

## **Bibliometric Analysis of Mindfulness Articles in Management Literature**

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### **Abstract**

The subject of mindfulness in management has become more prevalent in recent years. To understand this area better, a bibliometric analysis was conducted on 597 articles from the Web of Science database. The analysis identified the distribution of articles by year and the most influential authors, journals, and countries. The analysis also looked at frequently occurring keywords and thematic clusters to gain insight into this field's most used terms. Furthermore, the articles published in countries with significant Buddhist populations in Asia were compared with those in other regions, such as Anglo, Latin American, European, Middle Eastern, and African countries. The research also explored various theories that explain mindfulness in management and examined the impact of the COVID-19 pandemic on the growing interest in this topic. Based on the research results, predictions were made about the future of this field, and potential areas for future research were suggested.

**Keywords:** Mindfulness, Management, Bibliometric Analysis, Buddhist Countries, COVID-19

**JEL Classification:** M10, M12

### **1. Introduction**

The practice of mindfulness is highly valued in Buddhist monastic life and has been refined over 2,500 years of Buddhist history. This concept involves being aware of the cognitive process of perceiving external stimuli such as sight, texture, sound, and smell, and assigning appropriate meanings to them to make informed decisions. Mindful individuals can detect abnormal environmental changes quickly and easily (Song, 2020, p. 3001). Mindfulness is defined as bringing one's attention to the present moment in a non-judgmental or accepting way. It involves being aware of both inner experiences (emotions, thoughts, and behavioral intentions) and

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external events, and focusing on moment-to-moment experiences rather than dwelling on the past or fantasizing about the future (Hülshager et al., 2013, p. 311). Mindfulness is a personal characteristic that can affect how one perceives and responds to adversity in their environment (Tulucu et al., 2022, p. 134). It may be necessary for disengaging from automatic thoughts, habits, and unhealthy behavior patterns according to Brown and Ryan (2003, p. 823). Mindfulness can contribute to happiness and well-being by enhancing the clarity and vividness of experiences. Studies have shown that mindfulness meditation can improve attention, memory, emotional regulation, positive emotions, self-concept, and overall well-being. It has also been found to reduce anxiety, negative emotions, negative personality traits, stress, and chronic pain in individuals (Wang et al., 2021, p. 1064).

The mindfulness-based stress reduction (MBSR) program (Kabat-Zinn, 1982), which adapted Buddhist techniques into a secular therapeutic intervention in the 1980s, sparked the interest of researchers across disciplines to study these meditative practices (Baminiwatta & Solangaarachchi, 2021). The proven benefits of mindfulness on mental and physical health have also attracted the attention of organizational researchers, leading to its discussion in the Management and Organization literature.

*Mindfulness at work* has been defined as “a psychological state in which employees intentionally give their full attention to the present moment while performing their job tasks” (Zivnuska et al., 2016, p. 106). Research suggests that mindfulness can lead to favorable job outcomes such as increased engagement, satisfaction, job performance, leadership abilities, and better mental health. Additionally, mindfulness is linked to decreased negative job outcomes such as anxiety, burnout, distress, emotional exhaustion, and the intention to leave (Zesjan et al., 2022). For example, Avey, Wernsing, and Luthans (2008) found that mindfulness interacts with psychological capital in predicting employees’ positive emotions. Similarly, Glomb et al. (2011, p. 127) stated that “the mental and neurobiological processes associated with mindfulness and mindfulness-based practices lead to more distal processes that influence employees’ ability to effectively regulate their thoughts, behaviors, and emotions at work.” Accordingly, the authors suggested that ‘emotional regulation,’ one of the mindfulness-based processes, would have potential work-related consequences, such as improved communication, better coping with stressful situations, faster recovery from adverse events, and fewer accidents. In addition, Hülshager et al. (2013) found that mindfulness reduces emotional exhaustion and increases job satisfaction.

In those years, some authors emphasized that the research on mindfulness in the management literature needed to be adequate or tried to draw attention to the missing points. For example, Dane (2011) stated that although mindfulness has attracted scientific interest in many disciplines, such as psychology and psychiatry, research on this subject in management is limited. Similarly, Hülshager et al. (2013) stated that although empirical studies on mindfulness have attracted attention in the industrial and organizational literature in recent years, they still need to be

increased. Emphasizes that mindfulness is an essential factor for a sustainable organization, and Weick and Putnam (2006) pointed out that mindfulness processes for organizations need to be better defined.

In the following years, there has been an increase in academic and business interest in the subject, and researchers have begun to consider the relationship of mindfulness with different variables. For example, Zivnuska et al. (2016) determined that mindfulness in the workplace reduces psychological distress by increasing the work-life balance, increasing the employees' affective commitment to the organization, and decreasing the intention to leave. In addition, the same study stated that mindfulness had a similar effect by increasing work engagement and job satisfaction. In Lippincott's (2018) in-depth interviews with 42 senior managers from 10 countries, the participants stated that mindfulness improves the leader's effectiveness by influencing behavior development and increasing awareness. As a result of the research, the perception that mindfulness also increases cognitive function and contributes to developing emotional intelligence competencies associated with leadership performance has emerged.

Hafenbrack et al. (2020) found that daily mindful exercises focusing on the present moment with a non-judgmental approach increase prosocial behaviors. Accordingly, the increase in the mindfulness level of the employees leads them to think of other people more and makes them more helpful. Sahin et al. (2020) conducted a study with 398 nurses from different hospitals in Turkey. They found that thriving, one of the most critical elements in the professional development of nurses, has a mediating role between employee mindfulness and contextual performance. In other words, the development levels of nurses with high mindfulness levels also increase, which enables them to engage in more out-of-role behaviors.

Research by Baas, Neuvicka, and Velden (2020) demonstrated that mindfulness can increase the originality of ideas. They conducted two studies with 88 and 68 groups respectively and found that mindfulness had a positive impact on the number of creative ideas generated. Michel et al. (2021) conducted a three-week mindfulness intervention and discovered that participants experienced improved sleep quality, decreased fatigue, and increased work engagement and hope. Similarly, in a study of 481 employees from South Korea, Park and Nam (2020, p. 129) found that mindfulness can help employees cope with burnout more effectively by reducing the impact of role conflict on negative affect. Johnstone and Wilson-Prangley (2021) also found that mindfulness is associated with key aspects of adaptation, such as learning and problem-solving, and that it can positively impact adaptability in dynamic working conditions. These findings suggest that mindfulness is a valuable tool for managing stress and promoting overall well-being in the workplace.

On the other hand, the authors found no relationship between interpersonal and cultural adaptability and mindfulness. One of the interesting findings about mindfulness was obtained from five experiments by Hafenbrack and Vohs (2018). These experiments revealed that mindfulness, which focuses on the present

moment, reduces motivation to tackle mundane and pleasant tasks. The researchers explained that mindfulness had this effect by lowering levels of focus, arousal toward the future, and focusing on the present moment.

Our study aims to uncover the structure of the mindfulness phenomenon in management. We will analyze changes in interest over the years and explore the potential impact of the COVID-19 pandemic on this trend. Additionally, we will examine key concepts and theories from relevant literature, identify the most significant studies and influential authors, journals, and countries, and determine the most commonly studied management topics and theories. To achieve these goals, we will address the following research questions (RQ):

RQ1: What is the current publication and citation trend in the management field about mindfulness?

RQ2: Which are the most influential articles in this field?

RQ3: Which are the most prolific and influential journals in this field?

RQ4: Which are the most prolific and influential countries in this field, and what is the country collaboration trend?

RQ5: Who are the most prolific and influential authors, and what is the author collaboration trend?

RQ6: What are the common research themes among researchers and countries in this field, and is COVID-19 one of these themes? Which theories and types of mindfulness are mentioned in the studies?

RQ7: Do articles in Buddhist Asian countries cover different topics than articles in other cultural regions?

We plan on conducting a systematic literature review using bibliometric network analysis to address the above questions. We hope that the results of this study can aid academics in understanding the current research framework of the subject and provide insight into the progression of different themes in this field.

