

# REMOTE WORK AND ITS IMPACT ON EMPLOYEE ENGAGEMENT AND PRODUCTIVITY: A BIBLIOMETRIC ANALYSIS

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## **Abstract**

*In recent years, the field of remote working has seen significant growth in research and practical implications, primarily influenced by the COVID-19 pandemic. The adoption of remote work has significantly influenced organizational practice and employee experience, leading to a number of published articles discussing these topics. The present study analyzes the development of research on remote work and its impact on employee engagement and productivity using bibliometric analysis. To comprehend and analyze the growing body of literature this study uses VOSviewer tool and Scopus database. A total of 969 publications were retrieved from Scopus database to explore research trend in this field. Utilizing the SCOPUS database, we examined 969 articles published in reputed journals in management, psychology, and social sciences from 2015 to 2024. In this study analyzed total citation, most cited publication, leading author and journal and national contribution. The research utilized descriptive analysis and science mapping methods to provide meaningful insights for researchers, pinpointing key foundational works and collaborative networks. The result provided a clear understanding of current research and indicated potential areas of future study. Future research is encouraged to broaden the scope and utilize additional databases for a more comprehensive analysis.*

## **Keywords:**

*Remote Work, Work from Home, Employee Engagement, Employee Productivity, Bibliometric Analysis, COVID-19*

## **1. INTRODUCTION**

The concept of remote work, also referred to as telecommuting or working from home, has gained significant attention in recent years, particularly due to the global COVID-19 pandemic. Organizations worldwide adopted remote working models to ensure business continuity amid lockdowns and social distancing mandates, transforming the traditional office setup [1]. This shift has triggered a growing interest in understanding the impact of remote work on critical organizational outcomes, specifically employee engagement and productivity.

According to the International Labour Organization (ILO), remote work is defined as “work that is carried out away from the employer's premises, typically from the worker's home or another location of their choice, using information and communication technologies (ICTs) to perform tasks and communicate with colleagues” [2].

Remote work, once a niche practice, has evolved into a mainstream organizational strategy. Advancements in technology and communication tools have enabled employees to work from almost any location, offering flexibility and reducing commuting time. However, despite the benefits, remote work presents challenges that can affect both employee engagement and productivity. For instance, while some studies highlight improved work-life balance and greater autonomy as contributors to higher productivity [3], others emphasize the negative effects of

isolation, lack of direct supervision, and communication difficulties on both engagement and work performance [4], [5].

Employee engagement is defined as the emotional and psychological connection employees feel towards their organization, which drives motivation and commitment. Engaged employees are more likely to contribute positively to organizational performance and exhibit higher job satisfaction [6]. However, the transition to remote work disrupts traditional methods of fostering engagement, such as face-to-face interactions, team collaboration, and shared organizational culture [7]. On the other hand, employee productivity, which refers to the efficiency and output of individual performance, is also subject to varying influences in a remote environment. While some studies suggest that remote work enhances productivity due to fewer office distractions and flexible working hours [8], others raise concerns about reduced accountability and difficulty in maintaining work routines [9].

Given the increasing prevalence of remote work and the mixed findings on its impact, a comprehensive examination of literature is necessary. The need for mapping of research trends has become critical to advancing knowledge in this area. Bibliometric analysis, a method used to analyse academic literature quantitatively, offers a robust approach to identifying key studies, trends, and gaps in research [10]. By employing bibliometric tools, this study aims to explore the evolution of research on remote work and its effects on employee engagement and productivity.

Using the Scopus database, this study conducts a bibliometric analysis to assess publication trends, key authors, leading journals, and thematic trends in remote work literature published from 2019 to 2026. Analytical tools such as VOSviewer and Scopus's built-in analysis features are utilized to generate visual maps and descriptive statistics of the research landscape. VOSviewer is a software tool developed by van Eck and Waltman (2010) [11] for creating and visualizing bibliometric networks, such as citation, co-citation, and keyword co-occurrence networks. It is particularly useful for conducting bibliometric analysis and science mapping. The tool allows users to analyse large amounts of bibliometric data and visualize the relationships between different elements, such as authors, journals, and keywords, in a way that highlights trends and patterns in the research literature. VOSviewer supports various types of bibliometric data and offers interactive features that facilitate the exploration of complex networks. These tools allow us to identify co-authorship networks, citation relationships, and keyword co-occurrences, thereby offering insights into the most influential studies and emerging themes in the field.

