

Trends In Workforce Diversity And Team Performance Research: A Bibliometric Study Using Bibliometrix And Vosviewer

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Abstract

Diversity encompasses the range of individual differences in attributes such as gender, age, ethnicity, and experiences, influencing team dynamics, innovation, and organizational performance. This study presents a bibliometric analysis of diversity research spanning 1997 to 2024, utilizing Bibliometrix and VOS viewer to examine publication trends, influential studies, and emerging themes. An annual growth rate of 18.55% highlights the growing importance of diversity as a key factor in enhancing organizational performance and sustainability, with a marked increase in publications since 2020 aligning with global efforts to advance equity, inclusion, and corporate social responsibility (CSR). Using a Scopus dataset, the analysis identifies foundational contributions, such as those by Campbell (2008) and Terjesen (2009), which established critical links between gender diversity and boardroom performance. Thematic mapping demonstrates a shift from broad diversity dimensions, like gender and functional diversity, to more focused areas, such as top management team diversity and workforce dynamics. By systematically reviewing trends, gaps, and developments in diversity research, this study offers valuable insights for academics and practitioners, suggesting future research explore contextual influences, interactions among diversity dimensions, and the conditions that enable diversity to enhance organizational success.

Keywords: Diversity, Bibliometric Analysis, Bibliometrix, VOSviewer, Organizational Performance, Top Management Team Diversity, Workforce Diversity, Corporate Social Responsibility, Gender Diversity, Team Dynamics

1. INTRODUCTION

Diversity research has gained significant attention across multiple disciplines, including management, organizational behavior, sociology, and psychology. As organizations increasingly emphasize the value of fostering diverse and inclusive environments, scholarly investigations into diversity have grown substantially. Researchers have examined various aspects of diversity such as gender, age, ethnicity, nationality, educational background, and functional diversity to understand their impact on organizational performance, decision-making, innovation, and workplace dynamics. Given the expanding scope of research in this field, it is crucial to systematically analyze its development, key contributions, and emerging trends. Bibliometric and scientometric analyses offer a systematic method for assessing research trends by examining publication patterns, citation networks, co-authorship structures, and thematic developments. These analytical approaches help to identify influential studies, prominent authors, leading institutions, and the evolution of key research themes over time. Utilizing bibliometric tools like Bibliometrix and VOSviewer, this study seeks to map the intellectual framework of diversity research and highlight its significant advancements. This study adopts a scientometric approach to investigate diversity research, focusing on the following key questions:

What are the major research trends in diversity studies over time?

Who are the most influential authors, journals, and institutions contributing to this field?

How has the conceptual structure of diversity research evolved, and what are the emerging themes?

What are the key gaps and future directions for research in diversity studies?

To address these questions, this study draws data from Scopus and applies co-citation analysis, keyword co-occurrence analysis, and network visualization techniques. The results provide a comprehensive

understanding of the historical trajectory, current status, and potential future research avenues in diversity studies, enabling scholars and practitioners to build upon existing literature and explore new research directions. By conducting this bibliometric analysis, we aim to deliver a holistic perspective on diversity research, positioning it within the broader academic landscape while identifying key trends and areas that warrant further investigation.

2. LITERATURE REVIEW

Diversity research has evolved significantly, spanning multiple dimensions such as workforce composition, corporate governance, and organizational performance. This review synthesizes existing literature on diversity's impact on corporate performance, governance, team dynamics, and sustainability, highlighting key theoretical perspectives and research gaps.

2.1 Diversity and Corporate Performance

A substantial body of research explores the relationship between diversity and firm performance, with mixed findings. Studies suggest that diversity in organizations can lead to improved decision-making, innovation, and financial performance by incorporating diverse perspectives and problem-solving approaches (Richard et al., 2000). However, others highlight potential challenges such as communication barriers, social categorization, and conflict, which may offset diversity's benefits if not managed effectively (Milliken & Martins, 1996).

2.1.1 Workforce Diversity and Innovation

Research indicates that workforce diversity comprising variations in age, gender, nationality, and functional backgrounds enhances creativity, innovation, and knowledge sharing (van Knippenberg et al., 2004). Functional diversity, in particular, has been associated with higher team adaptability, as it fosters cognitive diversity and broader problem-solving approaches (van Knippenberg et al., 2004).

2.1.2 Board Diversity and Firm Value

Board diversity, particularly gender and cultural diversity, has received considerable attention in governance literature. Studies suggest that gender-diverse boards improve corporate decision-making, stakeholder engagement, and risk management, leading to better firm performance (Adams & Ferreira, 2009). However, the effectiveness of board diversity is contingent on factors such as industry type, board independence, and regulatory environments (Terjesen et al., 2016).

2.1.3 Diversity and ESG Performance

With the rise of Environmental, Social, and Governance (ESG) frameworks, diversity is increasingly viewed as a strategic asset rather than just a compliance measure. Research suggests that firms with diverse leadership teams tend to perform better on social responsibility and sustainability metrics, as diverse boards and workforces foster inclusive decision-making and ethical business practices (Aguinis & Glavas, 2012).

2.2 Diversity and Corporate Governance

Corporate governance studies emphasize the role of diversity in influencing board effectiveness, executive decision-making, and shareholder confidence.

2.2.1 Gender Diversity and Governance Outcomes

Research in agency theory suggests that gender-diverse boards enhance monitoring and oversight, reducing agency costs and managerial opportunism (Carter et al., 2003). Gender diversity is also linked to improved corporate ethics, reduced financial misconduct, and greater transparency in firms (Gul et al., 2011).

2.2.2 The Role of Cultural and Functional Diversity in Leadership

Beyond gender, cultural and functional diversity in top management teams (TMTs) influences strategic decision-making, risk-taking behavior, and firm adaptability (Hambrick et al., 1996). Studies show that culturally diverse executive teams bring diverse cognitive frameworks, enhancing strategic agility and market responsiveness (Nielsen & Nielsen, 2013).

2.3 Diversity and Team Dynamics

At the workforce level, diversity impacts team cohesion, communication, and performance. The team diversity-performance link is influenced by factors such as inclusive leadership, cultural intelligence, and conflict management (Van Knippenberg & Schippers, 2007).

2.3.1 The Benefits and Challenges of Team Diversity

Diverse teams are known for their higher problem-solving abilities and adaptability, particularly in knowledge-intensive industries (Jehn et al., 1999). However, diversity may also lead to social categorization and subgroup formation, which can hinder team performance if not managed effectively (Chatman & Flynn, 2001).

2.3.2 The Role of Cultural Intelligence and Inclusive Leadership

Recent research emphasizes cultural intelligence (CQ) as a critical moderator in diverse teams. High-CQ teams navigate cross-cultural communication effectively, leading to better collaboration and performance (Rockstuhl & Ng, 2008). Similarly, inclusive leadership plays a crucial role in leveraging diversity while minimizing interpersonal conflict (Carmeli et al., 2010).

3. Research Methodology:

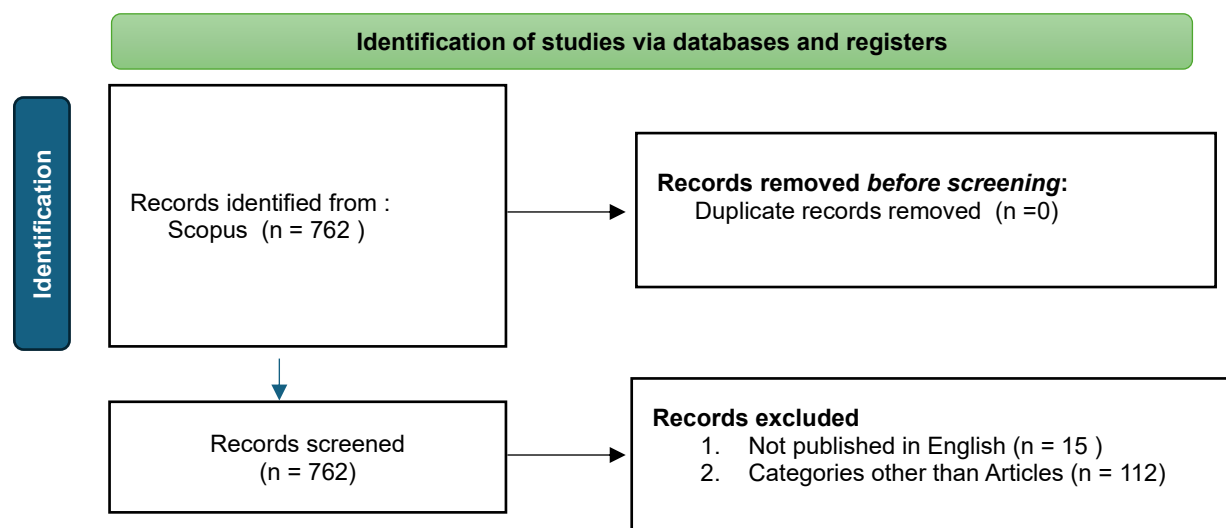
3.1 Research Method:

