

Mapping Research Trends in Human Resource Development and Work Engagement: A Bibliometric Analysis Perspective

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ABSTRACT

Employee engagement, which reflects workers' passion, commitment, and active participation in their jobs, plays a crucial role in achieving organizational effectiveness. This research conducts an in-depth bibliometric review of 1,387 Scopus-indexed publications from 1974 to 2022 to explore how HRD initiatives influence engagement levels. The study assesses key contributors such as nations, academic institutions, publications, and leading researchers, offering a broad perspective on global trends in engagement studies. Findings indicate that the U.S. dominates research output, while the Netherlands stands out for its strong cross-border collaborations. Among institutions, Utrecht University demonstrates significant productivity, with Bakker A.B. recognized as a key figure in the field. Using bibliometric techniques such as citation tracking, co-citation mapping of influential works, and keyword network analysis, the research uncovers key patterns. Nearly half (49.82%) of the studies garnered ten or more citations, with the three most referenced papers contributing 10.54% of total citations. Co-citation analysis groups the literature into three major clusters, whereas keyword analysis highlights recurring topics like workplace performance, employee morale, stress-related disengagement, and corporate culture. The paper also identifies areas requiring further exploration, including the role of managerial approaches, technological advancements, and workplace conditions in shaping engagement. These insights are valuable for both scholars and businesses seeking to improve employee motivation and organizational outcomes.

Keywords: Work engagement, Human Resource Development (HRD) practices, Bibliometric analysis, Job performance, Job satisfaction, Organizational culture.



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INTRODUCTION

Work engagement, a concept that denotes employees' enthusiasm, dedication, and involvement in their roles, is a fundamental determinant of organizational success. Engaged employees often show higher levels of enthusiasm, vigor, and involvement in the workplace in terms of job satisfaction, increased productivity, and enhanced performance. Work engagement is crucial for companies to remain innovative and competitive because of these promising features. Given the critical role of work engagement in organizational success, it becomes imperative to examine the mechanisms through which it can be fostered. One such mechanism is through HRD practices, which are vital in ensuring the effective and efficient performance of human resources in technologically advanced organizations. Human resources are nurtured with improvised HRD practices, and if not handled properly, the resources will be eloped and will not benefit the organization.

Human resource development practices define the different practices adopted by organizations to improve their human resources. HRD practices are lifeguards for employees floating in organizations. A growing concern of organizations is to face the competition arising from different technological advancements using the latest techniques and practices, to which HRD practices contribute significantly. HRD practices portray an organization's dedication to achieving its established mission and vision, thereby combining the organization's and employees' goals. While HRD practices are designed to focus on employee growth, the process through which these practices enhance work engagement merits further exploration. This study will examine how structured training and development programs, as examples of HRD practices, contribute to employees feeling more engaged by enhancing their skills and confidence. One key area where HRD practices and work engagement intersect is structured training and

development programs. These programs not only equip employees with job-related skills but also build their confidence and self-efficacy, which are essential components of work engagement. As employees feel more capable of handling job-related challenges and reaching career goals, their intrinsic motivation to excel in their roles increases. This sense of accomplishment, coupled with ongoing skill enhancement, has been shown to directly contribute to an employee's engagement level, as they feel more empowered to take on responsibilities and deliver high-quality work.

HRD initiatives that cultivate work engagement marked by enthusiasm, perseverance, and deep focus drive numerous benefits. Employees who are engaged exhibit strong motivation, emotional stamina, passion, and a profound connection to their tasks. This principle is vital due to its dual advantages for both staff and companies, such as higher workplace contentment, efficiency, loyalty, creativity, and lower rates of absenteeism and employee attrition. Organizations can foster work engagement through various Human Resource Development practices.

HRD practices and work engagement go hand in hand simultaneously; work engagement requires the most significant and appropriate HRD practices to allow an organization to function smoothly by taking its employees together. Engaging employees in their work requires specific development practices that motivate and modify an employee's perception and approach to looking at things differently and effectively. Training and development are profound HRD practices that highlight newly advanced ways to enhance an employee's specialized existing skills for his/her overall development, which later impacts the employee's work engagement. The work engagement scale talks about Vigor, Dedication, and Absorption of an employee into his work with positivity. Employees are often seen as dedicated to their work when they are motivated positively, encouraged correctly, and understood correctly. Research has consistently suggested that work engagement is strongly linked to lower turnover rates, reduced absenteeism, and improved mental well-being among employees, reinforcing the importance of fostering an engaged workforce.

The extensive positive impact of engagement on individuals, organizations, and society has prompted considerable research on employee engagement. Although extensive research exists on this topic, few studies have conducted a bibliometric review of employee engagement literature indexed in Scopus between 2002 and 2022.

This study aims to address the research gap by determining the most influential publications on the relationship between HRD practices and work engagement, evaluating the structured knowledge through co-citation analysis, and predicting future research trends using co-word analysis

To evaluate the structured knowledge available among the most cited publications using co-citation analysis
To investigate and predict the future research trends in both concepts using co-word analysis.