This study aims to compile and analyse the literature on remote work and its impact on employees through bibliometric methods, addressing the previously identified concerns by exploring the following research questions.

- What are the key contributions in literature on remote work and its impact on employee engagement and productivity, considering the leading authors, journals, countries, and publication years?
- What are the primary themes in literature on remote work and its impact on employee engagement and productivity?

The findings from this analysis will contribute to a better understanding of the current state of research on remote work and its impact on employee engagement and productivity.

## 2. LITERATURE REVIEW

The rise of remote work has garnered significant academic interest, especially in the context of its impact on employee engagement and productivity. This literature review synthesizes research on remote work, focusing on its implications for employee engagement, productivity, and associated factors. The review is organized into three main sections: the evolution of remote work, its impact on employee engagement, and its effect on productivity.

### 2.1 EVOLUTION OF REMOTE WORK

Remote work, also known as telecommuting or telework, has evolved from a niche practice into a mainstream work arrangement, driven by advancements in technology and shifting organizational needs [7]. Initially adopted by specific sectors, the practice gained momentum due to its potential to enhance work-life balance and operational flexibility [9]. The COVID-19 pandemic further accelerated this trend, as organizations worldwide were compelled to transition to remote work to comply with health and safety regulations [3].

Research indicates that the evolution of remote work has been facilitated by technological advancements, including the proliferation of high-speed internet and digital communication tools [12]. These technologies enable employees to work effectively from various locations, thereby challenging traditional notions of workplace boundaries [13].

### 2.2 IMPACT ON EMPLOYEE ENGAGEMENT

Employee engagement refers to the emotional commitment employees have towards their organization, which influences their motivation and performance [6]. Remote work has a complex relationship with employee engagement, as it introduces both opportunities and challenges. Remote work can enhance engagement by providing employees with greater autonomy and flexibility [7]. Employees who work remotely often experience reduced commuting stress and improved work-life balance, leading to higher job satisfaction and engagement [8]. Additionally, remote work can facilitate a more inclusive work environment for employees with disabilities or those in different geographic locations [14].

Conversely, remote work can also pose challenges to employee engagement. The lack of face-to-face interactions may lead to feelings of isolation and detachment from the organization [5]. The absence of direct supervision and physical presence can affect employees' sense of belonging and connection to their teams [15]. Research by Gallup [16] found that remote workers often report lower levels of engagement compared to their in-

office counterparts, highlighting the need for effective virtual management practices.

### 2.3 IMPACT ON PRODUCTIVITY

The relationship between remote work and productivity is also multifaceted, with varying outcomes reported in the literature. Many studies suggest that remote work can lead to increased productivity due to fewer office distractions and the ability to create a personalized work environment [8]. Remote workers often have greater control over their work schedules, which can enhance focus and efficiency [12]. Additionally, remote work can reduce absenteeism and turnover rates, contributing to overall productivity [13].

However, remote work can also present challenges to productivity. The potential for work-home boundary blurring and the lack of structured work environments may lead to decreased productivity for some individuals [9]. Issues such as inadequate home office setups, technological disruptions, and difficulties in team coordination can impact work performance [7]. A meta-analysis by [17] found that the productivity effects of remote work vary depending on the nature of the work and the individual's ability to self-manage.

## 3. METHODOLOGY

### 3.1 DATA SOURCE AND SEARCH STRATEGY

To conduct a comprehensive bibliometric analysis, we utilized the Scopus database, a leading resource for academic literature. The search strategy was designed to capture a wide range of relevant studies on remote work, employee engagement, and productivity. The search string employed was:

("Remote Work" OR "Telecommuting" OR "Work from Home") AND ("Employee Engagement" OR "Workplace Engagement") AND ("Employee Productivity" OR "Work Productivity" OR "Performance") AND PUBYEAR > 2014 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "PSYC")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English"))

This search strategy was designed to capture articles that explore remote work and its effects on employee engagement and productivity, focusing on recent publications (2015 to 2024) and restricting the search to peer-reviewed journal articles. The subject areas included business, social sciences, and psychology, ensuring a comprehensive view of the topic. Additionally, only English-language articles were included to maintain consistency and accessibility of the data.