Bibliometric methodology is a quantitative approach to analyzing academic literature, aimed at uncovering patterns, trends, and key contributions within a field. By analyzing citation networks, co-authorship links, and keyword frequency, bibliometric studies help outline the structure of a discipline and monitor its development. This approach offers crucial insights into research impact, collaboration patterns, and emerging themes, making it invaluable for comprehensive literature reviews and scientific evaluations. Bibliometrix (accessed on 28 October 2024), developed as an R package, is a comprehensive tool for conducting various bibliometric analyses (Aria & Cuccurullo, 2017). Through its features for thematic and temporal visualizations, Bibliometrix offers a clear perspective on the intellectual structure and growth of a particular research domain. VOSviewer (accessed on 28 October 2024), designed by Van Eck and Waltman, is software aimed at creating and visualizing bibliometric networks such as co-authorship and citation linkages (Van Eck & Waltman, 2010). VOSviewer's clustering function allows users to detect thematic groupings, which provides a detailed look at core research areas within a subject. CiteSpace (accessed on 29 October 2024), created by Chen, specializes in time-based visualizations of research patterns and bursts of scholarly influence (Chen, 2014) citation bursts. It offers a "Time-Zone Visualization Map" which helps to identify influential works and shifting research interests, making it a valuable tool for analyzing the development of research fields longitudinally.

3.2 Phase 1 - Data Collection:

In the initial phase of the research methodology, records related to workplace diversity and performance were collected from the Scopus database to ensure high-quality data. The following search string was used to obtain relevant data:

(TITLE (("workplace diversity" OR "top management team diversity" OR "board diversity" OR "employee diversity" OR "gender diversity" OR "racial diversity" OR "cultural diversity" OR "organizational diversity" OR "functional diversity" OR "age diversity" OR "experience diversity" OR "workforce diversity" OR "network alliance diversity" OR "educational diversity" OR "leadership diversity" OR "surface level diversity" OR "deep level diversity" OR "team diversity" OR "top management diversity")) AND TITLE (("performance" OR "efficiency" OR "effectiveness"))) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (DOCTYPE , "ar"))



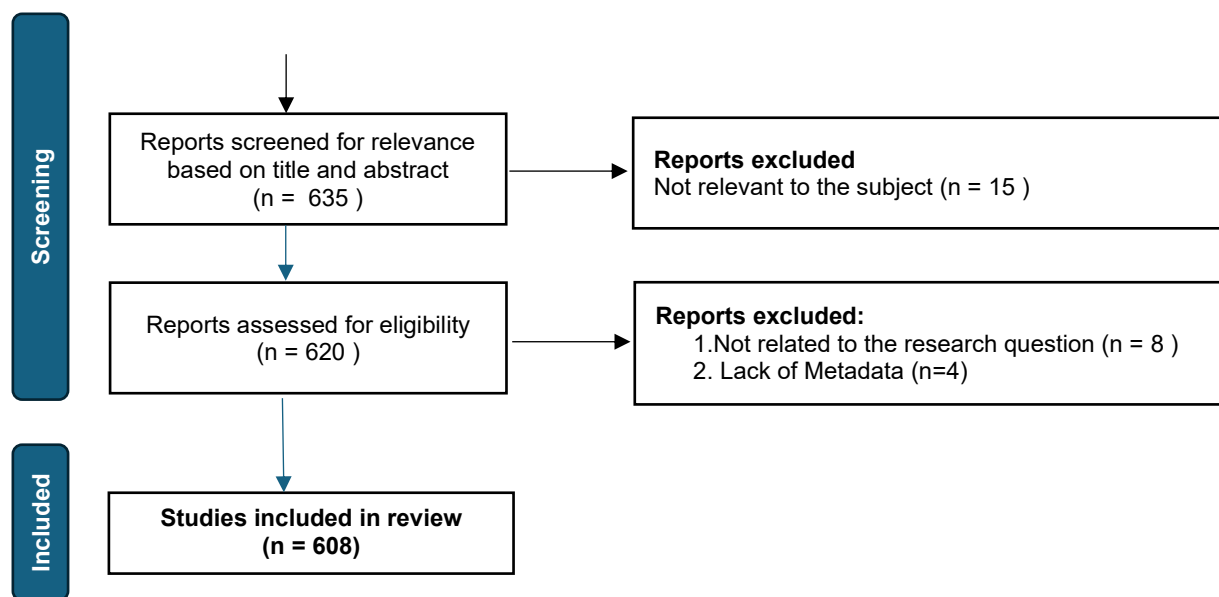


Fig 1 : PRISMA Flow Diagram

This search identified 762 records, which were then subjected to a preliminary screening. Only documents classified as articles and published in English were retained, resulting in 635 records. These records were then screened individually for relevance, and 620 were found to align with the study's focus. Following an assessment for eligibility, 12 records were excluded for falling outside the scope of the research questions. After screening, a total of 608 studies were included in the analysis. The selection process is illustrated in a PRISMA flow diagram (Figure 1).

3.3 Phase 2 - Data Analysis and Data Visualization:

Once the final documents were selected in Phase 1, all texts containing full records and cited references were downloaded in both BibTeX and CSV formats, as required by the bibliometric software. Bibliometrix accepts BibTeX files from Scopus, while VOSviewer work with CSV files. The download process involved selecting the “download to BibTeX and CSV format” option for all 608 articles. Following this, three different software tools were utilized to analyze and visualize the bibliometric networks: Bibliometrix (version R. 4.4.1), VOSviewer (version 1.6.20). Each tool contributed to the analysis in a unique way. The systematic flow chart illustrating the data analysis and visualization process is shown in Figure 2.

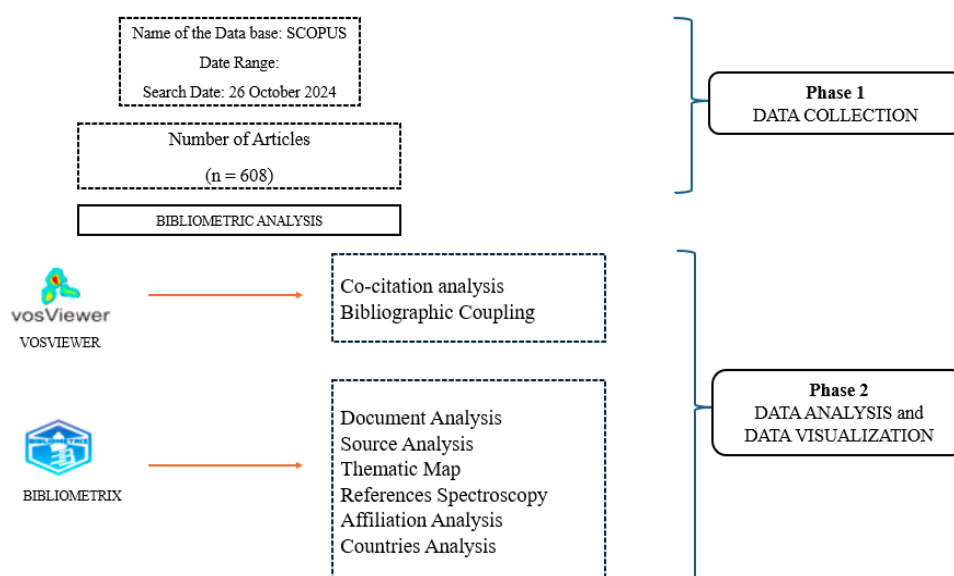


Fig 2 : Research Methodology

4. RESULTS AND DISCUSSIONS

4.1 Publication Metrics

RQ 1: What is the status of publication in scopus on workplace diversity and performance research?