This research aims to deliver meaningful perspectives on the evolution and present landscape of studies related to employee engagement, establishing a basis for further exploration in this significant area. To investigate these questions, a bibliometric approach was applied, incorporating multiple methods, including the assessment of citations, co-citation examination of highly referenced works, and analysis of keyword co-occurrence.

LITERATURE REVIEW:

In the last fifteen years, the idea of "work engagement and HRD practices" has gained a lot of interest from researchers, business experts, and companies. It has become a popular topic in management studies, leading to a large amount of research on it. This includes reviewing articles, conducting detailed analyses, and studying special issues in journals and books. Here's a summary of the main goals and important findings from past studies on HRD and work engagement, organized through a bibliometric analysis. A summary of the main goals and significant findings from earlier research on human resource development and work engagement, analyzed through bibliometric methods, is outlined below.

Research conducted by Zúñiga et al. (2022) explored how the Protestant work ethic (PWE) plays a key role in shaping the connection between high-performance work practices (HRP-P) and two workplace outcomes: work engagement (WE) and organizational citizenship behavior (OCB). The study, which analyzed responses from 299 participants, highlights five critical dimensions of PWE: leisure, work centrality, deferred gratification, moral principles, and time efficiency as particularly influential in this dynamic. The study emphasizes integrating these values into organizational practices to enhance employee engagement and promote positive workplace behaviors.

Another study by (Kasim et al., 2022) carried out research concludes that social media usage significantly enhances employees' work engagement and innovative job performance. It emphasizes the role of social capital, highlighting how strong network ties and a shared vision among colleagues foster collaboration and creativity. The study suggests that organizations should adopt social media strategically to improve communication and performance outcomes. Additionally, it calls for further exploration of social media's positive and negative effects in various organizational contexts to gain a comprehensive understanding.

(Li et al., 2022) implemented a research article that concludes that perceived task demands can have dual effects on employee outcomes. Specifically, when

tasks are viewed as challenges, they enhance in-role performance and motivation. Conversely, when perceived as hindrances, they contribute to increased work fatigue and decreased performance. The study emphasizes how employees interpret task demands, suggesting that fostering a challenge-oriented mindset can improve workplace effectiveness and well-being. These insights are crucial for developing supportive work environments.

In an article published by (Tsai et al., 2022) findings indicate that job crafting significantly correlates with various dimensions of healthy aging at work, particularly among middle-aged education professionals. Positive reappraisal emerged as a vital control strategy for this group, while job crafting was crucial for younger educators. The study emphasizes the necessity of tailored human resource interventions to support these workers, enhancing their occupational health and well-being. Overall, the results provide valuable insights into practical strategies for fostering a healthier work environment in educational settings.

(Martínez-Fernández et al., 2022) presented a bibliometric analysis that revealed implementing the SBAR method significantly improved communication and well-being among healthcare professionals in the internal medicine unit. Post-intervention assessments indicated enhanced professional engagement and reduced burnout levels, particularly among nursing staff compared to auxiliary technicians. The research stressed how organized communication methods can create a helpful work atmosphere. This leads to improved care for patients and happiness for staff. The study also strictly followed ethical guidelines, including participants' privacy and having their understood agreement.

(Isah et al., 2022) investigated and concluded that work engagement significantly mediates the relationship between compensation and employee competence within Nigeria's Universal Basic Education System. Higher compensation levels were found to enhance employee engagement, which in turn positively influenced their competence. This suggests that improving compensation strategies can improve employee performance and effectiveness. The study emphasizes the importance of fostering an engaging work environment to maximize the benefits of compensation on employee skills and overall organizational success.

The research article by (Wan et al., 2022) concludes that emotional leadership significantly enhances work engagement among Chinese subordinates. It identifies intrinsic motivation as a crucial mediator in this relationship, suggesting that leaders who effectively express and manage their emotions can inspire greater team engagement. Additionally, traditional values play a role in shaping these dynamics, indicating that cultural context influences the effectiveness of emotional leadership. Overall, the findings emphasize

the importance of emotional intelligence in leadership for fostering a motivated workforce.

A study accomplished by (Srimulyani & Hermanto, 2022) investigated and concluded that credible leadership significantly influences organizational culture and work engagement among East Java, Indonesia, and private hospital employees. The study found that a solid organizational culture positively impacts work engagement, with credible leadership as a crucial mediator in this relationship. The results indicate that enhancing leadership credibility can improve employee engagement, which is essential for delivering high-quality healthcare services. A supportive organizational culture and effective leadership practices are vital for enhancing employee performance and satisfaction in healthcare settings.

In their empirical analysis, (Thanh et al., 2022) analyzed that transformational leadership significantly enhances innovative work behavior and task performance among employees in Vietnam's public sector. In contrast, transactional leadership shows a moderate positive effect, while laissez-faire leadership negatively impacts these outcomes. Additionally, work engagement serves as a crucial mediator, amplifying the positive impact of leadership styles on performance metrics. The study emphasizes effective leadership's need to foster employee engagement and drive organizational success.