## **2. Research Methodology**

For our research, we will be using bibliometric analysis, which is a quantitative research method that's best suited for studying the conceptual structure of a research area. It's an effective way to identify the current state of research and future avenues, (Kumar et al., 2020, p. 538) and it's particularly useful in describing the structure and evolution of a research field over time. By using bibliometric analysis, we can identify topic clusters, author networks, literature gaps, and academic silos (Block & Fisch, 2020, p. 307). Bibliometrics was first defined by Pritchard in 1969 as the application of mathematical and statistical methods to books and other communication tools. Nowadays, it's commonly used to examine trends in the literature (Baminiwatta & Solangaarachchi, 2021, p. 2100).

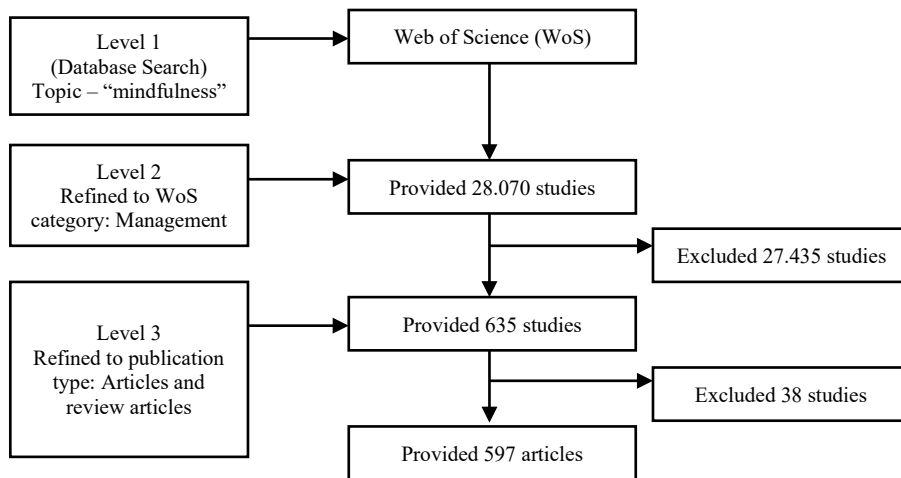
### Source Database

In this study, we collected bibliographic data from the Web of Science (WoS) database. WoS is a global database that features over 21,100 peer-reviewed scientific journals from more than 250 disciplines (Baminiwatta & Solangaarachchi, 2021, p. 2100). We chose to search only the Web of Science database to concentrate on top-ranking journals that have published articles on mindfulness.

### Search Design, Data Collection, and Data Filtration

We conducted a search on the WoS database using the *topic* filter. Our focus was on publications that featured *mindfulness* in their titles, keywords, and abstracts. As of July 20, 2023, we found a total of 28,070 studies. To narrow down our results, we applied two filters (as shown in Figure 1). Firstly, we filtered by *WoS categories*, which resulted in 635 published studies in the management field. Secondly, we filtered by *document types* and obtained 597 articles (comprising 563 articles and 34 review articles). Finally, we exported the bibliographic data in the form of *full records with cited references*.

**Figure 1.** The process applied for delimiting literature.



### Data Analysis and Visualization Maps

In the research conducted, three bibliometric analysis techniques were utilized – *Citation Analysis*, *Keyword Co-Occurrence Analysis*, and *Co-Author Analysis*. The WoS Analysis Tool and the VOSviewer 1.6.18 Package Program were employed to carry out these analyses. VOSviewer is a software designed by Nees Jan Van Eck and Ludo Waltman, which assists in creating and visualizing maps based on network data.

### 3. Results

#### Analysis of the Number of Articles and Citations

We conducted an analysis of publication and citation trends by year to answer our first research question. Table 1 displays the results of our analysis of 597 articles on mindfulness in management published between 1990 and 2023, covering a period of 32 and a half years. The first article on mindfulness was authored by *Stuart Albert* and published in the *Academy of Management Review* in 1990. Titled *Mindfulness, an important concept for organizations: A book review essay on the work of Ellen Langer*, the article evaluated the work of Ellen Langer, an experimental social psychologist at Harvard Psychology Department and author of the book *Mindfulness*, on the concepts of mindfulness and mindlessness with the psychology of control. Albert stated that his main aim was to bring Langer’s work to the attention of *Management* researchers in general and *Organizational Behavior* in particular. The next article on the topic was published nine years later in 1999, titled *Extended reviews: Action, democracy, and mindfulness in inquiry*, and was written by Peter Reason and published in *Management Learning*.

**Table 1.** Distribution of mindfulness articles in Management by publication year

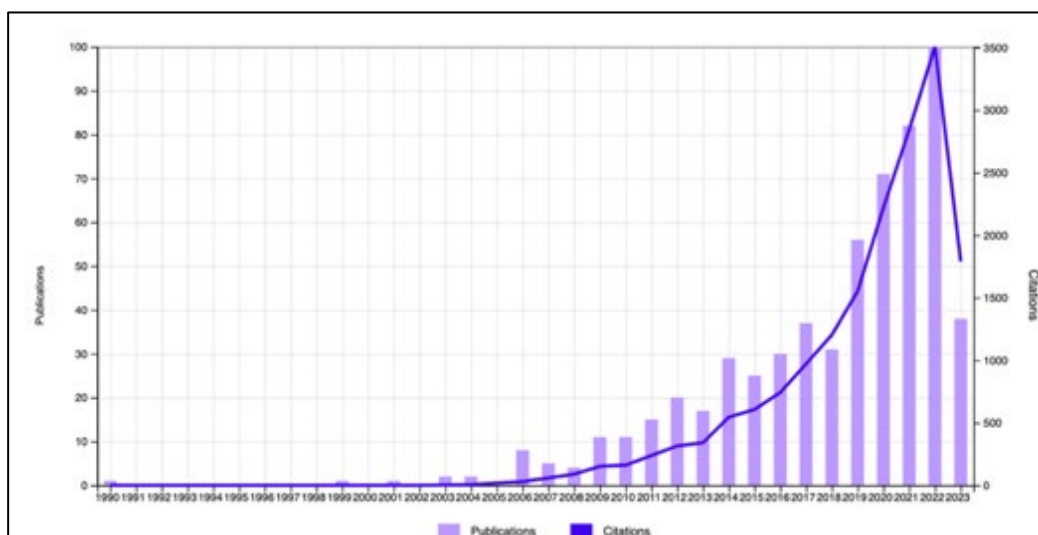
	Publication Years	Articles	Percentage (% of 597)		Publication Years	Articles	Percentage (% of 597)
1	2023	38	6.365	13	2011	15	2.513
2	2022	100	16.750	14	2010	11	1.843
3	2021	82	13.735	15	2009	11	1.843
4	2020	71	11.893	16	2008	4	0.670
5	2019	56	9.380	17	2007	5	0.838
6	2018	31	5.193	18	2006	8	1.340
7	2017	37	6.198	19	2004	2	0.335
8	2016	30	5.025	20	2003	2	0.335
9	2015	25	4.188	21	2001	1	0.168
10	2014	29	4.858	22	1999	1	0.168
11	2013	17	2.848	23	1990	1	0.168
12	2012	20	3.350				

Over the past few years, there has been a significant rise in the number of articles being published. For example, only 46 papers were released between 1990 and 2010, while 413 articles were published in the ten years from 2011 to 2021. This increase peaked between 2019 and 2022, as shown in Figure 2. As a result, 309 out of 597 articles published in the past 32 years, or 51.76%, were released in the last four years. One possible explanation for this surge could be the COVID-19 pandemic. As we all know, the pandemic has caused significant changes that have put immense pressure and stress on people. Employees may have turned to

mindfulness techniques to alleviate their tension and stress to combat this, while managers may have recommended these relaxation techniques to their staff. As a result, this topic may have garnered increased attention from academics.

In the WoS database, 597 articles on mindfulness in the Management field have been cited an average of 827.67 times per year, with a total of 17,381 citations. Each article has an average of 29.11 citations, and the H-index value is 67. Figure 2 displays both the publication distribution by year and the citation trends. The purple bars indicate the number of articles published annually, while the blue line represents the sum of citations received each year. An evident surge in citations has been observed since 2019, in tandem with a significant increase in the number of articles published.