## 4. ANALYTICAL TOOLS

For bibliometric analysis, VOSviewer and Biblioshiny used as a primary tool. This tool was employed for visualizing and analysing bibliometric networks. It helped in creating co-authorship, co-citation, and keyword co-occurrence maps, facilitating the understanding of the relationships and trends within the literature. Scopus's built-in analysis features were utilized to generate descriptive statistics, including publication trends, citation counts, and leading journals and authors. These

tools provided insights into the impact and dissemination of research on the topic.

4.1 ANALYSIS TECHNIQUES

To explore the literature on the impact of remote work on employee engagement and productivity, several bibliometric tools were utilized. Descriptive Analysis technique was used to summarize the general characteristics of the collected data, including publication trends over time, the most frequently cited papers, and the top journals and authors in the field.

Citation analysis helped track the influence and reach of key studies, while keyword analysis identified recurring themes and research focuses in the literature. Co-citation analysis revealed the relationships between commonly cited papers, highlighting important works that shaped the field.

Additionally, co-author analysis was employed to explore collaboration patterns between researchers, showing which scholars frequently worked together. Bibliographic coupling linked papers based on shared references, revealing connections between studies, while keyword co-occurrence analysis mapped out common topics, providing insight into the major themes in the literature. These tools collectively offered a detailed understanding of the research landscape.

5. RESULTS

The initial search on Scopus yielded a total of 1,488 documents. After narrowing the results to the period between 2015 and 2024, 1,444 articles remained. Further refinement by subject areas, including Business, Management, Accounting, Social Sciences, and Psychology, reduced the dataset to 1,234 records. Limiting the results to peer-reviewed articles brought the total to 979, and restricting the language to English left 969 relevant articles for analysis (Fig.1).

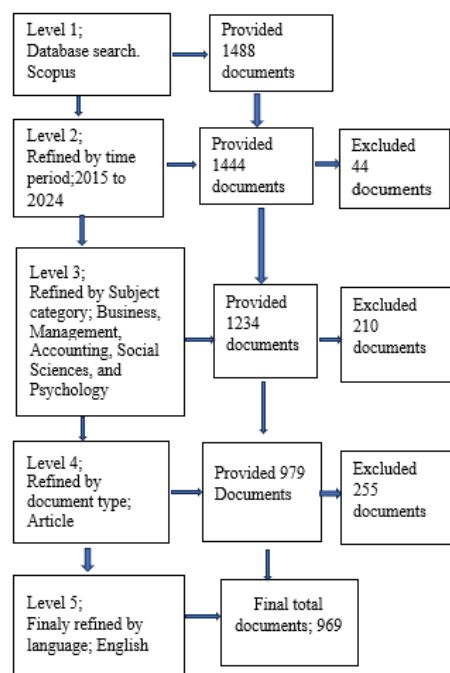


Fig.1. Data Refinement Process

5.1 MAIN INFORMATION ABOUT DATA

From 2015 to 2024, this dataset covers 969 articles drawn from 431 sources, exhibiting a 51.03% annual growth rate. The average document age is 2.43 years, with each article receiving about 12.3 citations. Notably, there are 2,700 authors overall, and international collaborations account for 29.31% of the research, supported by an average of 3.2 co-authors per paper (Fig.2).



Fig.2. Main information about data

5.2 DESCRIPTIVE ANALYSIS

This section explores the first research question by highlighting key contributions to impact of remote work on employee productivity literature, focusing on influential authors, prominent journals, leading countries, and publication trends over the years.

5.2.1 Publication Trends:

A review of the publication trends from 2015 to 2024 (Fig.3) shows a significant rise in research focused on remote work, employee engagement, and productivity. The number of published articles remained relatively low between 2015 and 2019, with fewer than 20 articles per year. However, starting in 2020, there was a steep increase, peaking at 327 articles in 2024. This growth likely reflects the surge in academic interest driven by the widespread adoption of remote work during the COVID-19 pandemic.