Lastly, (Huo et al., 2022) executed a study that implementing Green Human Resource Management (GHRM) practices significantly enhances green performance (GP) in manufacturing SMEs. It identifies that green recruitment, training, and performance management foster a positive green work climate, increase engagement, and promote green employee behavior. These factors collectively contribute to improved organizational sustainability. The study emphasizes organizations' need to prioritize GHRM strategies to achieve environmental goals and comply with legal standards, ultimately leading to a more sustainable operational framework within the manufacturing sector.

Work engagement is closely examined in meta-analyses. These studies look at its influences, treatments, impacts, and changes in specific fields, which greatly help to understand its complexity. These studies lend a hand to businesses and researchers. They help lift employee engagement and affect different outcomes within the organization.

Also, the present study contributes to understanding employee engagement and Human Resource Practice through its bibliometric analysis.

This analysis aims to provide a quantitative understanding of citation analysis, co-citation analysis of the most cited publications, co-occurrence analysis, publication patterns, identifying leading authors and institutions, and identifying research themes and

trends within the field by examining publication patterns quantitatively. This analysis guides future employee engagement research and practical applications.

DATA AND METHODOLOGY

Data Source and Selection

An important part of the research process involves choosing a methodology and instrument for data analysis. Using online databases is the best way to acquire data regarding scientific papers. Scopus, Web of Science, Google Scholar, and Medline are the most commonly used databases in bibliometric research (Huo et al., 2022). For this study, the data was retrieved from Scopus published by Elsevier on 28th October 2024. We chose Scopus because of its extensive coverage of academic information sources that ensures high-quality research findings. The present study examines bibliographic data sourced from the SCOPUS database. Scopus is recognized as one of the most comprehensive and reliable databases for bibliometric analysis (Baas et al., 2020). Due to its status as one of the largest journal repositories, SCOPUS encompasses a greater volume of publications. However, using SCOPUS as the primary database for this study does not exclude critical sources, given that corporate governance scholarships are still in its early stages. The study utilized data obtained from the SCOPUS database. To ensure a comprehensive yet straightforward search approach, the term Corporate Governance was applied within the Article Titles, Abstracts, or Keywords filter in SCOPUS.

Criteria	Description
Data Base	Scopus by Elsevier
Keywords	"Work engagement" OR "work-engagement" AND "Human Resource Practice" OR "Human Resource Function" OR "Performance" OR "Training" OR "Career" OR "Recruitment" OR "Talent Acquisition" OR "compensation" OR "Rewards"
Excluded Publication Year	2023
Subject Areas	"BUSI" (Business), "PSYC" (Psychology), "SOCI" (Sociology), "ENVI" (Environmental), "ECON" (Economics), "ENGI" (Engineering), "COMP" (Computer Science), "ARTS" (Arts), "DECI" (Decision Sciences), "HEAL" (Health)
Publication Stage	Final
Document Type	Article
Language	English
Source Type	Journal

Table 1. Parameters of the search strategy.

To analyze data on employee engagement and Human Resource Practice, a search was performed in the Scopus database in October 2024 using "employee engagement" and "Human Resource Practice" as the keywords. At first, this search turned up 1,405 articles. Next, types of documents that were not articles, like books, editorials, and meeting proceedings (18 documents), were taken out because full texts might not be available. Only articles were retained as the chosen document type for this study. The query was thus refined by setting "article" as the document type and excluding 2023 as a publication year. Following this strategy, 1387 records were collected and stored as plain Text files in the "savedrecs.txt" format for further analysis.