**Figure 2.** Number of articles and citations by year



**Note:** The figure is based on a literature search performed in WoS on July 20, 2023.

Table 2 provides details on management's top 20 most referenced articles regarding mindfulness, which pertains to our second research question. The article named *Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction*, published by *Hülshager, Alberts, Feinholdt, and Lang* in 2013, has the highest number of citations with 644. This study, which is published in the *Journal of Applied Psychology*, receives an average of 58 citations annually. The study includes two additional researches that discuss the use of mindfulness and mindfulness training interventions in organizational research and practice. The results show that mindfulness is positively related to job satisfaction and negatively related to emotional exhaustion at both individual and interpersonal levels. Following this study, two more studies by *Williams et al. (2017)* and *Good et al. (2016)* are also included in the list.

**Table 2.** Top 20 mindfulness articles with the most citations

Title	Authors / Year	Journal	Total citations	Citations /year
1. Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction	Hülshager et al. (2013)	<i>Journal of Applied Psychology</i>	644	58.55
2. Organizational response to adversity: Fusing crisis management and resilience research streams	Williams et al. (2017)	<i>Academy of Management Annals</i>	530	75.71
3. Contemplating mindfulness at work: An integrative review	Good et al. (2016)	<i>Journal of Management</i>	493	61.63
4. Can positive employees help positive organizational change? Impact of psychological capital and emotions on relevant attitudes and behaviors	Avey et al. (2008)	<i>Journal of Applied Behavioral Science</i>	486	30.38
5. Mindfulness and the quality of organizational attention	Weick and Sutcliffe (2006)	<i>Organization Science</i>	479	26.61
6. Crossing an apparent chasm: Bridging mindful and less-mindful perspectives on organizational learning	Levinthal and Rerup (2006)	<i>Organization Science</i>	418	23.22
7. Mindfulness at work	Glomb et al. (2011)	<i>Research in Personnel and Human Resources Management</i>	395	30.38
8. Innovating mindfully with information technology	Swanson and Ramiller (204)	<i>MIS Quarterly</i>	394	19.70
9. Paying attention to mindfulness and its effects on task performance in the workplace	Dane (2011)	<i>Journal of Management</i>	358	27.54
10. Resilience training in the workplace from 2003 to 2014: A systematic review	Robertson et al. (2015)	<i>Journal of Occupational and Organizational Psychology</i>	315	35.00
11. Waking up! Mindfulness in the face of bandwagons	Fiol and O'Connor (2003)	<i>Academy of Management Review</i>	277	13.19
12. Examining workplace mindfulness and its relations to job performance and turnover intention	Dane and Brummel (2014)	<i>Human Relations</i>	265	26.50
13. A performative perspective on stability and change in organizational routines	Feldman (2003)	<i>Industrial and Corporate Change</i>	228	10.86
14. Organizing for mindfulness- Eastern wisdom and Western knowledge	Weick and Putnam (2006)	<i>Journal of Management Inquiry</i>	216	12.00
15. Domain and development of cultural intelligence: The importance of mindfulness	Thomas (2006)	<i>Group &amp; Organization Management</i>	208	11.56
16. Mindfulness in organizations: A cross-level review	Sutcliffe et al. (2016)	<i>Annual Review of Organizational Psychology and Organizational Behavior</i>	206	25.75
17. Capabilities unveiled: The role of ordinary activities in the evolution of product development processes	Salvato (2009)	<i>Organization Science</i>	206	13.73
18. Crafting business architecture: The Antecedents of business model design	Amit and Zott (2015)	<i>Strategic Entrepreneurship Journal</i>	189	21.00
19. The power of presence: The role of mindfulness at work for daily levels and change trajectories of psychological detachment and sleep quality	Hülshager et al. (2014)	<i>Journal of Applied Psychology</i>	184	18.40



20. Coevolving systems and the organization of agile software development	Vidgen and Wang (2009)	<i>Information Systems Research</i>	182	12.13
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### Analysis of Journal

Regarding our third research question, Table 3 summarizes the analysis conducted on the leading journals in the field. *The Journal of Nursing Management* takes the lead, with 25 articles on mindfulness published, representing 4.188% of the 597 articles in our dataset. *The Journal of Applied Psychology* and *the Journal of Occupational and Organizational Psychology* come second with 13 published articles each. Only journals with over 400 citations are listed in Table 3.

**Table 3.** Most cited journals from mindfulness articles

Journal	Articles	Percentage (% of 597)	Journal impact factor <sup>a</sup>	Total Citations	Citations per article	Publisher
<i>Organization Science</i>	12	2.010	4.1	1600	133.3	INFORMS (Institute for Operations Research and The Management Sciences)
<i>Journal of Applied Psychology</i>	13	2.178	9.9	1180	90.7	AMERICAN PSYCHOLOGICAL ASSOCIATION
<i>Journal of Management</i>	5	0.838	13.5	1068	213.6	SAGE PUBLICATIONS INC
<i>MIS Quarterly</i>	7	1.173	7.3	873	124.7	SOC INFORM MANAGEMENT - MIS RESEARCH CENTER
<i>Journal of Occupational and Organizational Psychology</i>	13	2.178	6.2	811	62.3	WILEY
<i>Journal of Management Inquiry</i>	11	1.843	3.1	549	49.9	SAGE PUBLICATIONS INC
<i>Human Relations</i>	9	1.508	5.7	536	59.5	SAGE PUBLICATIONS LTD
<i>Academy of Management Annals</i>	1	0.168	21.2	530	530.0	ACADEMY OF MANAGEMENT
<i>Academy of Management Review</i>	4	0.670	16.4	499	124.7	ACADEMY OF MANAGEMENT
<i>Journal of Applied Behavioral Science</i>	2	0.335	3.5	495	247.5	SAGE PUBLICATIONS INC
<i>Journal of Nursing Management</i>	25	4.188	5.5	422	16.8	WILEY

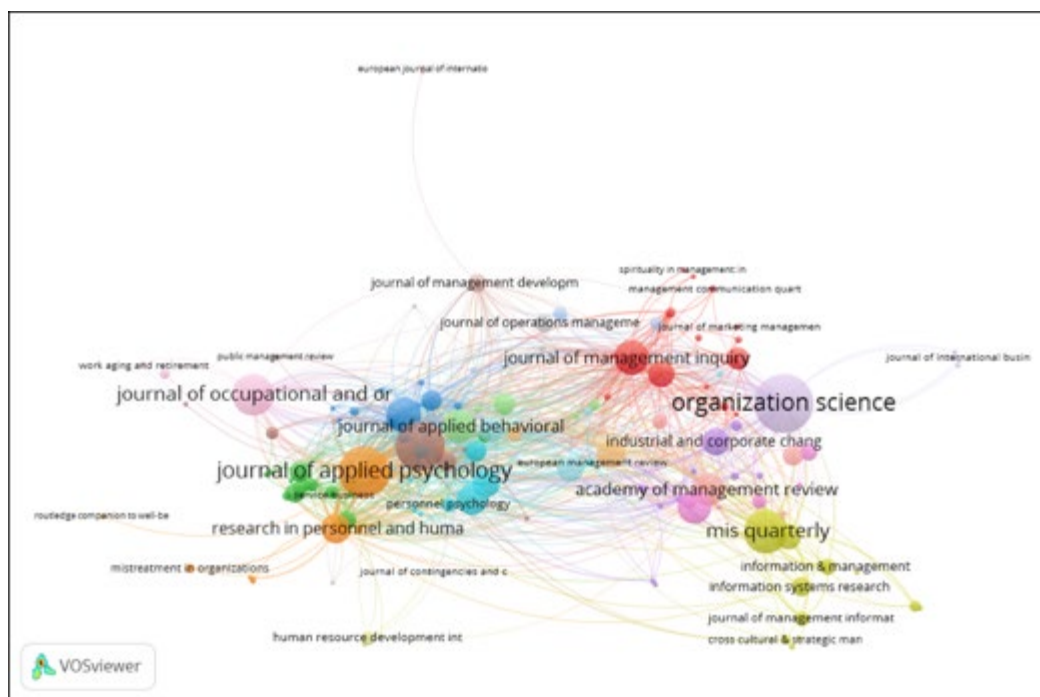
<sup>a</sup> Based on 2022 Journal Citation Reports-Clarivate Analytics.