Table.1. Number of Documents Published per Year

Year	Articles
2015	8
2016	5
2017	15
2018	14
2019	16
2020	28
2021	68
2022	196
2023	292
2024	327

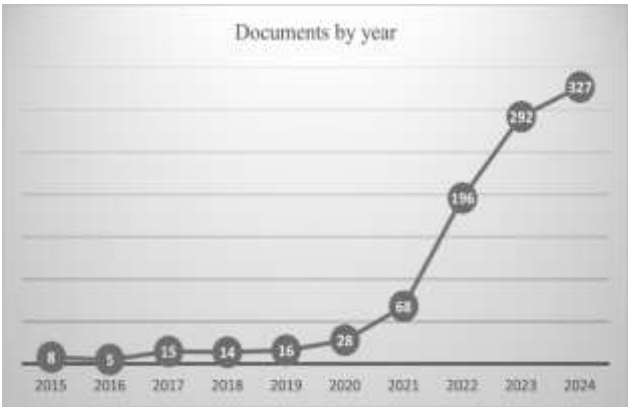


Fig.3. Publication Trends on Remote Work, Employee Engagement, and Productivity (2015–2024)

5.2.2 Geographical Perspective:

As shown in Fig.4, the distribution of documents by country reveals that the United States leads with 200 publications, followed by India with 167. The United Kingdom and China contribute 74 and 72 documents, respectively. Other notable contributors include Indonesia (49), Malaysia (47), Australia (43), Germany (40), Italy (37), and Saudi Arabia (36). This distribution highlights the global research interest in remote work and its impact on employee productivity and engagement.

Table.2. Top Countries with the Number of Documents

Country	Documents
USA	200
India	167
UK	74
China	72
Indonesia	49
Malaysia	47
Australia	43
Germany	40
Italy	37
Saudi Arabia	36

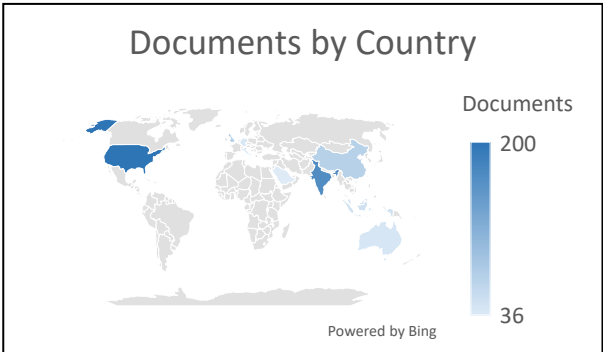


Fig.4. Distribution of research publications by country

5.2.3 Author Contributions (Publication-Based):

As illustrated in Fig.5, the most prolific contributor to research on remote work and its impact on employee productivity and

engagement is Parayitam, S., with 11 publications. Van Zoonen, W. follows with 6, while Behl, A. has contributed 5 documents. Several other authors, including Endri, E., Korunka, C., Lim, W.M., Oksanen, A., Palumbo, R., Pereira, V., and Razzak, M.R., have each contributed 4 publications to this field. This data highlights the key authors who have shaped current research on the topic.

Table.3. Authors With Maximum Documents

S. No.	Authors	Documents
1	Parayitam S	11
2	Kumar S	8
3	Singh S	7
4	Van Zoonen W	7
5	Wang Y	6
6	Behl A	5
7	Kumar V	5
8	Endri E	4
9	Kim J	4
10	Korunka C	4

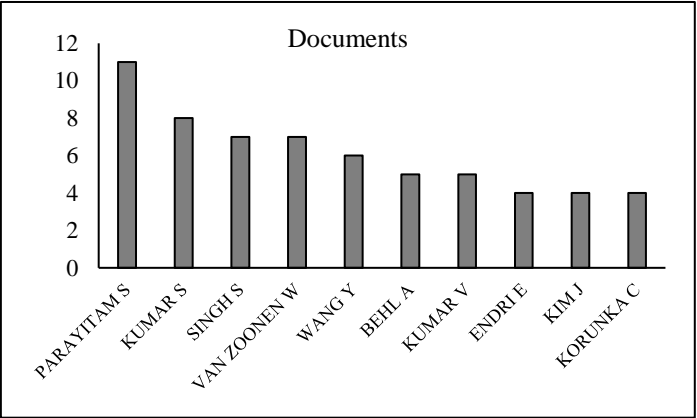


Fig.5. Top 10 authors contributing to research on remote work and its impact on employee productivity and engagement.

5.2.4 Journal Outlets:

Sustainability (Switzerland) leads with 47 articles, followed by Frontiers in Psychology with 40. Additional contributions from the International Journal of Organizational Analysis, Personnel Review, Cogent Business and Management, International Journal of Manpower, and Current Psychology provide further insights, while the International Journal of Human Resource Management, Journal of Knowledge Management, and SA Journal of Human Resource Management each add valuable perspectives to the literature on remote working and its impact on employee productivity and performance (Table.4).