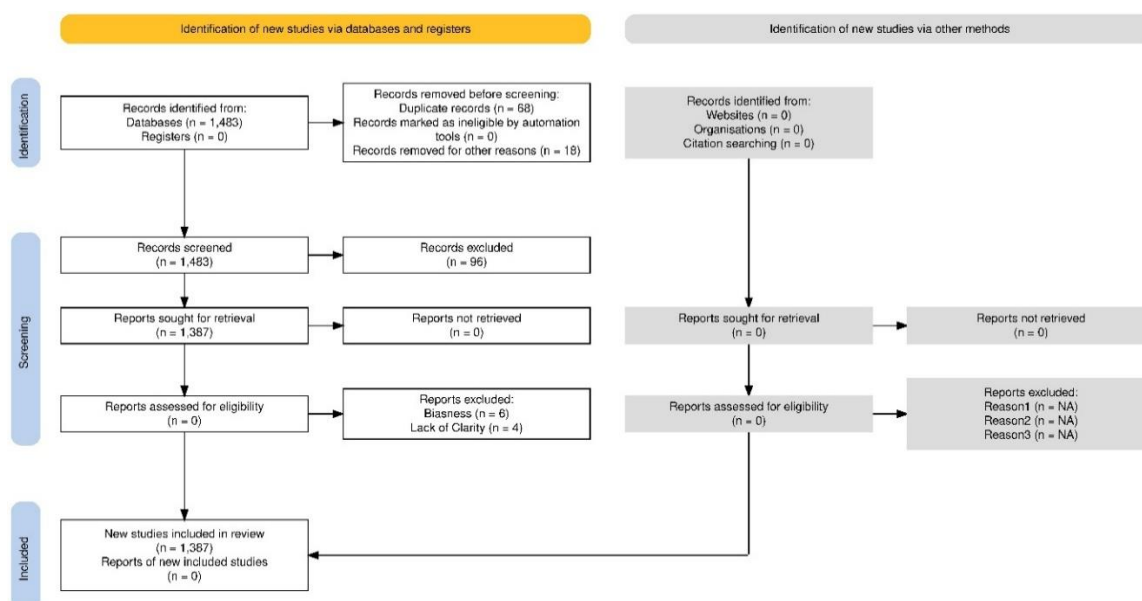


Figure 1: PRISMA flow chart 2020 (Haddaway et al., 2022)

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This study employs a structured literature review methodology using the Scopus database to investigate the relationship between work engagement and human resource (HR) practices. The search strategy incorporates Boolean operators to combine keywords such as "Work engagement" or "work-engagement" with HR-related terms like "Human Resource Practice," "Performance," "Training," and "Recruitment." Publications from 2023 are excluded to focus on established research, and the search is filtered by subject areas including Business, Psychology, Sociology, Economics, and Health to ensure interdisciplinary relevance. Only final, peer-reviewed journal articles in English are considered, maintaining academic rigor. By applying these criteria, the methodology ensures a comprehensive yet targeted review of high-quality literature on how HR practices influence work engagement.

Data Analysis and Visualization

Through bibliometric analysis, researchers can comprehensively view a particular field of study (Merigó et al., 2015). This study used bibliometric methods to analyze research data from the Scopus database, which was statistically focused on employee engagement and human resource practices. Various types of analysis were applied, including citation analysis, co-citation analysis of the most cited publications, and co-occurrence analysis examining different units such as documents, sources, authors, organizations, countries, cited references, and author keywords. To aid in creating and visualizing bibliometric maps, VOSviewer software (version 1.6.20) was utilized (van Eck & Waltman, 2010), enabling insights into the connections between diverse aspects of employee engagement and Human resource practice.

RESULTS AND DATA VISUALIZATION

The idea of employee engagement and HR development has gained significant attention from scholars worldwide, resulting in numerous articles being published across different countries, organizations, and academic journals (Cobo et al., 2011). The dataset for this study was retrieved from the Scopus database and includes 1387 articles, which were published in 541 journals. These articles were authored by 3652 researchers associated with 3000 institutions spread across 103 countries.

Country	Documents	Citations	Total link strength
Malaysia	52	638	170
South Korea	65	1152	224
India	79	645	254
Italy	67	1575	294
Spain	87	3018	322
Australia	66	3119	327
South Africa	66	3233	345
United Kingdom	128	2720	353
Canada	258	3186	355
Germany	52	3088	433
China	65	2659	458
United States	79	9427	904
Netherlands	67	19418	1637