In the *Organization Science* journal, 12 articles on mindfulness have been published and have received 1600 citations. *The Journal of Applied Psychology* has published 13 papers and received 1180 citations, making it the second most cited

journal. *The Journal of Management* has published five articles and received 1080 citations. Despite having only one article published, the *Academy of Management Annals* received 530 citations for it, and it can be considered an important publication on the subject.

Figure 3 displays the network map of 144 journals that are directly related out of the 171 journals that had at least one article published and received at least one citation on mindfulness in the Management literature. The map consists of 21 clusters and 912 links. The most cited journals are represented by the purple, orange, and brown circles, which are *The Organization Science*, *Journal of Applied Psychology*, and *Journal of Management*, respectively.

**Figure 3.** Network map of the most influential journals



### Analysis of Country and International Cooperation

For our fourth research question, we examined which countries were most active and influential in the field of mindfulness research, as well as their collaborative trends. Out of the 65 countries that publish the most articles on mindfulness in Management, the USA leads with 212 papers, followed by England with 75 papers in second place. *The People’s Republic of China* comes in third, having published 70 articles. Together, USA and England account for 48% of the 597 articles in our dataset, while China accounts for 11%. Table 4 displays a list of countries with over 300 citations, with the USA ranking first and the *Netherlands* in second place. The USA has received 10,409 citations from their 212 articles, setting them apart from other countries on the list.

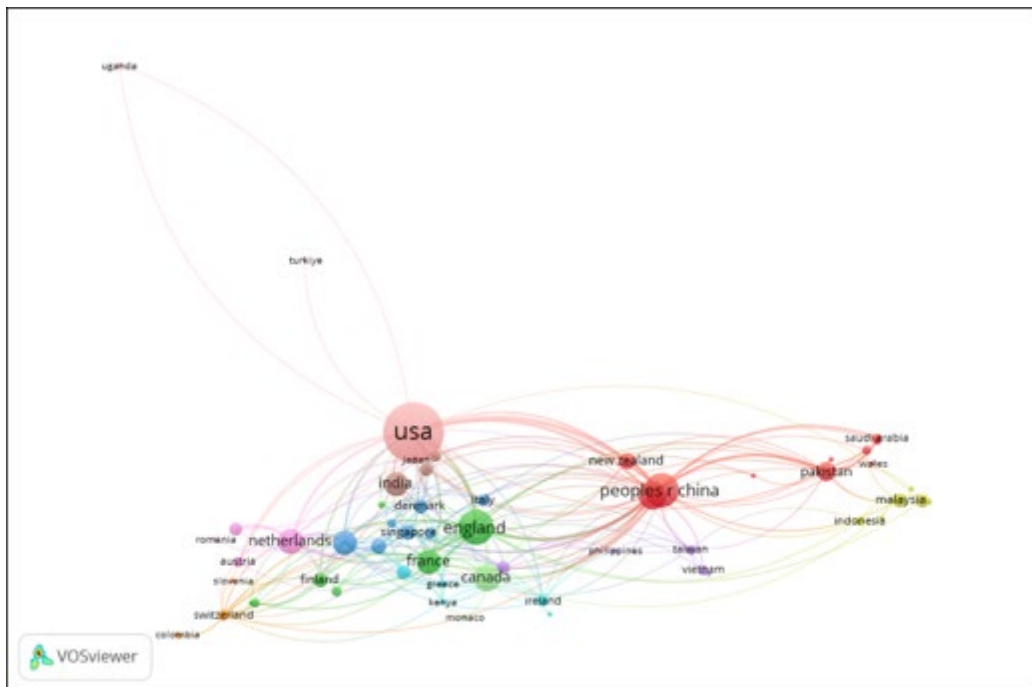
**Table 4.** Top cited countries that published mindfulness articles in Management

Rank	Countries	Articles	Total Citations	Citations per article
1	USA	212	10409	49.09
2	Netherlands	37	1776	48.00
3	England	75	1621	21.61
4	Canada	44	1442	32.77
5	Australia	47	1137	24.19
6	Peoples R. China	70	969	13.84
7	Germany	35	918	26.22
8	France	34	593	17.44
9	Denmark	13	553	42.53
10	Ireland	8	382	47.75
11	Italy	9	365	40.55
12	Spain	14	356	25.42

**Note:** Ranked by total citations (Countries with more than 300 citations).

We used VOSviewer to analyze co-authorship data and identify collaborations between countries, which is illustrated in Figure 4. The network map shows direct connections between 59 out of 65 countries that share co-authorship relationships, forming 11 distinct clusters and 225 links. It's worth noting that the *United States* cluster includes *Turkey*, *Uganda*, and *Zambia*. The largest cluster, depicted in red, comprises China, Russia, Australia, New Zealand, Nigeria, Northern Ireland, Pakistan, Qatar, Saudi Arabia, United Arab Emirates, and Wales.

**Figure 4.** Country co-authorship network visualization map



### Analysis of Author and Co-Authorship

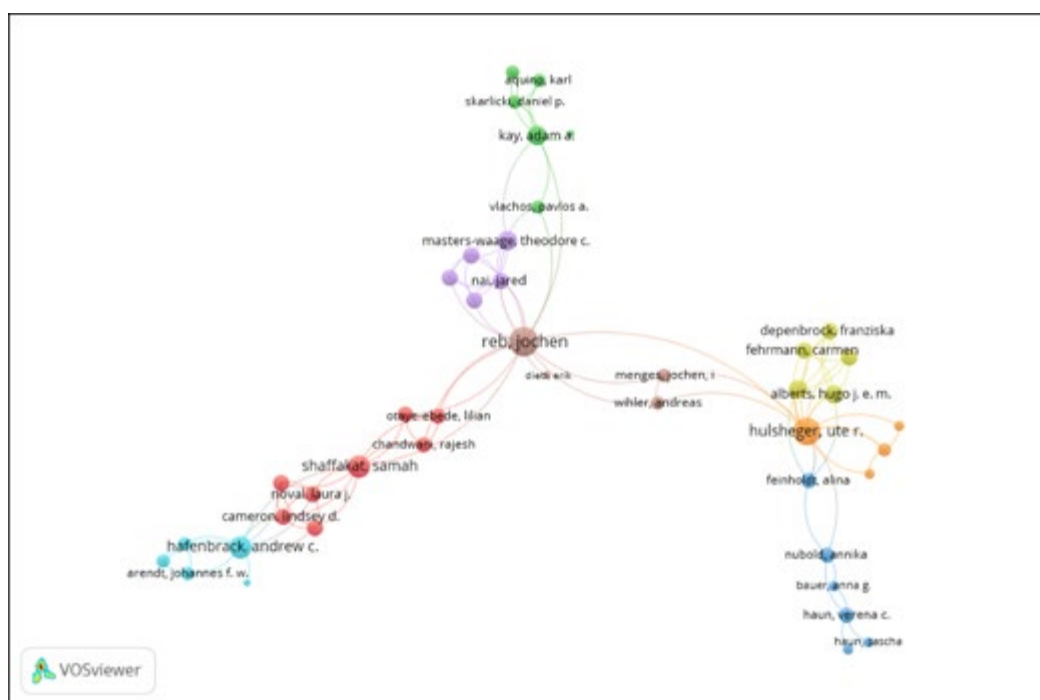
In response to our fifth research question (RQ5), we discovered that *Ute R. Hülshager* and *Erik Dane* are the most prolific authors in the field, having published seven articles each. *Christopher S. Reina* closely follows with six articles. Table 5 presents the top 10 authors whose articles have received over 700 citations, thus making them highly influential. *Hülshager*, *Alberts*, *Lang*, and *Feinholdt* are affiliated with Maastricht University in the Netherlands. The remaining influential authors, *Duffy*, *Sutchcliffe*, *Bono*, *Glomb*, *Dane*, and *Weick*, are affiliated with various universities in the USA.

**Table 5.** Top 10 cited authors who published mindfulness articles in Management

Author	Affiliation	Articles	Total citations
1. Ute R. Hülshager	Maastricht University, Netherlands	7	1096
2. Michelle K. Duffy	University of Minnesota, USA	4	956
3. Kathleen M. Sutchcliffe	Johns Hopkins University, USA	3	903
4. Joyce E. Bono	University of Florida, USA	2	888
5. Theresa M. Glomb	University of Minnesota, USA	2	888
6. Erik Dane	Rice University, USA	7	886
7. Hugo J. E. M. Alberts	Maastricht University, Netherlands	2	828
8. Jonas W. B. Lang	Maastricht University, Netherlands	2	828
9. Alina Feinholdt	Maastricht University, Netherlands	2	797

Our analysis of author collaborations found 446 clusters and 2200 links among 1471 authors. Figure 5 displays direct links between 43 of them.