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1997:2024
Sources (Journals, Books, etc)	338
Documents	605
Annual Growth Rate %	18.55
Document Average Age	4.9
Average citations per doc	46.57
References	40003
DOCUMENT CONTENTS	
Keywords Plus (ID)	600
Author's Keywords (DE)	1311
AUTHORS	
Authors	1595
Authors of single-authored docs	59
AUTHORS COLLABORATION	
Single-authored docs	60
Co-Authors per Doc	2.96
International co-authorships %	31.24
DOCUMENT TYPES	
Article	605

Table 1 Data Description

Table 1 shows that a total of 605 articles were published across 338 sources by 1,595 authors from 1997 to 2024. The publication has an annual growth rate of 18.55%, indicating a significant increase in research output over the years. On average, each document received 46.57 citations, highlighting the scholarly impact of these studies. Additionally, the total number of references cited within these articles amounts to 40,003. Among the published documents, 60 articles were authored by single authors, while the remaining 545 articles involved multiple authors. Furthermore, 31.24% of the publications featured international co-authorships, reflecting a collaborative approach in the research community.

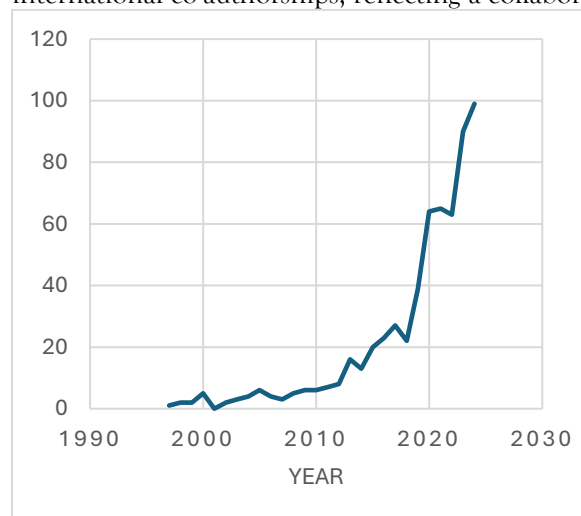


Fig 3 : Annual Scientific Production

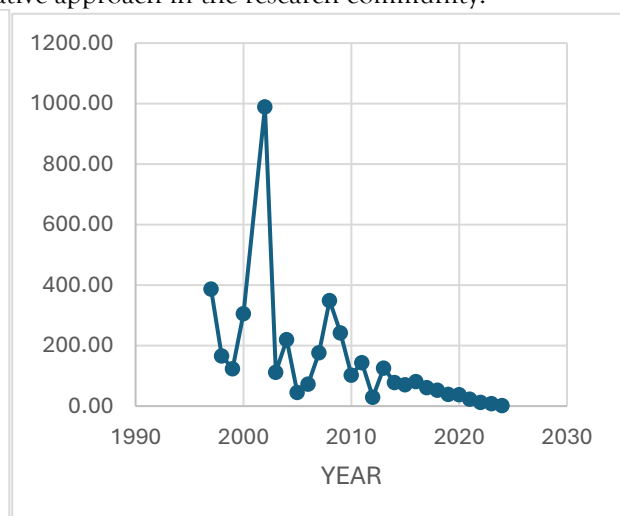


Fig 4 : Average Citations per Year

Fig 3 shows that between 1997 and 2024, there has been a significant upward trend in publications related to workplace diversity and performance. The output started with just one article in 1997 and is expected to cross 100 articles in 2024, reflecting a growing interest in this area. A notable surge in publications began in 2020, with 64 articles published, and the peak was in 2023 with 90 articles recorded, indicating that the topic is not only gaining traction but also that research is increasingly becoming relevant in contemporary discussions around organizational performance. This increase indicates a robust annual growth rate of 18.55%, showcasing the expanding research focus on how workplace diversity impacts organizational performance. As organizations recognize the importance of diverse workforces, it is likely that this trend will continue to rise, influencing both academic research and practical applications.

4.2 Document Analysis:

RQ 2: Which are the key documents in workplace diversity and performance research?

Paper	Total Citations	TC per Year	Normalized TC
CAMPBELL K, 2008, J BUS ETHICS	1322	77.76	3.79
HARRISON DA, 2002, ACAD MANAGE J	1209	52.57	1.22
MILLER T, 2009, J MANAGE STUD	897	56.06	3.70
RICHARD OC, 2000, ACAD MANAGE J	821	32.84	2.68
STUART BUNDERSON J, 2002, ACAD MANAGE J	769	33.43	0.78
JOECKS J, 2013, J BUS ETHICS	587	48.92	4.68
BOULOUTA I, 2013, J BUS ETHICS	524	43.67	4.18
RICHARD OC, 2004, ACAD MANAGE J	522	24.86	2.38
TERJESEN S, 2016, J MANAGE GOV	481	53.44	5.93
KILDUFF M, 2000, ORGAN SCI	467	18.68	1.53

Table 7 : Most Globally Cited Documents

Table 7 shows that Campbell's research on 'Gender diversity in the board room and firm financial performance' has the highest total number citations (1322) which suggest that the paper has been influential in its field. It is inferred that Campbell's research has been foundational study as it is frequently cited across time. Total Citation (TC) per year shows the average number of citations per year since publication. Terjesen's work on 'Does the presence of independent and female directors impact firm performance' has a Total Citation (TC) per year of 53.44 shows that it maintains a high annual citation rate even though it was published recently than others. Normalized TC adjusts the total citations based on the age of the article. Terjesen's research has a high normalized TC of 5.93 which indicates that the paper is highly influential and is currently of higher relevance.

Cited References	Citations
ADAMS, R.B., FERREIRA, D., WOMEN IN THE BOARDROOM AND THEIR IMPACT ON GOVERNANCE AND PERFORMANCE (2009) JOURNAL OF FINANCIAL ECONOMICS, 94 (2), PP. 291-309	93
CAMPBELL, K., MÍNGUEZ-VERA, A., GENDER DIVERSITY IN THE BOARDROOM AND FIRM FINANCIAL PERFORMANCE (2008) JOURNAL OF BUSINESS ETHICS, 83 (3), PP. 435-451	67
LIU, Y., WEI, Z., XIE, F., DO WOMEN DIRECTORS IMPROVE FIRM PERFORMANCE IN CHINA? (2014) JOURNAL OF CORPORATE FINANCE, 28, PP. 169-184	51
POST, C., BYRON, K., WOMEN ON BOARDS AND FIRM FINANCIAL PERFORMANCE: A META-ANALYSIS (2015) ACADEMY OF MANAGEMENT JOURNAL, 58 (5), PP. 1546-1571	50
ERHARDT, N.L., WERBEL, J.D., SHRADER, C.B., BOARD OF DIRECTOR DIVERSITY AND FIRM FINANCIAL PERFORMANCE (2003) CORPORATE GOVERNANCE: AN INTERNATIONAL REVIEW, 11 (2), PP. 102-111	46

CARTER, D.A., SIMKINS, B.J., SIMPSON, W.G., CORPORATE GOVERNANCE, BOARD DIVERSITY, AND FIRM VALUE (2003) FINANCIAL REVIEW, 38 (1), PP. 33-53	45
ROSE, C., DOES FEMALE BOARD REPRESENTATION INFLUENCE FIRM PERFORMANCE? THE DANISH EVIDENCE (2007) CORPORATE GOVERNANCE: AN INTERNATIONAL REVIEW, 15 (2), PP. 404-413	40
TORCHIA, M., CALABRÒ, A., HUSE, M., WOMEN DIRECTORS ON CORPORATE BOARDS: FROM TOKENISM TO CRITICAL MASS (2011) JOURNAL OF BUSINESS ETHICS, 102 (2), PP. 299-317	40
JENSEN, M.C., MECKLING, W.H., THEORY OF THE FIRM: MANAGERIAL BEHAVIOR, AGENCY COSTS AND OWNERSHIP STRUCTURE (1976) JOURNAL OF FINANCIAL ECONOMICS, 3 (4), PP. 305-360	38
BEAR, S., RAHMAN, N., POST, C., THE IMPACT OF BOARD DIVERSITY AND GENDER COMPOSITION ON CORPORATE SOCIAL RESPONSIBILITY AND FIRM REPUTATION (2010) JOURNAL OF BUSINESS ETHICS, 97 (2), PP. 207-221	36

Table 8: Most local cited references

From Table 8, it is inferred that references related to board diversity, gender composition and their influence on firm performance, governance and corporate social responsibility are the most locally cited references. Work of Adams and Ferreria (2009) on women in boardrooms and their impact on governance and performance were referred 93 times suggesting that this paper is foundational in the research area of boardroom diversity and performance. Research paper of Campbell and Minguez-Vera (2008) with 67 local citations brought out the connection between gender diversity and financial performance. It supports the arguments about the financial benefits of boardroom diversity. The above mentioned references in table 8 are the highly influential seminal works in the field of board diversity and performance .