Table 2: Country-wise Publication and Citation

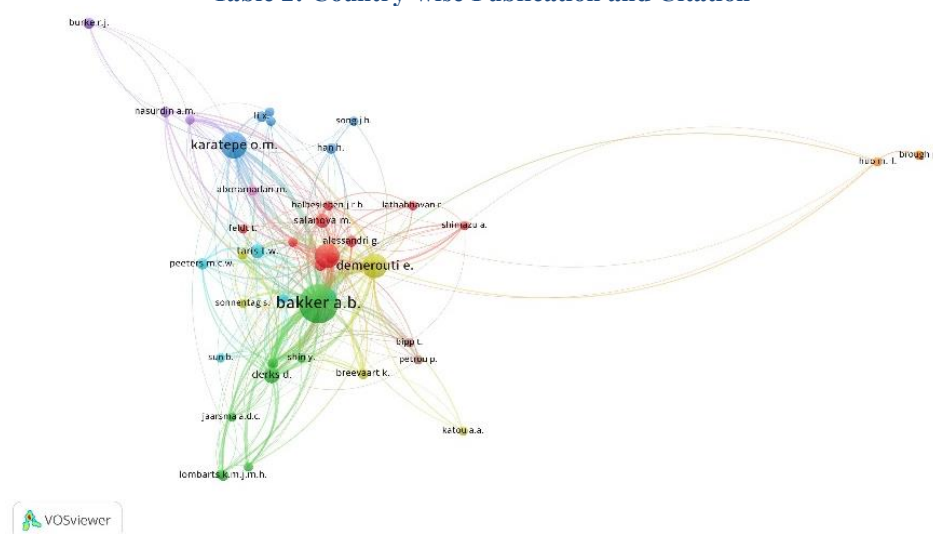
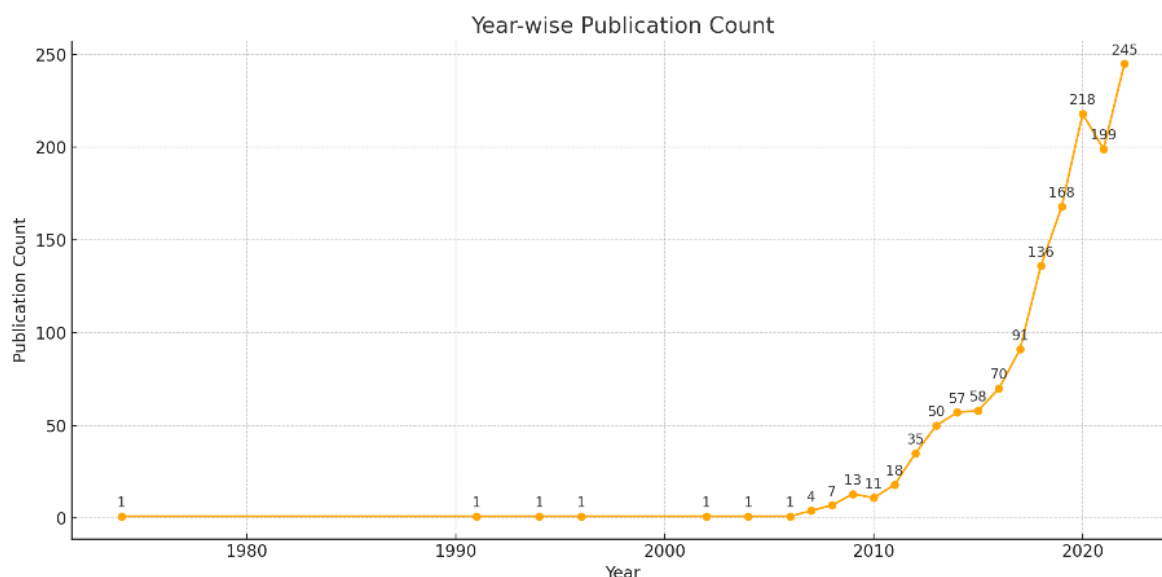


Figure 1. Citation of Authors.

The body of academic literature on employee engagement, as indexed in the Scopus database, has demonstrated a steady increase from 1974 to 2022. During this period, a cumulative total of 1,387 articles were published, offering significant contributions to the field. Figure 1 illustrates the yearly distribution of these publications, providing insights into the dynamic trends and progression of research in human resource development and work engagement.

Figure 2: Year-wise Publication Count



The field of employee engagement research has experienced two distinct publication phases: an initial phase (1974–2012) with irregular growth and a significant growth phase from 2013 to 2022. The first article in the Scopus database appeared in 1974, with a sharp rise in publications beginning in 2013. Approximately 129.45% of studies have been published in the last five years, reflecting the increasing interest in this topic, especially within hospitality and tourism. Both public and private sectors value an engaged workforce for improved performance, with Human Resource Development and Work Engagement demonstrating more dedication and job satisfaction (Huo et al., 2022).

Citation analysis further highlights the impact of this field, showing that 136% of citations are for articles from the last five years, underlining the recent research's influence on the academic community. Overall, the combined analysis of publication growth and citations provides insights into employee engagement research's expanding importance and impact.

An analysis of 1387 articles on Work Engagement identified 3652 authors, with 90% contributing to only one publication, suggesting diverse involvement in the field. Key contributors include Bakker A.B., the most productive author with 59 publications, followed by Schaufeli W.B. and Demerouti E. with 6217 and 5690. Collaboration among authors is visualized in a network of 45 contributors across 9 clusters in minimum number of documents of an author is 5 and minimum citation 1, where Schaufeli W.B. and Demerouti E. having significant collaborative links

Citation and Co-Citation Analysis of the Publications

Out of the 81184 references obtained through the database, only 85 qualified with at least 20 citations each. This particular analysis was conducted quite a number of times to unite robust and equally spread clusters. Setting normalized values, checked against stage limitations, was instrumental in determining the threshold that was capable of producing robust visual images. The most co-cited works with the most citations, Bakker A.B. had 59 (11369), Schaufeli W.B. had 26 (5690) and Demerouti E. had 26 (6217) articles.

Selected ^	Document	Citations	Links
<input checked="" type="checkbox"/>	bakker a.b. (2017)	1868	2
<input checked="" type="checkbox"/>	christian m.s. (2011)	1541	3
<input checked="" type="checkbox"/>	bakker a.b. (2008b)	1433	4
<input checked="" type="checkbox"/>	bakker a.b. (2008a)	1229	5
<input checked="" type="checkbox"/>	tims m. (2012)	853	3
<input checked="" type="checkbox"/>	bakker a.b. (2010)	651	6
<input checked="" type="checkbox"/>	bakker a.b. (2012)	559	5
<input checked="" type="checkbox"/>	halbesleben j.r.b. (2008)	526	3
<input checked="" type="checkbox"/>	xanthopoulou d. (2008)	342	2
<input checked="" type="checkbox"/>	karatepe o.m. (2013)	307	3

Table 3 outlines the most cited author alongside their link strength.