**Figure 5.** Author co-authorship network visualization map



### Analysis of Keyword Co-occurrence Cluster

To answer our sixth research question, we conducted a keyword co-occurrence analysis and mapped the results. According to Kumar et al. (2020), author keywords are an excellent indicator of paper content and can reveal the relationship of an article to its research question. By analyzing the co-occurrence of author keywords, we can identify common research themes and trends in the area. We used the *full counting method* in the VOSviewer program and found 1771 author keywords that were used at least once. After cleaning and correcting the data, we were left with 1761 keywords. Figure 6 features an overlay visualization map that displays 103 clusters and 7540 links. The circles on the map represent the author's keyword, with the average year of publication and frequency of occurrence indicated by the size and color of the circle respectively (Deng et al., 2020, p. 14). The distance between the circles represents their co-occurrence link, and the thickness of the line connecting them indicates the strength of the link. Notably, the yellow and yellow-green circles on the map depict the keywords used in mindfulness articles published from 2020 to 2022.

**Figure 6.** Overlay visualization map of keyword co-occurrence analysis

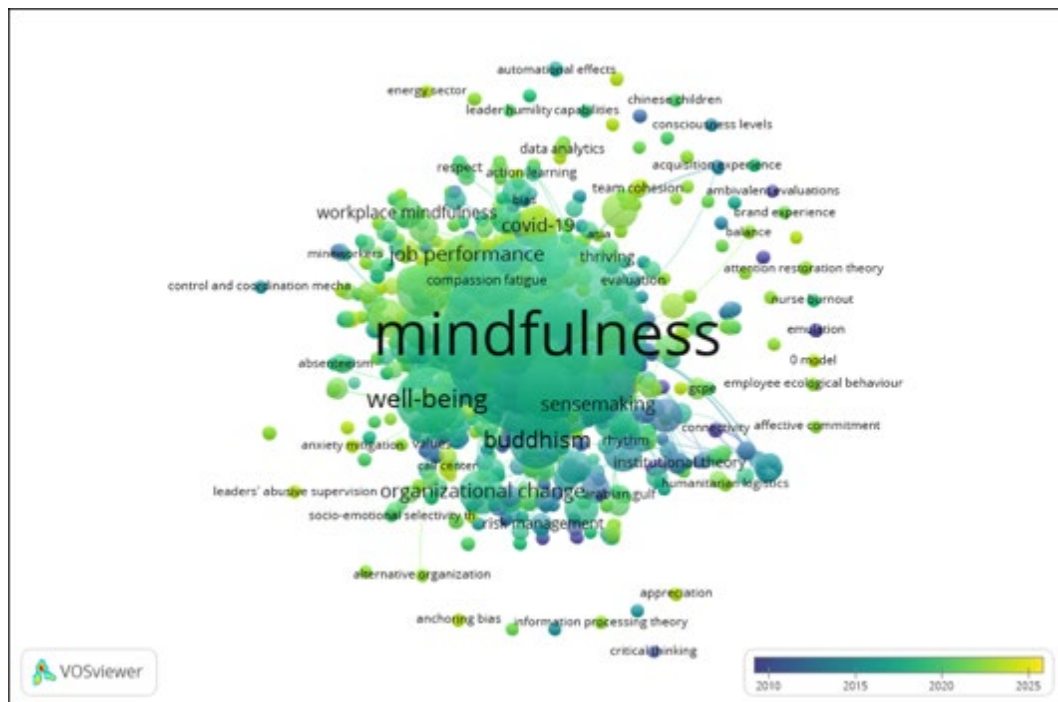


Table 6 contains valuable information regarding the number of links and total link strength values for keywords that have been used seven times or more. It also provides an approximation of the publication dates of the articles in which these words are used. The keyword *mindfulness* has been used in conjunction with 885 other keywords and appears 247 times. The most commonly used keywords alongside mindfulness are *well-being* (26 times, link strength = 14), *resilience* (24 times, link strength = 12), *leadership* (20 times, link strength = 7), *Buddhism* (18 times, link strength = 10), *work engagement* (17 times, link strength = 9), and *meditation* (16 times, link strength = 12). Additionally, management-related terms such as *leadership development*, *organizational change*, *job performance*, and *innovation* are frequently used in these articles.

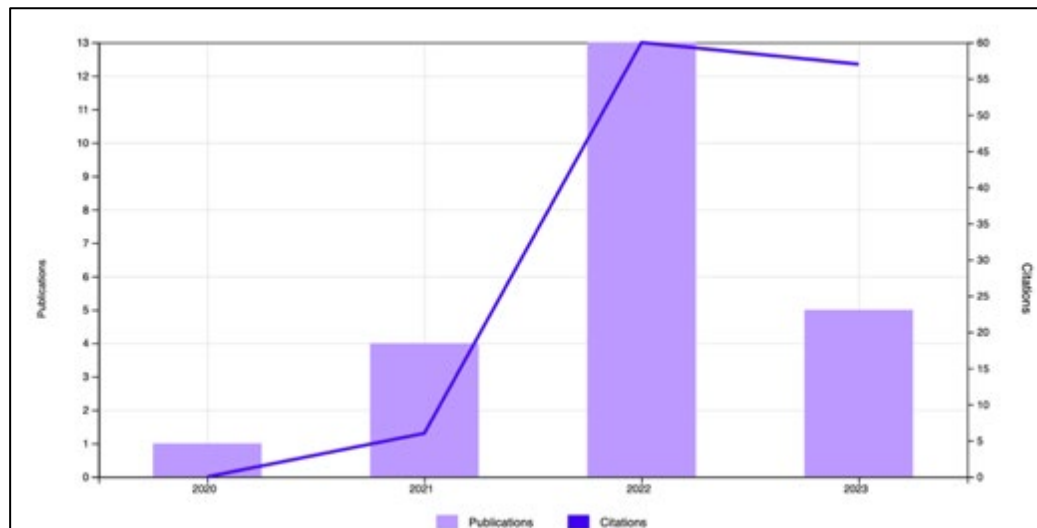
**Table 6.** Author keyword co-occurrence analysis

Keyword	Occurrences	Avg. Pub. Year	Links	Total Link Strength
Mindfulness	247	2018.05	885	1203
Well-being	26	2018.65	95	117
Resilience	24	2019.38	102	120
Leadership	20	2018.05	81	98
Buddhism	18	2016.33	62	81
Work engagement	17	2020.29	63	77
Meditation	16	2017.12	57	77
Stress	14	2020.43	50	65
Leadership development	13	2018.08	46	62
Emotional exhaustion	12	2019.25	51	58

Organizational change	12	2018.08	46	55
Workplace spirituality	12	2018.00	42	48
Job performance	11	2020.64	39	46
Sensemaking	10	2014.80	40	44
COVID-19	9	2022.44	49	54
Psychological detachment	9	2018.33	33	44
Organizational mindfulness	9	2015.00	38	42
Innovation	9	2017.89	33	37
Trait mindfulness	9	2021.67	36	37
Emotions	8	2017.75	39	43
Collective mindfulness	8	2017.38	41	42
Learning	8	2015.38	33	37
Burnout	8	2019.62	29	33
Team mindfulness	8	2021.88	29	29

After analyzing our dataset, we discovered 23 articles that mentioned *COVID-19* as a keyword and are included in Appendix 1. These articles have an average of 41.33 citations per year, resulting in a total of 124 citations and an H-index of 6. Figure 7 shows the distribution and number of citations that these articles received per year. As expected, these articles were published from 2020 to 2023. Specifically, one article was published in 2020, four in 2021, thirteen in 2022, and five in the first half of 2023. Interestingly, articles published in 2022 received 60 citations, while those published in 2023 received 57, indicating a continued interest in the topic. On the other hand, we found that only 3.85 percent of our dataset consisted of articles directly related to COVID-19. This rate alone cannot explain the increase in interest in mindfulness in the field of management.