Table.4. Top Journals with Documents

Sl. No.	Sources	Articles
1	Sustainability (Switzerland)	47
2	Frontiers In Psychology	40

3	International Journal of Organizational Analysis	22
4	Personnel Review	17
5	Cogent Business and Management	14
6	International Journal of Manpower	14
7	Current Psychology	13
8	International Journal of Human Resource Management	10
9	Journal Of Knowledge Management	10
10	Sa Journal of Human Resource Management	10

5.3 SCIENCE MAPPING

To address our second research question, we employed the following science mapping approaches.

5.3.1 Citation Analysis:

The citation metrics highlight seminal works in remote work research. Derks (2015) leads with 294 citations, emphasizing its pivotal role in examining the impact of smartphone use on work–home boundaries. Akkermans (2017) and Davidescu (2020), with 243 and 231 citations respectively, further validate the relevance of career crafting and work flexibility in this field. Additionally, studies by Shockley (2017), Palumbo (2020), and Bartsch (2021) have garnered significant citations, collectively underscoring the influential nature of research addressing work–life balance, leadership, and crisis-induced digital transformations.

Table.5. Top Cited Papers

Author	Title	Citation
Derks D, 2015	Smartphone use and work–home interference: The moderating role of social norms and employee work engagement	294
Akkermans J, 2017	Crafting your Career: How Career Competencies Relate to Career Success via Job Crafting	243
Davidescu Aa, 2020,	Work Flexibility, Job Satisfaction, and Job Performance among Romanian Employees—Implications for Sustainable Human Resource Management	231
Shockley Km, 2017	Disentangling the relationship between gender and work-family conflict: An integration of theoretical perspectives using meta-analytic methods	226
Palumbo R, 2020,	Let me go to the office! An investigation into the side effects of working from home on work-life balance	218
Chowdhury S, 2023	Unlocking the value of artificial intelligence in human resource management through AI capability framework	211
Bartsch S, 2021	Leadership matters in crisis-induced digital transformation: how to lead service employees effectively during the COVID-19 pandemic	208
Oldham Gr, 2016	Job design research and theory: Past, present and future	202

Raišienė Ag, 2020	Working from Home—Who Is Happy? A Survey of Lithuania’s Employees during the COVID-19 Quarantine Period	189
Chanana N, 2021	Employee engagement practices during COVID-19 lockdown	182

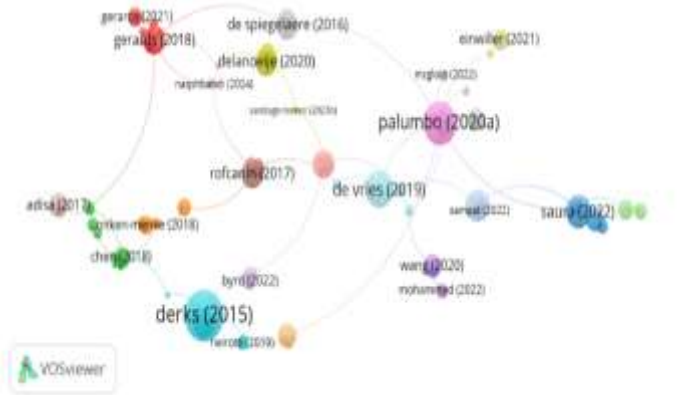


Fig.6. Visualization diagram of citation network

5.3.2 Co-Authorship Network Analysis:

The co-authorship network, visualized using VOSviewer, identified 33 authors grouped into 5 clusters: 9, 7, 6, 6, and 5 authors respectively. The network shows 83 links with a total link strength of 91, indicating moderate collaboration within the research field. The largest cluster (9 authors) reflects a core group of leading researchers, while the remaining clusters suggest smaller, more focused research groups. This pattern reveals both central and fragmented collaborations in the study of remote work and its impact on employee engagement and productivity (Fig.7).