N o	Author	Title	Citation
1	'Anderson, J.C., Gerbing, D.W.'	"Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach"	136
2	'Bakker, A.B., Albrecht, S.L., Leiter, M.P.'	"Key Questions Regarding Work Engagement Bakker, A.B., An Evidence-Based Model of Work Engagement"	121
3	'Bakker, A.B., Bal, P.M.'	"Weekly Work Engagement and Performance: A Study Among Starting Teachers"	118
4	'Bakker, A.B., et.al.'	"Burnout and Work Engagement: The JD-R Approach"	111
5	'Bakker, A.B., Demerouti, E.'	"The Job Demands-resources Model: State of The Art"	101
6	'Bakker, A.B., Demerouti, E.'	"Towards A Model of Work Engagement"	97
7	'Bakker, A.B., et.al.'	"Using the Job Demands-Resources Model to Predict Burnout and Performance"	95
8	'Bakker, A.B., et.al.'	"Job Resources Boost Work Engagement, Particularly When Job Demands Are High"	82
9	'Bakker, A.B., et.al.'	"Job Resources Boost Work Engagement, Particularly When Job Demands Are High"	80
10	'Bakker, A.B., et.al.'	"Work Engagement: An Emerging Concept in Occupational Health Psychology"	76

Table 4. Top ten highest cited documents

According to the mapping model, (Chen et al., 2010) has evidence that co-citation evaluation can draw together four separate clusters.

1. Red Cluster: Core Focus on Work Engagement and Related Outcomes

Central Theme: Work engagement and its direct relationships with workplace outcomes.

The cluster underscores the performance of positive employee engagement which is beneficial at an organizational level, like enhanced job performance, job satisfaction, and success of the organization. It examines the interrelations of work engagement with various workplace factors including styles of leadership, organizational systems, and HRD practices of increasing employee energy, strength and concentration while decreasing exhaustion. The research stresses the importance of active citizenship for the organization, which is motivated by transformational leadership, in acting responsibilities above and beyond the call of duty. Also, the role of value systems, organizational relations and formal and informal communication systems is depicted in enhancing the organization's climate that stimulates engagement and reduces burnout.

At the same time, the cluster also seeks to examine the maintenance of engagement levels for active employees in the face of changes in the work environment, technological developments, and a diverse geographical and age workforce. It analyzes the effectiveness of virtual communication, co-working space and the performance management tool, as well as employee engagement, organizational innovation, and customer satisfaction as an engagement effect outturn. Based on positive psychology, the researches emphasize the need to work on employee's wellbeing and their strong points, thus offering practical tips to practitioners and managers on how to create organizational environment that fosters involvement, increases performance, and responds to ever-changing environmental requirements.

2. Green Cluster: Demographic and Methodological Focus

Theme: Research methods and demographic analyses related to work engagement.

The research being done by the Green Cluster on work engagement highlights the consideration of socio-demographic aspects and the interplay with other such variables as significance to the understanding of how different factors interact and affect the engagement of employees. Investigating such factors as gender, age, and level of education can help scholars to identify trends and patterns that can help in shaping more appropriate and efficient HRD policies. This demographic focus makes it possible for the organizations to design their engagement strategies depending on the targeted employees which would in return be more cost-effective and efficient. Additionally, the cluster's inclination towards controlled studies, experiments, and the employment of quantitative techniques, emphasizes the idea of focus on evidence-based studies on the subject of work engagement. These methodological strategies allow researchers to address particular research questions in a more structured manner and identify links between HR measures and engagement metrics thus, offering agents of practice and policy useful outcomes. Furthermore, with the aid of such systematic analyses, the research in this cluster helps to address the important link between dimensions of engagement and the concepts that are seen as models within organizations.

3. Blue Cluster: Stress and Psychological Factors

Central Theme: The role of stress and mental health in work engagement

The Blue Cluster processes the experience of stress in the work context with detailed research and analysis, presenting a realistic picture on stress and mental health, how it affects work engagement that determines employee performance and well-being. This research topic acknowledges stress as being one of a multiplicity and multi-faceted stress and does not attack stress monolithically, but recognizes stress in multiple forms with multiple effects on the engagement. Motivators are the challenge stressors like tight deadlines or greater responsibility which can motivate employees to perform and solve things innovatively. And, while lack of guidance is not necessarily a hindrance, hindrance stressors, such as highly bureaucratic work or uncertainty about one's role within that work, do hinder performance and diminish engagement. Of course, this distinction is important for companies trying to build the perfect environment where pressure meets support. Additionally, the Blue Cluster highlights that Organizational support and Human Resource Development (HRD) practices play an important role in control of stress and burnout its negative impacts. Taken together, the study suggests that companies can make a big difference in employee engagement by running targeted interventions that take a shot at workload management, offer mental health assets, and advocate a kind workplace culture. Especially in industries with high pressure or in times of organizational change, the risk for burnout is particularly big. Concentrating on these factors enables organizations to enhance personal employee's wellbeing and inculcate more resilient and serious workforce prepared to persist with major performance un nourishing of challenges.