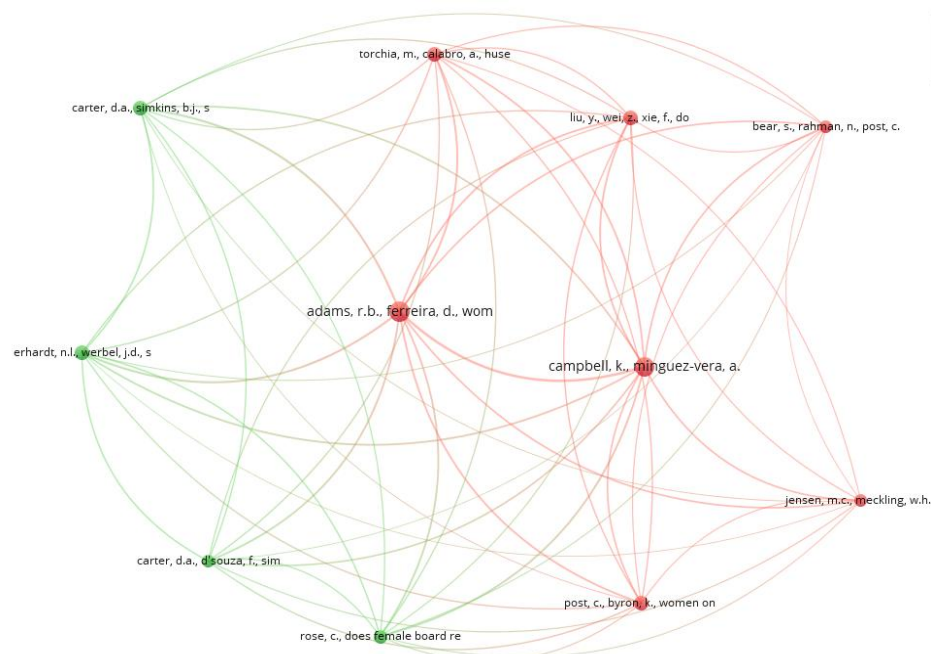


Fig 5: Co-Citation Analysis of Documents

Fig 6 Co-citation analysis shows how frequently two documents are cited together by other documents which helps to identify the intellectual structure within a research field. This analysis was done using VosViewer software. Minimum citation threshold was set at 35 to have documents with significant impact and the results revealed 11 documents which are split into two clusters.

Cluster 1 (7 Items) RED Gender diversity and Firm Performance	Cluster 2 (4 Items) GREEN Diversity and Financial outcomes
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Adams, R.B., Ferreira, D., Women in the boardroom and their impact on governance and performance (2009)	Carter, D.A., D'Souza, F., Simkins, B.J., Simpson, W.G. The Gender and the ethnic diversity of US boards and its impact on firm financial performance (2010)
Bear, S., Rahman, N., Post, C. The impact of board diversity and gender composition on corporate social responsibility (2010)	Carter, D.A., Simkins, B.J., Simpson, W.G. Corporate governance, board and firm value (2003)
Campbell, K., Mínguez-Vera, A Gender diversity in the board room and firm financial performance (2008)	Erhardt, N.L., Werbel, J.D., Shrader, C.B. Board of director diversity and firm financial performance (2003)
Jensen, M.C., Meckling, W.H. Theory of the firm: managerial behavior, agency costs, and ownership (1976)	Rose, C. Does female board representation influence firm performance? The Danish evidence (2007)
Liu, Y., Wei, Z., Xie, F. Do women directors improve firm performance in China? (2014)	
Post, C., Byron, K. Women on boards and firm financial performance: A Meta analysis (2015)	
Torchia, M., Calabrò, A., Huse, M. Women directors on corporate boards: from tokenism to critical mass theory (2011)	

Table 9: Clusters emerged in co-citation analysis

The co-citation analysis in table 9 identifies two primary themes in board diversity research. Cluster 1 centres on the effects of gender diversity in the boardroom on governance and financial performance, frequently drawing on concepts like "critical mass" and agency theory to explain how a certain threshold of female representation strengthens board effectiveness. Cluster 2 broadens the perspective to include other diversity dimensions, such as ethnic diversity, and explores how these variations impact firm value and governance across diverse cultural settings. The work of Adams and Ferreira (2009) serves as a bridge between these clusters by examining gender diversity through a comprehensive governance lens. Their study highlights how female board representation not only directly influences firm performance (Cluster 1) but also intersects with governance practices that embrace broader diversity considerations (Cluster 2). This connection underscores the broader impact of board diversity on firm success, linking gender-specific insights to wider diversity benefits.

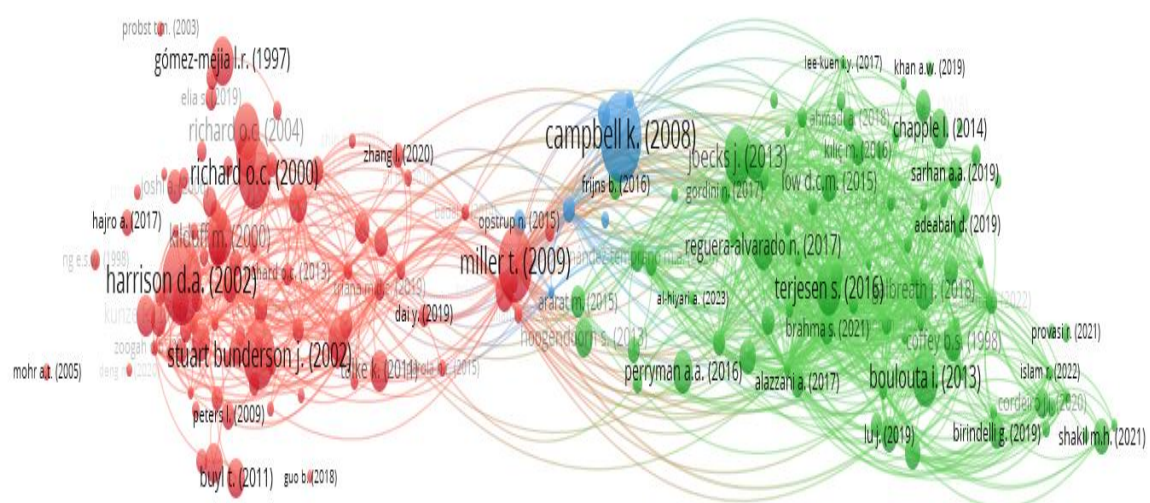


Fig 6: Bibliographic Coupling of Documents

The bibliographic coupling analysis of 161 documents with at least 35 citations identified three main clusters as depicted in Figure 6. The first cluster, containing 78 documents, primarily explores the influence of diversity on team and task performance, with Harrison's 2022 study on the effects of surface and deep-level diversity on group functioning being a key reference. The second cluster, with 76 documents, focuses on demographic diversity in organizational settings, highlighted by Miller's 2009 research on diversity in boardrooms. The third, smaller cluster of 7 documents, concentrates on gender diversity in the boardroom and its impact on firm financial performance, with Campbell's work being central. These findings indicate that the literature on diversity can be divided into three key themes: team dynamics, boardroom diversity, and the financial outcomes of gender diversity in organizations.