**Figure 7.** Number of COVID-19 articles and citations by year



In our analysis at Vosviewer, we came across 40 theories to find out which approaches were adopted by mindfulness researchers in the Management field. As seen in Appendix 2, the most frequently used among these theories are *the Conservation of Resources (COR) Theory* (occurrence=6, links =24), *the Institutional Theory* (occurrence=3, links =18), and *the Self-determination Theory*

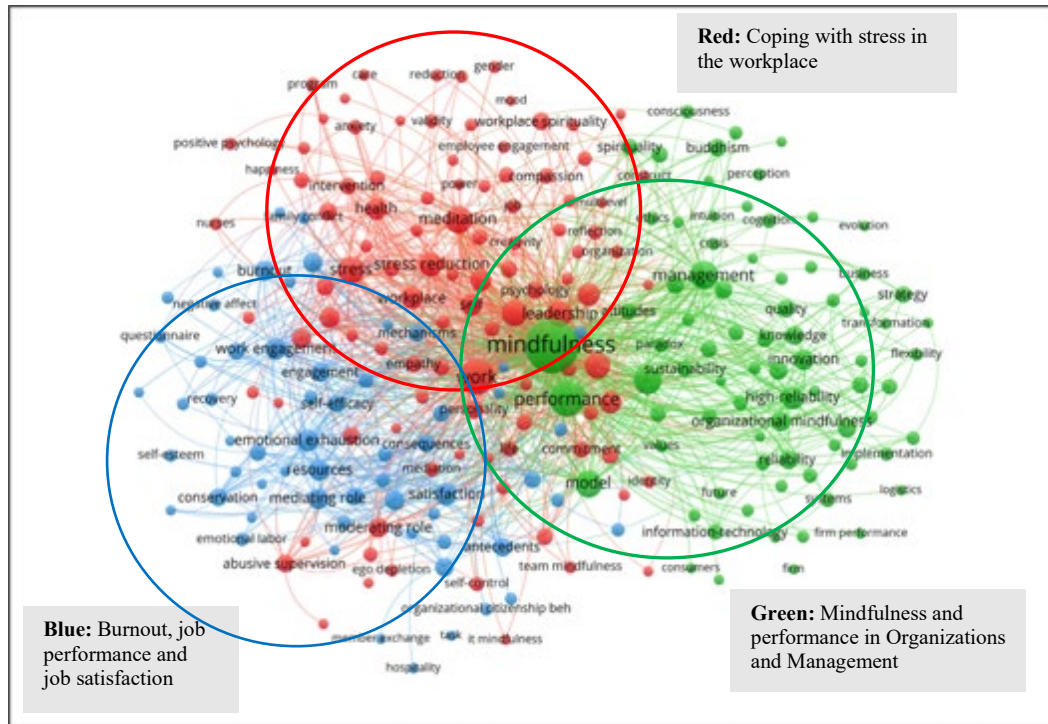
(occurrence=3, links =11). The average publication year of the articles with the first theory is 2022, while the others are 2012 and 2019, respectively.

As we explored mindfulness concepts, we came across a range of terms that have recently been introduced into Management literature. These include collective mindfulness, corporate mindfulness (2022), customer mindfulness (2021), dispositional mindfulness (2021), employee mindfulness (2021), financial mindfulness (2023), green mindfulness (2021), information technology (IT) mindfulness (2020), Langerian mindfulness (2023), leader mindfulness (2022), organizational mindfulness, political mindfulness (2023), self-regulation mindfulness (2021), scientific mindfulness, social mindfulness (2020), socio-cognitive mindfulness (2023), supply chain mindfulness (2022), team mindfulness (2021), trait mindfulness (2021), and workplace mindfulness (2020).

We conducted a co-word analysis using the criteria of *all keywords* with a minimum of five occurrences. As a result, we discovered 243 keywords and 6 clusters. However, when we limited the minimum number of words in a cluster to 50, the number of clusters decreased to just 3. In Figure 8, we highlighted the largest cluster of 104 words in red and named it *coping with workplace stress* due to the abundance of repeated keywords. Table 7 shows that the top three most frequently repeated words in this cluster are *work* (126 times), *meditation* (59 times), and *stress* (58 times). Other frequently mentioned words include *benefits*, *leadership*, *stress reduction*, and *interventions*. The second cluster, highlighted in green, is called *Mindfulness and performance in organizations*. The word *mindfulness* appears 401 times in this cluster, while *performance* is the second most commonly repeated word (124 times). Other frequently mentioned words include *management*, *organizations*, *innovation*, *knowledge*, *decision-making*, and *technology*. The third cluster, highlighted in blue, has the words *burnout* and *emotional exhaustion* repeated 60 times. Other frequently mentioned words include *job performance*, *satisfaction*, *engagement/work engagement*, and *transformational leadership*. Therefore, we named this cluster *Burnout, engagement, and job performance*.



**Figure 8.** World occurrence network map at “all keywords” level



**Table 7.** Thematic clusters based on the co-occurrence of keywords analysis

Cluster	Terms	Occurrences
<b>Red:</b> Coping with stress in the workplace (n=104)	Work	126
	Meditation	59
	Stress	58
	Leadership	56
	Benefits	55
	Stress reduction	44
	Intervention/interventions	37
	Behavior	37
	Workplace	36
	Attention	36
	Resilience	33
	Self	33
	Health	32
<b>Green:</b> Mindfulness and performance in organizations (n=79)	Emotion regulation	30
	Mindfulness	401
	Performance	124
	Management	69
	Organizations	68
	High-reliability	40
	Innovation	31
	Organizational mindfulness	25
	Knowledge	23
	Decision making	22
	Technology	22
Sensemaking	21	
Quality	20	
<b>Blue:</b> Burnout, engagement and job performance	Job performance	37
	Emotional Exhaustion	34

(n=60)

Satisfaction	34
Work engagement	32
Resources	30
Burnout	26
Engagement	24
Transformational leadership	21

It is widely known that mindfulness has its origins in Buddhism. In this research, we examined how management researchers in Buddhist-majority regions approach the topic and compared it to the approaches of researchers in other areas. To do so, we used the GLOBE Project's country/culture clusters to categorize the 65 countries in our data set into seven groups: Confucian Asia, Southern Asia, Anglo, Europe, Latin America, Middle East, and Africa. We identified Buddhist countries with a population greater than one million (World Population Review, 2023) and found that they were nearly identical to the "Confucian Asia" and "Southern Asia" culture clusters in the GLOBE classification (except for the United States). We combined these two clusters to form the "Buddhist countries cluster," resulting in a total of six cultural clusters. We then analyzed each cluster separately by downloading a new data set from the WoS database for each of them. After conducting a separate co-occurrence analysis for each of the six-country clusters, we were able to identify the most commonly researched topics in each cluster. These findings have been compiled in Table 8.

Across *the Buddhist Asia cluster*, which includes China, Japan, Singapore, South Korea, Taiwan, India, Indonesia, Malaysia, Philippines, Thailand, Pakistan, Vietnam, and Bangladesh, 170 articles were published on the subject, with 697 keywords used. The focus was on exploring *emotional exhaustion* and *work engagement* in relation to mindfulness. Alongside *team mindfulness*, *trait mindfulness*, *Buddhism*, *workplace spirituality*, and *authentic leadership*, the word *COVID-19* was also frequently examined in this cluster.

In *the Anglo cluster*, consisting of the USA, Canada, Australia, New Zealand, South Africa, England, Ireland, Scotland, Northern Ireland, and Wales, 362 articles were published, with 1115 keywords used. The most commonly explored topics were resilience, well-being, leadership, Buddhism, *meditation*, *work engagement*, and *leadership development*.

*The European cluster*, comprising 26 countries, mainly Netherlands, Germany, France, Spain, Denmark, Finland, Norway, and Belgium, had 171 published articles with 622 keywords. The most commonly explored topics were *intervention*, *psychological detachment*, *work engagement*, *leadership*, *well-being*, and *resilience*.

*The Middle East cluster*, which includes Qatar, Turkey, Palestine, Saudi Arabia, United Arab Emirates, Jordan, and Oman, had 26 articles published with 106 keywords used. Unlike the other clusters, the concepts of nurses, *psychological*

*distress, environmental sustainability, mindful organizing, and depression* were prominent.

