental Health	332	10.59%
Priority Journal	311	9.92%

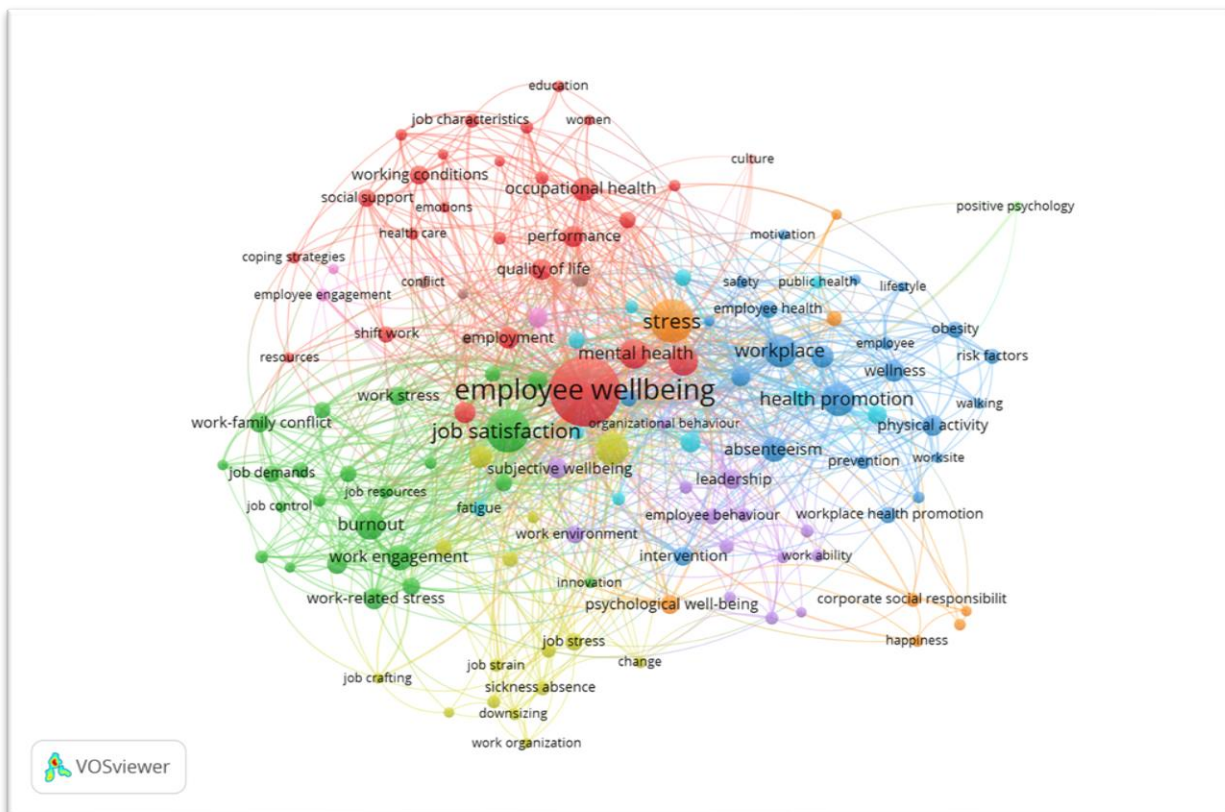


Figure 5: VOSViewer visualisation of a term co-occurrence network based on Author keywords

Figure 5 above depicts a network visualisation map of the author's keywords. The circles in the same colour cluster suggest a similar topic among the publications. Each represents a subfield of the field of employee well-being research. The total of 128 items has been divided into 11 clusters. The red cluster is the largest originated by the keyword "employee well-being" and has 184 occurrences, followed by Stress (71 occurrences), job satisfaction (70 occurrences), workplace (42 occurrences), and health promotion (41 occurrences). Cluster 1 (Red, 28 items) is related to other keywords such as coping strategies, education, emotional intelligence, Emotional Labor, emotions, and employee well-being. Cluster 2 (Orange, 23 items) is related to keywords such as burnout, depression, emotional exhaustion, innovation, job control, job demands, job demands-resources, etc. Cluster 3 (Green, 23 items) is related to other keywords such as absenteeism, employee, employee health, evaluation, exercise, health promotion, healthcare, etc. Cluster 4 (Blue, 15 items) is related to other keywords such as change, coping, downsizing, exhaustion, gender, health, job crafting, etc. Cluster 5 (Blue, 14 items) is related to other keywords such as communication, employee attitudes, employee behaviour,

empowerment, justice, leadership, managers, etc. Cluster 6 (Turquoise, 10 items) is related to other keywords such as bullying, fatigue, occupational health and safety, organisational culture, personal health, public health, workplace bullying, etc. Cluster 7 (Orange, 8 items) is related to other keywords such as corporate social responding, happiness, management, organisational wellbeing, psychological wellbeing, Stress, survey, etc. Cluster 8 (Dark purple, 4 items) is related to other keywords such as conflict, engagement, family, and satisfaction. Cluster 9 (Pink, 3 items) is related to other keywords such as career satisfaction, employee engagement, and human resources management. Cluster 10 (Orange, 1 item) is related to other keywords such as culture. Cluster 11 (Green) item is positive psychology.

Conclusion

The investigation of employee well-being shows studying how employee well-being can be used to make a sustainable workforce is an important topic that needs to be investigated more. To create a healthy work environment for the future. The data mining was collected by using bibliometric analysis, showing that 3,134 documents were retrieved from the Scopus database. We analysed that research articles were the majority of the documents published. Moreover, the most document published were in the English language and is related to the field of Medicine. The results of the research trends analysis show an increasing trend of publications starting from the year 2015 to 2021. Where in 2003, the total number of publications was 35 while publications in the year 2021 increased to 448 publications. The results from the study also show that the United States of America was the most significant contributor to research related to employee well-being followed by the countries the United Kingdom, Australia, Germany, Netherlands, Finland, Canada, Italy, India, Sweden, and Spain. Malaysia has recorded only 57 publications in total. This show that publication related to employee-wellbeing written by authors from Malaysia is still scarce. Furthermore, the Institute of Occupational Health was listed as the most productive institution related to this area, with 49 total publications. The most productive author is Cooper, C.L. from the Alliance Manchester Business School, Manchester. The International Journal Of Environmental Research And Public Health remained the primary source of titles related to employee well-being research with 157 of the total publications. To sum up, it has been observed that the increasing number of research on employee wellbeing area. This study can provide comprehensive information for future researchers to better understand the development trends of research related to employee wellbeing.

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