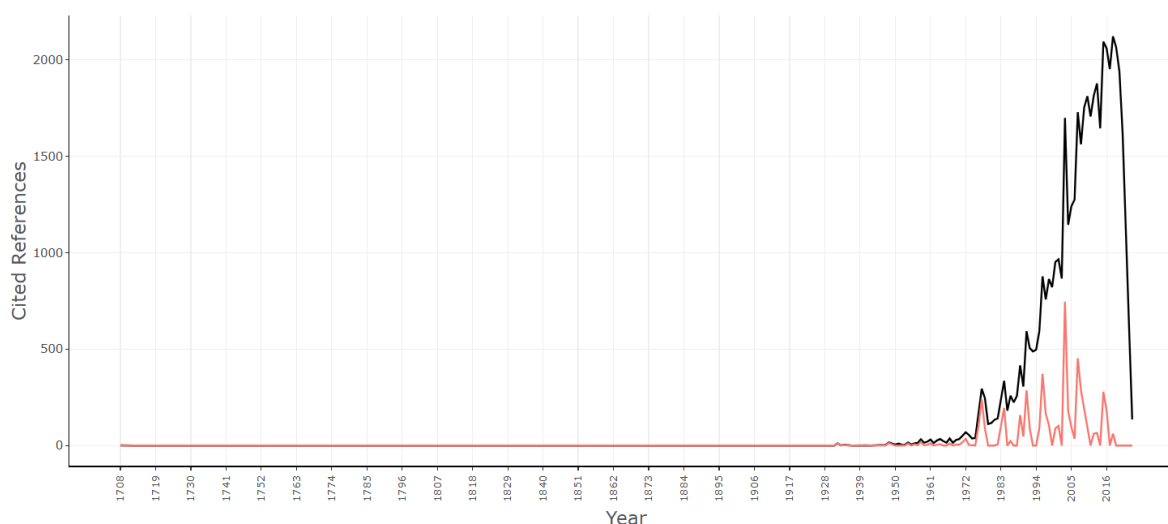


Fig 7 : References Spectroscopy

Number of cited references (black line) – Deviation from the 5 year Median (red line)

Reference Publication Year Spectroscopy (RPYS), introduced by Marx et al. (2014), is a method used to create a temporal profile outside the analyzed collection to pinpoint the most influential documents in the context of effects of diversity. RPYS identifies seminal works within a dataset by analyzing reference metadata, including sources like books, handbooks, and theses that may not be indexed in Scopus. These foundational documents serve as pivotal contributions that drive the development of new theories and applications. Typically, RPYS plots include two key lines:

The black line in figure 7 represents the total number of cited references (NCRs) per year, reflecting the cumulative citations of documents in the collection annually. Years with a high number of citations suggest the presence of influential publications that could be considered foundational or landmark studies in the field.

The red line in figure 7 shows the deviation from the 5-year median, comparing the current year (t) with the previous four years ($t-1$, $t-2$, $t-3$, and $t-4$). This deviation highlights significant peaks in citation activity, providing a smoother comparison over time to identify years when certain documents received notably more citations than others.

Year	Influential papers
1997	Some effects of proportions on group life: Skewed sex ratios and response to token women by Kanter Inequality and Heterogeneity by Blau
1984	Hambrick Upper Echelons: the organization as a reflection of its top managers
1991	Firm resources and sustained competitive advantage by Arellano
1996	Searching for common threads: understanding the multiple effects of diversity in organizational groups
2003	Corporate governance board diversity and firm value
2007	Does female board representation influence firm performance? The Danish evidence
2015	Women on boards and financial performance: A meta Analysis

Table 10: Influential papers as per references spectroscopy

4.3 Keyword Analysis

RQ 3: How do the emerging themes in workplace diversity and performance research emerged over the years?

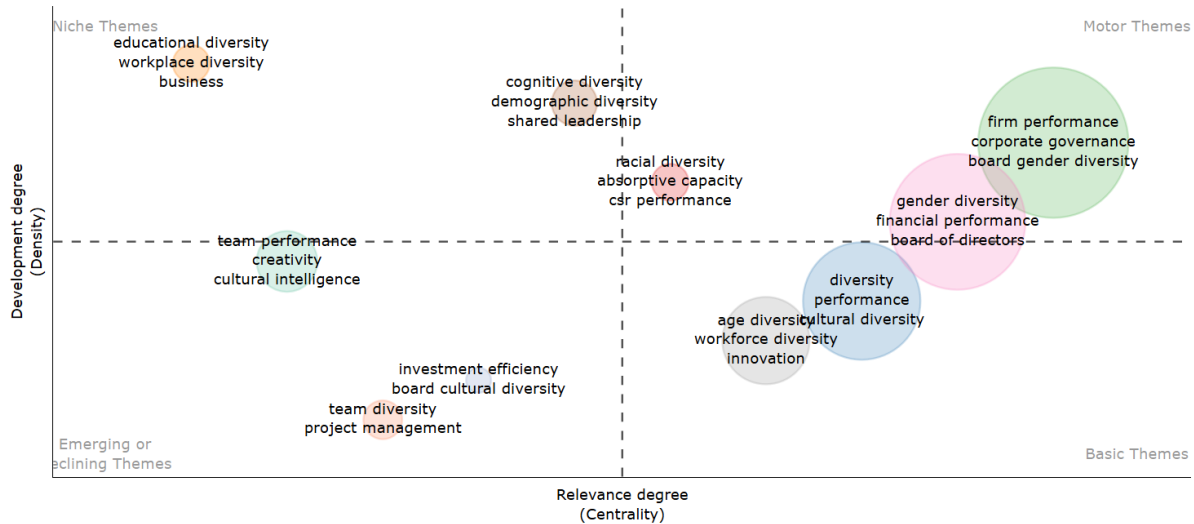


Fig 8: Thematic Map using Author's Keywords

From Figure 8, it is inferred that themes such as impact of board gender diversity on firm performance and corporate governance and impact of gender diversity on financial performance were explored the most and formed the motor themes. Motor themes are high on centrality and density which shows that these works were core, influential and well developed. Niche themes as seen in the top left of the quadrant focus on cognitive diversity, demographic diversity, shared leadership, and educational diversity in the workplace. These are the works that were low on centrality and high on density which signifies that they are well explored but less relevant to the current research. Meanwhile, in emerging or declining themes, the emphasis shifts to team performance, creativity, cultural intelligence, and investment efficiency. These are the themes that are low on centrality and low on density which is the current research gap. These themes are marginally explored. Basic themes are low in centrality and high on density. Themes such as workforce diversity, age diversity, innovation, and cultural diversity are highly explored.

Cluster	Callon Centrality	Callon Density	Rank Centrality	Rank Density	Cluster Frequency
racial diversity	0.241	32.099	6	7	15
diversity	1.282	24.634	8	4	236
firm performance	2.04	32.753	10	8	726
educational diversity	0	45	1	10	15
cognitive diversity	0.217	33.289	5	9	20
gender diversity	1.851	29.81	9	6	442
age diversity	0.602	23.156	7	3	84
team performance	0.116	27.517	2	5	34
team diversity	0.165	21.795	3	1	16
investment efficiency	0.201	22.917	4	2	10

Table 11: Centrality and Density of the clusters

From the table 11, it is inferred that firm performance has the highest centrality score, making it the most relevant and influential theme followed by gender diversity and diversity. These are the themes that are well developed and researched frequently. Educational diversity has high density but lowest centrality

suggesting that it is well developed but not a key focus in recent discussions. Clusters such as team performance, team diversity and investment efficiency require more attention and development in future research.

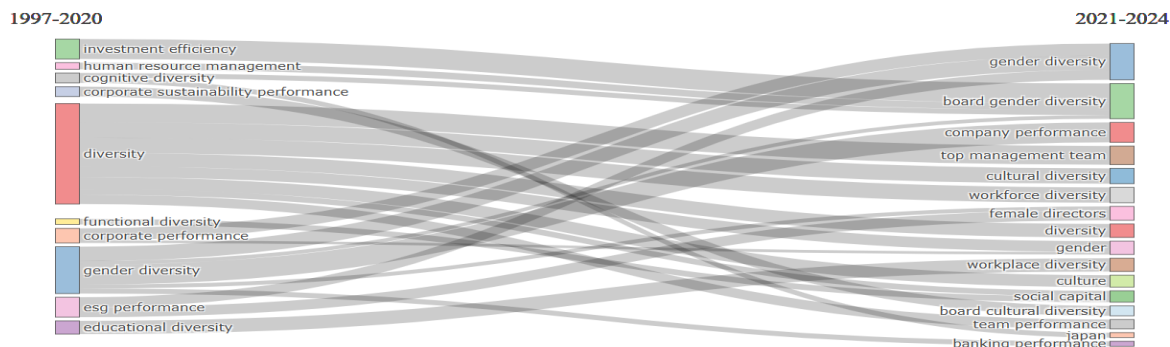


Fig 9: Sankey diagram depicting the research on diversity before 2020 and after 2020

The plot in Figure 9 is generated using rstudio biblioshiny. This plot signifies the evolution of research on diversity between 1997–2020 and 2021–2024. In the earlier timeframe, keywords such as “diversity,” “gender diversity,” and “functional diversity” were predominant, indicating a focus on various diversity types (gender, educational, cognitive) and their relationship with corporate objectives like “corporate performance” and “investment efficiency.” Studies in this period primarily explored diversity's influence on broad organizational outcomes, including corporate sustainability and ESG performance, reflecting an interest in diversity's impact on corporate success.