The Latin America cluster published only 11 articles, including Brazil, Colombia, Peru, and Chile. Although unsuitable for comparison, the focus was on *decision-making, business education, and management education*. Finally, in the Africa cluster, which includes countries such as Nigeria, Zambia, Kenya, and Uganda, 17 articles were published focusing on *positive affect and resilience*.

**Table 8.** Regions, author keywords and occurrences

Regions	Occurrences	Regions	Occurrences
<b>Buddhist Asian</b> (13 countries, 170 articles, 697 keywords)		<b>Anglo</b> (10 countries, 362 articles, 1115 keywords)	
Emotional exhaustion	7	Resilience	17
Work engagement	7	Well-being	16
Team mindfulness	7	Leadership	14
COVID-19	6	Buddhism	14
Job performance	6	Meditation	13
Stress	6	Work engagement	12
Buddhism	6	Leadership development	10
Trait mindfulness	6	COVID-19	7
Workplace spirituality	6	Stress	7
Authentic leadership	5	Trait mindfulness	7
<b>Europe</b> (26 countries, 171 articles, 622 keywords)		<b>Middle East</b> (7 countries, 26 articles, 106 keywords)	
Intervention	6	Nurses	3
Psychological detachment	6	Psychological distress	3
Work engagement	6	Arabian gulf	2
Leadership	6	Environmental sustainability	2
Well-being	6	Mindful organizing	2
Resilience	6	Depression	2
Meditation	5	Job satisfaction	2
Sensemaking	5	Stress	2
Innovation	5	Conservation of resources theory	2
COVID-19	4	Resilience	2
<b>Latin America</b> (4 countries, 11 articles, 45 keywords)		<b>Africa</b> (5 countries, 17 articles, 58 keywords)	
Decision making	2	Positive affect	2
Business education	2	Resilience	2
Management education	2		
MBA	2		

#### 4. Discussion and Conclusion

Below, we will present the results and conclusions of our research, which conducted a bibliometric analysis of mindfulness articles published in the management literature. This overview of the field provides valuable insights.

The most influential mindfulness article in management is by *Hülshager, Alberts, Feinholdt, and Lang (2013)*. The most prolific and influential author in the field is *Ute R. Hülshager*. While the most prolific journal is the *Journal of Nursing Management*, the most influential journal is the *Organization Science*.

The countries that produce the most articles are the USA, England, and China. However, the most influential works come from the USA, the Netherlands, England, Canada, and Australia. The leading group of countries that collaborate on articles includes China, Russia, Australia, New Zealand, Nigeria, Northern Ireland, Pakistan, Qatar, Saudi Arabia, United Arab Emirates, and Wales.

Between 1990 and 2023, a total of 597 articles were published. In recent times, there has been a significant increase in both the number of articles and citations. This rise peaked between 2019 and 2021, which may be because of the COVID-19 pandemic and the resulting societal and economic changes. However, our analysis found that only 23 articles, equating to 3.85% of our dataset, were explicitly about COVID-19. This indicates that the widespread interest in mindfulness in management has other underlying causes beyond the pandemic. As a result, we recommend further examination of articles published in the last three years to uncover these reasons.

We have listed the titles of the 23 COVID-19 articles in Appendix 1 for interested researchers. It would be helpful to carefully examine these studies, which determine the positive effects of mindfulness on employees in challenging conditions such as the COVID-19 pandemic and learn lessons on how to benefit from this practice. For example, *Toniolo-Barrios and Pitt (2021)* noted that during the COVID-19 pandemic in 2020, many employees had to work from home unexpectedly, with consequences such as increased stress, worse mental health, and lower work productivity and motivation. Therefore, the authors suggested mindfulness to help employees overcome the challenges of working from home because mindfulness enables employees to disconnect from work when they need it mentally. In addition, improves their ability to focus on job tasks and, therefore, their performance. Finally, helps them better manage screen fatigue. In this context, the authors presented a list of mindfulness techniques, explained how mindfulness can be cultivated, and provided recommendations for managers and team leaders responsible for their employee's well-being and productivity.

*Conversano et al. (2020)* conducted an online study by the Department of Surgical, Medical, and Molecular Pathology at the University of Pisa on 6412 people. They found that high dispositional mindfulness increases well-being and helps to cope with stressful situations. Furthermore, the authors stated that mindfulness-based mental training could effectively stop the onset of post-traumatic psychopathological beginnings and prevent the onset of chronic mental disorders.

In a recent study by Wang et al. (2021, p. 1073), it was suggested that companies should consider investing in spiritual programs and activities that promote mindfulness among their employees. For instance, hotels can provide mindfulness-based stress reduction (MBSR) training, mindfulness-based cognitive therapy (MBCT) training, yoga-based mindfulness training, meditation-based mindfulness training, acceptance and commitment therapy (ACT) based training, dialectical behavior therapy (DBT), or apps and tools for mindfulness meditation. These programs have been successfully implemented in high-stress work environments like healthcare and the military. The authors pointed out that since the hospitality industry is known for being stressful, investing in these programs can significantly improve employee mental wellbeing.

Roemer, Sutton, and Medvedev (2021), in their study of 301 New Zealand employees immediately after the COVID-19 quarantine, found that mindfulness increased readiness for change in individuals with high well-being and low distress. In addition, a study conducted by Suthatorn and Charoensukmongkol (2022) in five Thailand-based airlines during the COVID-19 outbreak found that flight attendants with a high level of trust in the organization and who have trait mindfulness are less likely to show stress.

In another study by Tulucu et al. (2022, p. 131) conducted on 164 nurses found that mindfulness can significantly increase engagement, and resilience can positively mediate this relationship. Additionally, the study revealed that mindfulness can significantly reduce psychological distress, and resilience can further reduce this negative effect as a moderator. Based on these findings, the authors (2022, p. 141-143) suggest that hospitals should implement mindfulness and resilience training programs to increase or maintain the work engagement of healthcare professionals, particularly front-line workers such as nurses. Hospitals can initiate various systems, processes, and programs to nurture the mindfulness of their staff, including stress management programs, work-life balance policies, and work-rotation schemes to ease anxiety during COVID-19 while preventing illness. The authors emphasize that such an approach is essential as the psychological well-being of healthcare workers impacts their productivity and performance.

After analyzing the occurrence of keywords, we have made some significant discoveries. Our dataset shows that mindfulness, well-being, resilience, leadership, Buddhism, work engagement, meditation, stress, leadership development, emotional exhaustion, organizational change, workplace spirituality, job performance, and COVID-19 are the most commonly used keywords in articles.

We discovered 21 distinct forms of mindfulness mentioned. These keywords appeared mainly in articles published from 2020 to 2023, and they relate to various fields like Business, Management, Psychology, and Public administration. These topics are new and open to further development in the relevant literature. For future research, we recommend exploring concepts such as corporate mindfulness, employee mindfulness, financial mindfulness, green mindfulness, IT mindfulness, leader mindfulness, organizational mindfulness,

socio-cognitive mindfulness, team mindfulness, and workplace mindfulness, which we find particularly interesting.

Through our analysis, we determined the theories referenced in the articles. We found a total of forty different theories, each cited once, with the exception of three: The Conservation of Resources (COR) theory, Institutional theory, and Self-determination theory. The COR theory is based on the idea that individuals seek to acquire, maintain, protect, and cultivate things that are important to them. They do so in a world that they perceive as intrinsically threatening, where they need to harness their personal strengths, social connections, and cultural identity to survive (Hobfoll, 2001, p. 340). The COR theory proposes four categories of resources: objects (e.g., computers, machines, technology), conditions (e.g., job security, stress-free environment), energy (e.g., time, money), and psychological characteristics (e.g., self-esteem, optimism, self-efficacy, mindfulness, resilience). Objects, conditions, and energy are external resources that exist in the broader organizational environment, while psychological resources are personal resources that individuals possess. The COR theory suggests that individuals use essential psychological resources (e.g., mindfulness) to cope with environmental stressors and also utilize them to meet future needs (Mubarak et al., 2022, p. 566-567).