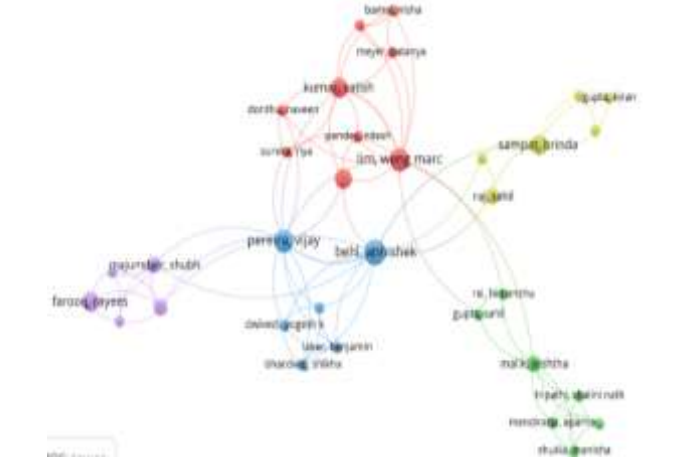


Fig.7. Co-authorship network of authors

5.3.3 Keyword Co-Occurrence Network Analysis:

The co-occurrence keyword analysis, visualized using VOSviewer, reveals a network of 92 keywords distributed across 5 clusters. The network includes 1464 links, reflecting strong associations between terms in the literature. The most prominent keywords are COVID-19, remote work, work engagement, job satisfaction, employee performance, and employee productivity. These keywords highlight the core themes of recent research, emphasizing the impact of the pandemic on various aspects of work arrangement and employee outcomes.





in understanding the multifaceted effects of remote work on both individuals and organizations.

The analysis of author keywords, as illustrated in Fig.9, highlights key terms such as COVID-19, teleworking, remote working, pandemic, and work from home. These keywords dominate literature, underscoring the central role of the pandemic in reshaping work environments. The frequent co-occurrence of terms like engagement and well-being indicates a growing concern with the psychological and emotional impacts of remote work. Researchers are increasingly focused on how remote work influences employee motivation, job satisfaction, and overall mental health. The interconnectedness of these keywords reflects an ongoing exploration of how remote work arrangements affect various dimensions of employee experience and organizational effectiveness.

In examining the co-citation network of journals presented in Fig.11, several key publications emerge as influential sources in the field. The Journal of Sustainability is notably central, reflecting the importance of sustainability in discussions about remote work. This journal's prominence highlights the growing recognition of remote work as a factor in reducing environmental impact and promoting corporate social responsibility. The Journal of Applied Psychology is frequently co-cited for its contributions to understanding the psychological aspects of remote work, including employee well-being and engagement. Similarly, Human Resource Management Review and Academy of Management Journal play crucial roles in exploring the strategic and managerial dimensions of remote work, such as HR practices and leadership in virtual environments.

These co-citation patterns reveal thematic clusters that dominate current research. The first cluster, centred around COVID-19 and remote work, addresses the immediate impacts of the pandemic on work practices and organizational responses. The second cluster focuses on the psychological and behavioural aspects of remote work, with a particular emphasis on employee engagement and well-being. The third cluster revolves around human resource management and organizational behaviour, highlighting the strategic adjustments organizations must make to effectively manage remote teams and maintain productivity.

The insights gained from this analysis suggest several directions for future research. While the pandemic has significantly shaped the discourse on remote work, it is crucial to investigate the long-term sustainability of remote work practices and their effects on organizational and employee outcomes in a post-pandemic context. Additionally, further exploration is needed on how technological advancements can enhance remote work experiences and address challenges related to collaboration and performance. Expanding research to include the impact of remote work on innovation, creativity, and organizational culture will provide a more comprehensive understanding of its broader implications.

Overall, bibliometric analysis underscores the evolving nature of remote work research and highlights the need for continued exploration of its various dimensions. The findings reveal a complex interplay between the benefits and challenges of remote work, offering valuable insights for both scholars and practitioners aiming to optimize remote work environments and enhance employee engagement and productivity.

## 7. LIMITATION

The bibliometric analysis has certain limitations. Firstly, focus on specific databases like Scopus may exclude relevant studies from other sources, potentially narrowing the scope of the review. Secondly, the analysis predominantly covers English-language publications, which may overlook significant research in other languages. Additionally, while the study highlights trends and key themes, it does not account for the quality or depth of individual studies, which may affect the overall interpretation of the research landscape. Finally, the reliance on keyword and co-citation data may not capture emerging or niche areas within the broader field of remote work research.

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