In the 2021–2024 period, research shifts to more specific and nuanced areas. Keywords like “board gender diversity,” “top management team,” and “workforce diversity” signal a growing interest in how diversity affects different organizational levels, particularly in leadership and team settings. Newly emerging terms, including “social capital,” “cultural diversity,” and “team performance,” suggest a focus on diversity's impact on workplace culture and team dynamics. Additionally, keywords like “Japan” and “banking performance” show an increasing trend of examining diversity in particular regions or industries, indicating a transition from general studies toward more detailed analyses of diversity's effects within specific organizational and cultural contexts.

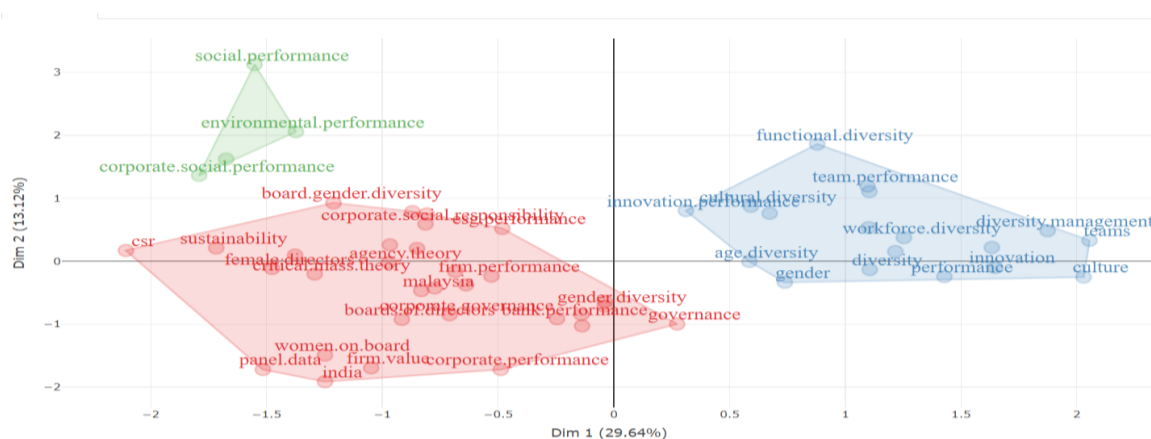


Fig 10: Keyword co-occurrence analysis

The factorial analysis as shown in Figure 10 maps the co-occurrence of keywords in diversity-related research, showing clusters of topics across two dimensions. The analysis has grouped the keywords into three main clusters, each representing distinct thematic areas within diversity research.

Green Cluster (Top-left): Social and Environmental Performance

This cluster includes keywords like "social performance," "environmental performance," and "corporate social performance," indicating a focus on the social and environmental impact of diversity initiatives.

This theme suggests an interest in how diversity links to broader corporate social responsibility (CSR) goals and sustainability practices within organizations.

Red Cluster (Bottom-left): Corporate Governance and Gender Diversity

Keywords in this cluster, such as "board gender diversity," "corporate social responsibility," "female directors," "agency theory," and "firm performance," focus on governance and gender representation, particularly at the board level. This area of research is concerned with the influence of gender diversity on corporate governance, firm value, and performance, often analyzed through lenses like agency theory. It reflects a strong interest in the role of women in corporate leadership and the financial implications of board diversity, with particular regional focuses like "India" and "Malaysia."

Blue Cluster (Right): Workforce Diversity and Performance

The blue cluster contains keywords such as "functional diversity," "team performance," "workforce diversity," "innovation," and "culture." This theme emphasizes diversity at the workforce level, particularly its impact on team dynamics, innovation, and overall performance. This cluster explores how various forms of diversity (e.g., age, cultural) influence team effectiveness and organizational culture, indicating an operational focus on diversity's role in enhancing team and organizational outcomes.

4.4 Source Analysis

Which Sources are the most relevant in workplace diversity and performance research and what is their production dynamics over time?

Source	Rank	Freq	Cum Freq	Zone
Sustainability (Switzerland)	1	23	23	Zone 1
Corporate Governance (Bingley)	2	19	42	Zone 1
Corporate Social Responsibility And Environmental Management	3	13	55	Zone 1
Cogent Business And Management	4	10	65	Zone 1
Gender In Management	5	10	75	Zone 1
Journal Of Business Ethics	6	10	85	Zone 1
International Journal Of Human Resource Management	7	9	94	Zone 1
Journal Of Risk And Financial Management	8	9	103	Zone 1
Journal Of Business Research	9	8	111	Zone 1
Academy Of Management Journal	10	7	118	Zone 1

Table 12 : Core Sources as identified by Bradford's Law

The Table 12 showcases the most cited journals within Zone 1, representing key sources of influence in the research field. "Sustainability (Switzerland)" holds the top position with 23 citations, followed closely by "Corporate Governance (Bingley)" and "Corporate Social Responsibility and Environmental Management," which together account for nearly half of the citations among the top ten journals. The subject areas of these journals such as sustainability, corporate governance, gender studies, business ethics, and human resource management highlight the primary themes within the field. Collectively, the Zone 1 journals act as foundational references that shape and guide the field's development.

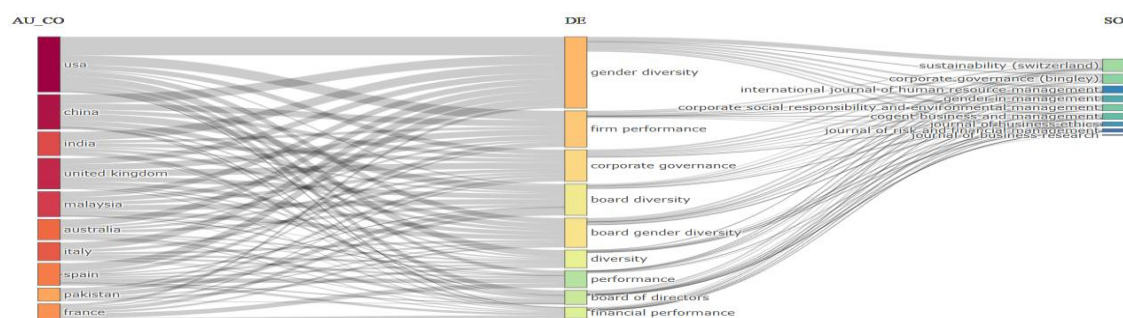


Fig 11: Three Field plot Diagram

The three-field plot in figure 11 shows how diversity research connects countries, key words and prominent journals. Countries like the USA, China, and India are leading contributors to diversity research, with studies focusing on keywords such as "gender diversity," "firm performance," and "corporate governance." These topics reflect a strong interest in how diversity particularly gender and board-level diversity affects organizational performance and governance structures. This research is frequently published in interdisciplinary journals such as *Sustainability* (Switzerland), *Corporate Governance* (Bingley), and the *International Journal of Human Resource Management*, which focus on areas like sustainability, corporate ethics, and human resource management. The plot highlights a global and interdisciplinary approach to diversity research, linking regional perspectives to broader organizational themes and academic platforms.

4.5 Author Analysis:

Who are the most prolific authors in workplace diversity and performance research and what is their contribution over time?

Author	h_index	g_index	m_index	TC	NP	PY_start
RICHARD OC	10	10	0.4	2299	10	2000
ALI M	5	5	0.357	270	5	2011
WANG M	4	5	0.8	261	5	2020
ADUSEI M	3	3	0.375	79	3	2017
CHADWICK K	3	3	0.136	912	3	2003
FERNANDO GD	3	3	0.333	374	3	2016
FERNÁNDEZ-TORRES Y	3	3	0.6	41	3	2020
GARCÍA-SÁNCHEZ IM	3	3	0.2	454	3	2010
GUTIÉRREZ-FERNÁNDEZ M	3	3	0.6	41	3	2020
ISSA A	3	4	0.75	93	4	2021

Table 13: Authors' local impact

The table 13 shows key research metrics for various authors, including their productivity and impact. The h-index indicates the number of author's papers have been frequently cited, with Richard OC having a strong score of 10, indicating 10 of his papers have been cited at least 10 times. The g-index measures citation impact but gives more weight to highly cited articles. Richard OC's top 10 publications together have a high citation count showing strong influence. The m-index measures impact per year since the author's first publication, with Wang M scoring 0.8, indicating fast-growing influence since 2020. Total Citations (TC) shows the overall number of citations, with Richard OC's 2299 citations highlighting significant impact. The Number of Publications (NP) and Publication Year Start (PY_start) reflect each author's research output and when they began publishing, such as Issa A, who started recently in 2021.