4. Yellow and Purple Clusters: Conceptual Frameworks and Specific Engagement Dimensions

Central Theme: Theoretical models and factors influencing engagement.: The theoretical models and specific factors that affect employee engagement in the conceptual framework are clustered in yellow and purple. These cluster results underscore the role of organizational culture, traits of leadership, and job characteristics in determinants of the level of engagement. It suggests that the Job Demands-Resources (JD-R) model should be considered a central framework governing employee engagement by revealing how different workplace factors have the potential to either activate or rather depress employee engagement. The model in this thesis suggests that job resources (i.e., supportive leadership and autonomy) mitigate negative effects of the job demands (i.e., workload and timeliness) on engagement. Specifically, we highlight leadership styles, especially transformational, authentic, and emotionally intelligent styles that are drivers for engagement within these clusters. It is believed that these are ways to lead that create a good working environment to motivate and commit staff. In addition, the clusters examine a possible interaction between task performance and job demands and engagement. Potential motivators (challenging tasks) serve to increase engagement and stressors (excessive job demands) decrease it. It clarifies the interplay of these factors in their complex nature of work engagement, and serves as the basis to develop effective Human Resource Development (HRD) practices for enhancing employee engagement and organizational performance.

A citation analysis of 1387 articles on work engagement reveals their substantial impact, with a total of 21661 citations. Notably, 49.82% of these articles received at least ten citations, showcasing their influence. The top three articles alone account for 10.54% of citations. A.B. Bakker's study, the most cited with 11,369 citations, explores work engagement's role in organizational success. Demerouti E. with 6217 citations is the second most cited author, focusing on the Job Demands-Resources (JD-R) model. This model is widely used in organizational psychology and occupational health to understand how job demands and resources influence employee well-being, engagement, and performance (Scholze & Hecker, 2024). Schaufeli W.B's article, third with 5,690 citations, defines engagement's conceptual framework, emphasizing its strategic importance.

The primary cluster, highlighted in red, centers on "work engagement" and includes closely related terms such as "job performance," "job satisfaction," and "burnout," indicating a focus on employee well-being, performance, and factors influencing engagement. This cluster also features terms related to job resources, leadership, and organizational citizenship behavior.

The green cluster explores demographic and methodological terms, including "female," "male," "controlled study," and "human experiment." This suggests a focus on research methods and demographic analyses in employee engagement studies. The blue cluster includes terms like "stress" and "job stress," indicating a thematic focus on mental health and psychological factors related to work engagement.

Other clusters, such as yellow and purple, contain terms associated with conceptual frameworks and specific engagement dimensions, such as "organizational culture" and "task performance." The diversity of keywords across clusters provides insight into the varied research areas within the employee engagement field and highlights the thematic breadth of the literature.

DISCUSSION

Strategies and practices of HR development and work engagement

It comes as no surprise that the human resource management aspect provides detailed strategies and practices that maintain HR development and work engagement throughout the organization. HRD concerns the enhancement of employees' skills and competencies in an effort to increase their effectiveness within organizations (Garavan et al., 2012). Work engagement on the other hand is the emotional and cognitive attachment of employees to their work (Schaufeli & Bakker, 2004). Twenty years ago, the topic of work engagement was confined to the field of psychology, and very few scholars attempted to explore it from the perspective of HRM. But over the last two decades, there has been boom in literature in the cross section of these areas as researchers tried to understand the effect of HRD practices on work engagement (Harter et al., 2002). HRD practices such as training, mentoring, and career advancement have been reported to promote employees' work attitudes and therefore their commitment and performance (Aguinis & Kraiger, 2009). Additionally, work engagement has been associated with positive organizational outcomes including increased productivity and lower turnover rates (Bakker & Demerouti, 2008). Several studies also signal the need for leadership and organizational culture in achieving both HRD and engagement (Jerab & Mabrouk, 2023). Highly engaged employees are supposed to be the best users of HRD programs, as their attitude is typically more positive about learning and change (Xanthopoulou et al., 2009). Moreover, the link between HRD and work engagement is influenced by job resources, personal development and supportive context (Sekhar et al., 2018). Researchers also note the importance of technology in present day HRD. In the interactive digital workspace, employee engagement is enhanced by the practice's impact on the employee. (Saks, 2006). Future research directions involve examining cross-cultural differences in HRD and work engagement, as well as integrating new methods of engagement in HRD strategies (Tims et al., 2013).