Our analysis revealed three primary clusters that highlight the regional variations in the topics covered. Each cluster was named based on the most commonly repeated keywords: “Coping with Workplace Stress,” “Mindfulness and Performance in Organizations,” and “Burnout, Engagement, and Job Performance.” Understanding these areas is crucial for comprehending the themes that shape mindfulness in the management literature.

We carried out further analysis to compare the topics covered in studies published in countries with significant Buddhist populations to those published elsewhere. To do this, we used the classification from the GLOBE Project and applied it to our dataset, resulting in six country/region clusters. Our findings indicate that in the Buddhist Asia cluster, the most frequently used keywords were emotional exhaustion, work engagement, and team mindfulness. In the Anglo cluster, the keywords were resilience, well-being, leadership, and Buddhism. In the European cluster, the keywords were intervention, psychological detachment, work engagement, leadership, well-being, and resilience. The Middle East cluster focused on nurses, psychological distress, and environmental sustainability. The Latin America cluster discussed decision-making and management education, while the Africa cluster focused on positive affect and resilience.

In light of these results, we understand that the phenomenon of mindfulness, which dates back to ancient times, will continue to support employees in keeping up with the incredible speed, interaction, innovation, and changes brought by the postmodern age. This means that the interest in mindfulness will increase in management, as in many other disciplines.

Using only the Web of Science database can be seen as a limitation in the research. Although the reason for this is to focus on the highest-ranked journals in the field, we recommend that the search be done in a broader area by using different databases, especially Scopus, in future research.

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## APPENDIX 1

Articles in management using the keywords mindfulness and COVID-19 together

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Authors	Year	Title of Article and Name of Publication
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1	Suthatorn and Charoensukmongkol	2023	Effects of trust in organizations and trait mindfulness on optimism and perceived stress of flight attendants during the COVID-19 pandemic. <i>Personnel Review</i> .
2	Tuluçcu, Anasori, and Madanoglu	2022	How does mindfulness boost work engagement and inhibit psychological distress among hospital employees during the COVID-19 pandemic? The mediating and moderating role of psychological resilience. <i>Service Industries Journal</i> .
3	De Clercq, Haq, Azeem, and Khalid	2023	The link between fear about COVID-19 and insomnia: Mediated by economic concerns and psychological distress, moderated by mindfulness. <i>Journal of Management &amp; Organization</i> .
4	Vu, Vo-Thanh, Chi, Nguyen, Nguyen, and Zaman	2022	The role of perceived workplace safety practices and mindfulness in maintaining calm in employees during times of crisis. <i>Human Resource Management</i> .
5	Vu and Nguyen	2022	Mindful unlearning in unprecedented times: Implications for management and organizations. <i>Management Learning</i> .
6	Roemer, Sutton, and Medvedev	2021	The role of dispositional mindfulness in employee readiness for change during the COVID-19 pandemic. <i>Journal of Organizational Change Management</i> .
7	Lusiantoro and Pradiptyo	2022	Rebuilding disrupted supply chains: how can a self-organised social group facilitate supply chain resilience? <i>International Journal of Operations &amp; Production Management</i> .
8	Kumar, Panda, Behl, and Kumar	2021	A mindful path to the COVID-19 pandemic: An approach to promote physical distancing behavior. <i>International Journal of Organizational Analysis</i> .
9	Ogbonnaya, Ali, Usman, Babalola, Ren & Rofcanin	2022	Death anxiety among street-level bureaucrats: How does it affect their work drive and performance? <i>Public Management Review</i> .
10	Raza, Ishaq, Zia, ur-Rehman, and Ahmad	2022	Technostressors and service employees outcomes: A longitudinal study. <i>Service Industries Journal</i> .
11	Wang, Chi, and Erkiçiç	2021	The impact of religiosity on political skill: Evidence from Muslim hotel employees in Turkey. <i>International Journal of Contemporary Hospitality Management</i> .
12	Haun, Rimmel, and Haun	2022	Boundary management and recovery when working from home: The moderating roles of segmentation preference and availability demands. <i>German Journal of Human Resource Management</i> .
13	Wang, Xu, Liang, and Li	2022	Coping with job stress for hospital nurses during the COVID-19 crisis: The joint roles of micro-breaks and psychological detachment. <i>Journal of Nursing Management</i> .
14	Alo, Arslan, Tian & Pereira	2023	Exploring the limits of mindfulness during the COVID-19 pandemic: Qualitative evidence from African context. <i>Journal of Managerial Psychology</i> .
15	Sawyer, McManus, and Bailey	2022	A mixed-methods pilot study of a psychoeducational group programme for nurse managers during the COVID-19 pandemic. <i>Journal of Nursing Management</i> .
16	Aránega and Sánchez	2022	Promoting management skills: An intercultural comparative analysis. <i>International Journal of Entrepreneurial Behavior &amp; Research</i> .
17	Ahmed, Önköl, Das, Krishnan, Olan, Hardey, and Fenton	2023	Developing techniques to support technological solutions to disinformation by analyzing four conspiracy networks during COVID-19. <i>IEEE Transactions on Engineering Management</i> .
18	Murtola and Vallyelly	2023	Who cares for wellbeing? Corporate wellness, social reproduction and the essential worker. <i>Organization</i> .
19	Hajjami and Crocco	2023	Evolving approaches to employee engagement: comparing antecedents in remote work and traditional workplaces. <i>European Journal of Training and Development</i> .
20	Klarin, Park, Xiao, and Kim	2023	Time to transform the way we travel? A conceptual framework for slow tourism and travel research. <i>Tourism Management Perspectives</i> .
21	Slaymaker, O'Byrne, and Williams	2023	The influence of socio-cognitive mindfulness and resilience on middle managers' stress and thriving during COVID-19: Results from two studies. <i>Journal of Management Development</i> .
22	Dressler Camillo, Simone Antonello, and Carlos Tomazzoni	2022	Self-Compassion and Spirituality Practices: Students Dealing with the COVID-19 Context. <i>Administração: Ensino e Pesquisa</i> .

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23	Carrillo-Lopez, Canto, and Guillamon	2022	Escape Room III Coronavirus COVID-19 in primary schoolchildren. <i>Sportis-Scientific Technical Journal of School Sport Physical Education and Psychomotricity</i> .
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## APPENDIX 2

### Theories of mindfulness in management literature

	Theory	Occurrence	Links	Avg. Pub. Year
1.	Attention restoration theory	1	6	2022
2.	Behavioral reasoning theory	1	7	2019
3.	Behavioral theory of the firm	1	2	2009
4.	Broaden and build theory	1	7	2022
5.	Cognitive mediation theory	1	4	2008
6.	Complexity leadership theory	1	5	2020
7.	<b>Conservation of resources theory</b>	<b>6</b>	<b>24</b>	<b>2022</b>
8.	Construal level theory	1	3	2021
9.	Contextual leadership theory	1	7	2022
10.	Dual-system theory	1	4	2022
11.	Entrainment theory	1	4	2022
12.	Functional leadership theory	1	4	2023
13.	Group development theory	1	4	2018
14.	Information processing theory	1	4	2022
15.	<b>Institutional theory</b>	<b>3</b>	<b>18</b>	<b>2012</b>
16.	Learning theory	1	10	2015
17.	Media synchronicity theory	1	9	2018
18.	Organization theory	1	2	2015
19.	Organizational theory	1	1	2011
20.	Paradox theory	1	3	2020
21.	Re-perceiving theory	1	8	2022
22.	Regulatory focus theory	1	5	2014
23.	Relational theory	1	5	2012
24.	Scarcity theory	1	3	2023
25.	Self-categorization theory	1	5	2021
26.	<b>Self-determination theory</b>	<b>3</b>	<b>11</b>	<b>2019</b>
27.	Self-regulation theory	1	5	2022
28.	Sensemaking theory	1	3	2015
29.	Social exchange theory	1	4	2020
30.	Social identity theory	1	7	2022
31.	Social information processing theory	1	5	2023
32.	Social reproduction theory	1	5	2023
33.	Socio-emotional selectivity theory	1	6	2020
34.	Socio-technical system theory	1	4	2023
35.	Stress theories	1	3	2011
36.	Terror management theory	1	5	2023
37.	Theory of affordance	1	6	2023
38.	Theory of persuasion	1	6	2023
39.	Theory of planned behavior	1	4	2022
40.	Theory of reasoned action	1	10	2023