Authors	Articles	Articles Fractionalized
RICHARD OC	10	3.58
ALI M	5	2.33
WANG M	5	1.29
ISSA A	4	1.37
SAHYOUNI A	4	1.07
ZHANG X	4	1.25
ZHANG Y	4	1.53
ADUSEI M	3	1.67
ARORA A	3	2.00
CHADWICK K	3	0.92

Table 14 : Most Relevant Authors

Table 14 shows the publication activity of various authors, measured by total Articles and Articles Fractionalized, which adjusts for contributions in multi-authored papers. Richard OC stands out with 10

articles and a high fractionalized score of 3.58, reflecting both productivity and significant contributions to each paper. Ali M follows, with 5 articles and a fractionalized score of 2.33, indicating a substantial role in collaborative work. Authors like Wang M and Issa A have similar article counts but lower fractionalized scores (1.29 and 1.37), suggesting smaller contributions per paper. Arora A, with a fractionalized score of 2.00 from only 3 articles, shows notable influence, suggesting meaningful involvement in each publication.

Documents written	N. of Authors	Proportion of Authors
1	1441	0.903
2	130	0.082
3	17	0.011
4	4	0.003
5	2	0.001
10	1	0.001

Table 15 : Authors' Productivity through Lotka's Law

Table 15 indicates authors' productivity as per Lotka's law which observes that as productivity increases, the number of authors contributing at that level decreases sharply. From the table 15 it is inferred that majority of the authors (90.3%) have written just one document. As the number of documents per author rises, the number of authors at each level drops significantly. It shows that highly productive authors are rare while the vast majority of the authors contribute to fewer publications.

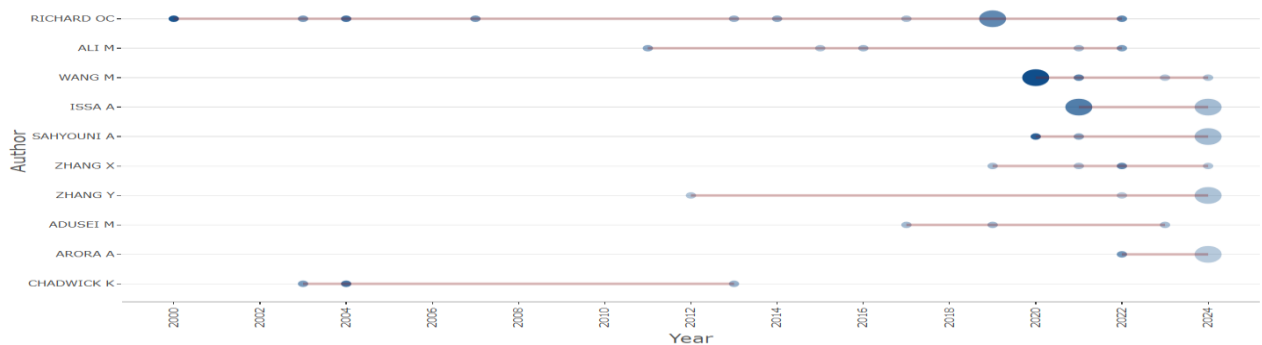


Fig 12: Authors' Production over time

The chart as shows in Figure 12 illustrates the publishing activity of various authors over time. Notably, authors like Wang M- and Zhang X- have maintained steady productivity since 2000, with a significant increase around 2020. In contrast, authors such as Arora A- and Chadwick K- show a more irregular publication pattern. Interestingly, newer authors like Sahyoun A- and Zhang Y- have only recently begun publishing but have quickly increased their output. Overall, the chart reflects a vibrant research landscape with varied publication patterns among these authors.

4.6 Affiliation Analysis

What are the leading institutions publishing research work in workplace diversity and performance?

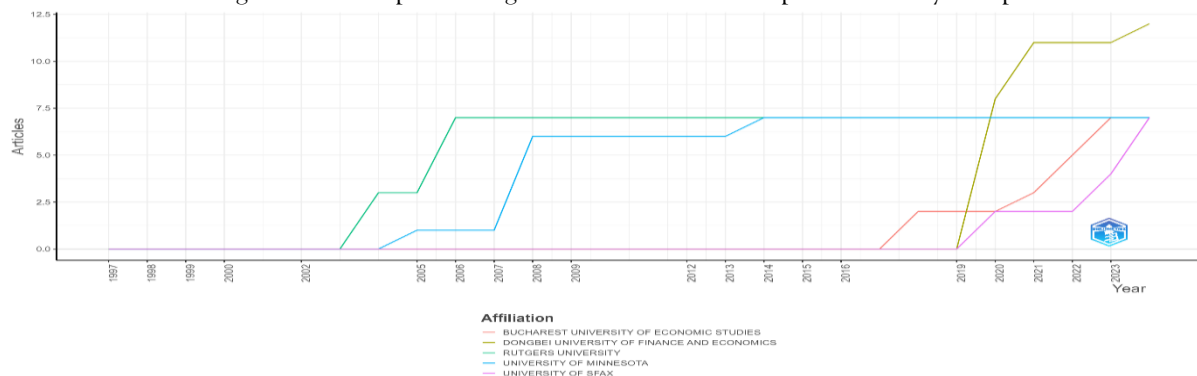


Fig 13: Affiliations' production over time

The chart in figure 13 displays the growth in article publications from various universities over time, highlighting a general upward trend in research activity. It is inferred from the figure 13 that Dongbei university of finance and economics, has shown rapid growth in publication in recent years. This overall increase indicates that these institutions have been progressively more active in research and publication in recent years.

4.7 Country Analysis

Which are the countries that significantly contribute to diversity workplace research?

Country	Articles	Articles %	SCP	MCP	MCP %
USA	71	11.7	51	20	28.2
CHINA	53	8.8	32	21	39.6
MALAYSIA	29	4.8	18	11	37.9
UNITED KINGDOM	27	4.5	13	14	51.9
ITALY	23	3.8	15	8	34.8
SPAIN	20	3.3	17	3	15
AUSTRALIA	19	3.1	15	4	21.1
INDIA	18	3	15	3	16.7
GERMANY	14	2.3	9	5	35.7
KOREA	13	2.1	7	6	46.2

Table 16 : Countries' scientific production

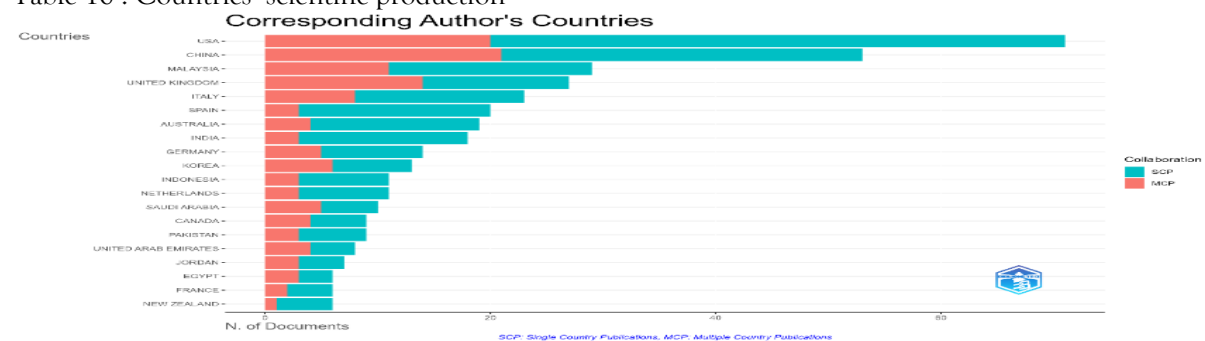


Fig 14 : Corresponding Authors' Countries

The data in Table 16 and Figure 14 reveals the global trend of research publications, with a significant portion being Single Country Publications (SCP) and Multiple Country Publications (MCP). SCP represents articles authored by individuals from a single country, while MCP involves collaborations between authors from multiple countries. Notably, the USA and China stand out as the top contributors to research, with the USA having the highest number of total articles (71) and China following closely with 53 articles. The USA shows a stronger inclination towards SCP, while China demonstrates a more balanced approach with a higher share of MCP, reflecting extensive international collaboration in research.