Conceptual Frameworks and Specific Engagement

A bibliometric review of conceptual frameworks and specific engagement, stress, and psychological factors reveals the interconnectedness of these constructs within psychological research. Engagement, a multifaceted construct, has been extensively defined in terms of cognitive, emotional, and behavioral components, with theoretical frameworks often exploring how these elements influence individual well-being and productivity (Kossyva et al., 2023). Stress, similarly, is examined through various models such as the Transactional Model of Stress (Spătaru et al., 2024), which addresses how individuals appraise and cope with stressors. Psychological factors, including personality traits and coping mechanisms, play a significant role in mediating the relationship between stress and engagement (R. Karasek & Theorell, 2016). A comprehensive understanding of these factors requires integrating concepts from social, organizational, and clinical psychology. For instance, the Job Demand-Control Model (R. A. Karasek, 1979) and the Conservation of Resources Theory (Hobfoll, 1989) highlight how external pressures and available resources can either buffer or exacerbate stress. Meanwhile, frameworks such as the Job Demands-Resources Model ((Bakker & Demerouti, 2007) propose that engagement results from an interplay between job demands and available resources, with individual psychological characteristics influencing the outcomes. Research has increasingly pointed out the need for personalized interventions, as individual differences such as emotional regulation and resilience can significantly impact stress and engagement outcomes (Tugade & Fredrickson, 2004). Bibliometric analyses indicate a growing interest in understanding the psychological dimensions of engagement, particularly in relation to work-related stress (Christian et al., 2011). The review further highlights the application of these frameworks across diverse settings, including healthcare, education, and corporate environments (Dusin et al., 2023).

Research Gaps and Future Directions

Advancing work engagement research requires identifying key areas needing further study, particularly in leadership, technology, and work environments. Current research highlights the influence of transformational leadership on engagement, but more investigation is needed into the

impact of other styles, such as authentic, ethical, and servant leadership. Additionally, digital tools like communication platforms and reward programs are recognized for enhancing engagement by improving information access, flexibility, and workflow speed. Understanding these technologies' full impact remains a research priority. Furthermore, work environment factors, such as positive culture and innovative work arrangements like remote work, are essential for fostering engagement (Bilderback & Kilpatrick, 2024). Addressing these gaps will deepen insights into work engagement drivers and aid in developing strategies to enhance workplace engagement, benefiting scholarly research and practical applications for organizations aiming to boost productivity and employee satisfaction.

CONCLUSION

Work engagement has become a newly focus area for organizations all around the globe. Employees that are engaged are greater productive, committed, and aligned participants in the business. This study provides a bibliometric analysis of 1387 Scopus articles from 1974 to 2022 analyzing the work engagement research. It assesses input from various countries, institutions, journals, and writers, offering an international research context. Results show that contributions in the USA are the highest, and that the Netherlands has high international collaboration with co-authorship networks extending across 103 countries. The key research hub Utrecht University is listed in the contact details (and Bakker A.B. is listed as corresponding author). Key journals include job satisfaction, corporate social responsibility and organizational commitment. Research by Bakker et al. highlights the relationship of work engagement to HRD linking engagement to productivity and customer satisfaction.

New themes are pointing towards new research avenues, such as the influence of leadership styles, digital technologies and changing models of work on engagement and HRD. Keyword trends provide guidance for researchers working in these fields. Though, this research is limited due to dependency upon Scopus and narrow search scope. Future studies should involve additional databases and wider search parameters for a complete view. Purpose HRD (Human Resource Development) researchers have studied work engagement (WE) over the past two decades in the scholar's publication. Focusing on the trends observed in this special issue of 1387 articles reveals that researchers have increasingly paid attention to HRD practices and their association with engagement. Formal HRD interventions, including training, career development, and leadership support, are critical for engagement improvement through achievement of skills, confidence, and motivation. Employees who are highly engaged show more productivity, satisfaction and commitment, and less turnover and absenteeism.

Key themes are identified such as leadership impact, workplace culture, and job resources for the analysis. Engagement and satisfaction cannot last without transformational leadership and a supportive work environment. Stress and psychological factors which can both facilitate or detract from engagement. The JD-R model is a conceptual tool to demonstrate the inverse relationship of job resources acting as a buffer against the negative impact of job demands, supporting engagement and well-being (Bakker et al., 2014). Co-citation and keyword co-occurrences mapped networks provides insight on how research themes are connected by bibliometric visualizations. Relevant themes are related to demographics, research design and technology in HRD. The dynamics of the workplace are evolving as trends like digital tools and remote work have proliferated and HRD that is flexible with these changes

Research gaps still exist despite this progress. The current study discusses perceived leadership, future studies can examine how authentic and servant leadership impact engagement. Sifting through how technology affects engagement, especially within remote and hybrid work models, is a whole different story that requires priority needling. Such cross-cultural work is also needed in order to understand how HRD practices and engagement strategies may differ across organizational and cultural contexts. This is adding to the literature in HRD and work engagement by way of key trends, seminal studies, and future directions for research. These results provide organizations with actionable advice about implementing HRD strategies to improve involvement. Creating an environment that is supportive for employees, investing in learning and ensuring the right technological solutions are implemented will help you related to a workforce that is more engaged and prepares your business for the long run. As such, this study paves the way for more research to be conducted and for academic and practitioners to investigate the more novel direction on how to improve work engagement in the changing landscape of workplace.

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