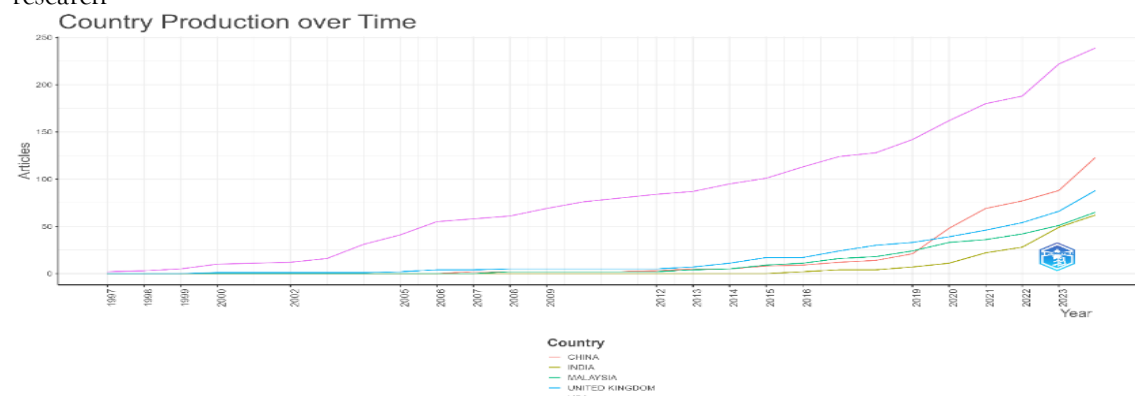


Fig 15 : Countries' production over time

The chart in Figure 15 illustrates the growing global scientific output, with all countries showing a notable increase in published articles over time, though at varying growth rates. China has experienced the most rapid growth, surpassing the USA in recent years, while India has also demonstrated significant growth, albeit at a slower pace. Malaysia and the United Kingdom have maintained steady, consistent growth trajectories. Although the USA continues to show a consistent rise in publications, it has been overtaken by China in terms of growth rate. This highlights the shifting landscape of global research, with China and India emerging as dominant contributors to scientific publications.

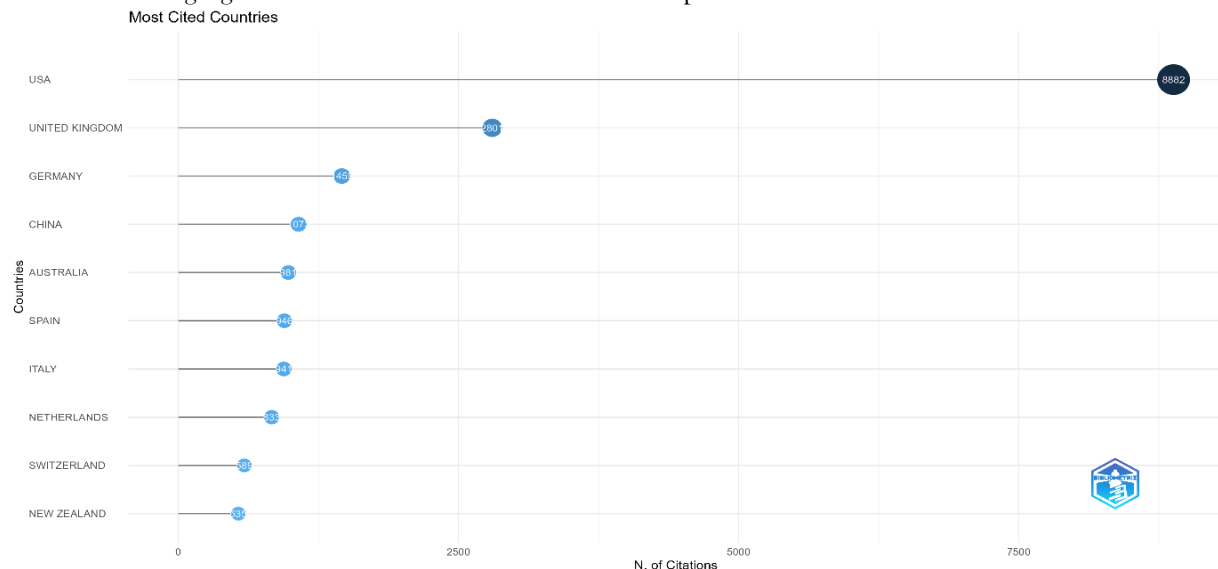


Fig 16 : Countries' production over time

The chart shows the number of citations received by researchers from various countries, with the USA leading by a substantial margin, followed by the United Kingdom and Germany. China, Australia, and Spain have comparable citation levels, while Italy, the Netherlands, Switzerland, and New Zealand rank lowest in citations among the countries listed. This indicates that the USA holds a dominant position in global research influence, with the UK and Germany not far behind.

5. DISCUSSIONS AND CONCLUSION:

The bibliometric analysis highlights the significant growth in research on workplace diversity and performance from 1997 to 2024. The annual growth rate of 18.55% reflects increasing recognition of diversity as a critical driver of organizational outcomes, both in academia and practice. The upward trend in publications, particularly from 2020 onward, aligns with a broader global focus on equity, inclusion, and sustainability in organizational contexts.

Key Influences and Impact

High-impact Publications:

Foundational studies like those of Campbell (2008) and Terjesen (2009) illustrate how research on gender diversity and boardroom performance has laid the groundwork for subsequent studies. The high total citations and normalized citation scores for these works underscore their influence and relevance in shaping the discourse around diversity and organizational performance.

Collaborative Research:

The presence of international co-authorships in 31.24% of articles demonstrates a collaborative and multidisciplinary approach to diversity research. This global perspective strengthens the applicability of findings across diverse cultural and organizational settings.

Author Productivity and Impact:

Highly productive authors, such as Richard OC, have made substantial contributions, evidenced by high h-index and citation scores. Newer authors like Wang M also show promising trajectories with rapidly growing m-index scores, highlighting the dynamic nature of contributions to the field.

Thematic Trends

Evolving Research Themes:

Thematic mapping and keyword analysis indicate that initial research focused broadly on diversity dimensions such as gender and functional diversity, with a general emphasis on organizational outcomes like corporate performance and ESG measures. Recent studies (2021–2024) are more nuanced, targeting specific levels of diversity, such as top management teams and workforce diversity, and their implications for team performance, social capital, and innovation.

Diversity and Firm Performance:

Emerging themes include diversity's role in decision-making processes, strategic consensus, and organizational ambidexterity, reflecting its critical influence at both leadership and workforce levels.

Institutional Dynamics:

Universities, such as Dongbei University of Finance and Economics, have shown rapid growth in publications, suggesting increased institutional focus on diversity studies. These institutions are becoming pivotal in advancing research in this domain.

Clusters in Diversity Research

Workforce Diversity and impact:

Cluster analyses, such as those based on co-citation and factorial mapping, reveal a dominant focus on the role of gender diversity in boardrooms, particularly its impact on corporate governance and financial performance. Another significant cluster delves into how workforce diversity influences team dynamics and organizational culture, highlighting its operational implications. Studies emphasize how dimensions like cultural diversity and team heterogeneity shape conflict management, social capital, and contextual performance. Emerging clusters link diversity initiatives to CSR goals, suggesting that diversity's impact extends beyond organizational boundaries to broader societal outcomes.

Global Research Trends:

Countries like the USA and China are leading contributors, with distinct research patterns. The USA dominates in citations and single-country publications (SCP), while China has shown rapid growth and a strong focus on international collaborations (MCP). Other countries, like India and Malaysia, are emerging players in this field. The USA leads in global research influence, followed by the UK and Germany. However, China's rapid growth rate in publication output indicates a shifting research landscape, with newer players gaining prominence.

CONCLUSION:

The study shows the dynamic evolution of diversity research over the last three decades, reflecting its growing importance in contemporary organizational studies. The findings reveal the prominence of gender diversity, particularly in boardrooms, and its strong association with governance and financial performance. Concurrently, workforce diversity is increasingly recognized for its role in shaping team dynamics and innovation.

Despite the significant progress, critical research gaps remain.

Explore emerging themes such as team performance, cultural intelligence, and the impact of diversity on social capital.

Investigate underrepresented diversity dimensions cognitive and functional diversity.

Conduct longitudinal and sector-specific analyses to contextualize diversity's impact across different organizational and cultural settings.

As organizations and societies increasingly embrace diversity as a strategic asset, the field is poised for further expansion, offering valuable insights into how diverse workforces can drive sustainable performance and innovation in the global business landscape.

DECLARATIONS:

Conflicts of Interest

All authors declare that they have no conflicts of interest.

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