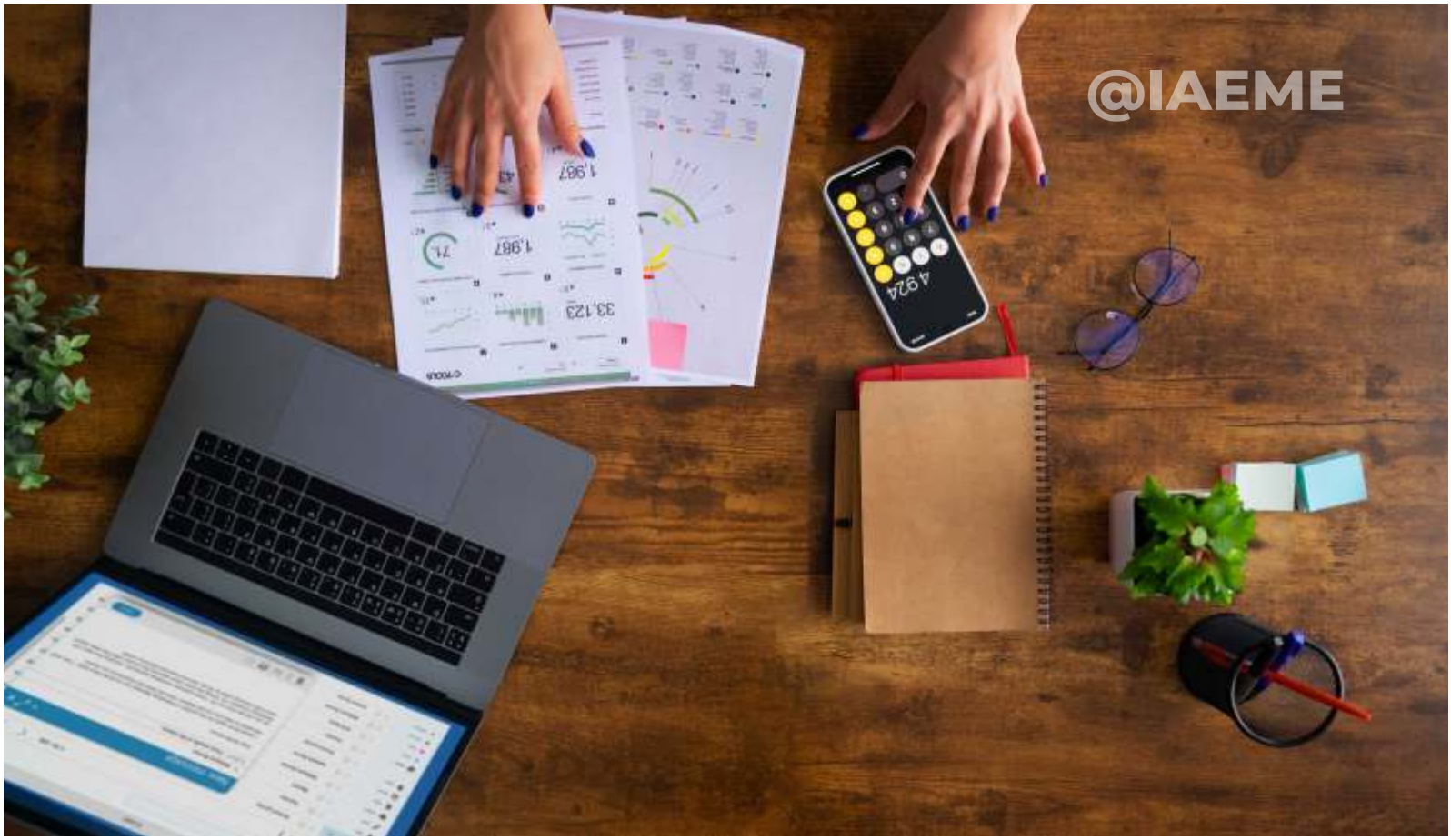
IJAFMRD

INTERNATIONAL JOURNAL OF ACCOUNTING AND FINANCIAL MANAGEMENT RESEARCH AND DEVELOPMENT

Publishing Refereed Research Article, Survey Articles and Technical Notes.

Journal ID: 7740-5584



IAEME Publication
Chennai, India
editor@iaeme.com/ iaemedu@gmail.com

International Journal of Accounting and Financial Management Research And Development (IJAFMRD)
Volume 3, Issue 1, January-June 2025, pp. 99-123, Article ID: IJAFMRD_03_01_007
Available online at https://iaeme.com/Home/issue/IJAFMRD?Volume=3&Issue=1
Impact Factor (2025): 8.50 (Based on Google Scholar Citation)
Journal ID: 7740-5584; DOI: https://doi.org/10.34218/IJAFMRD_03_01_007

CORPORATE FINANCIAL PERFORMANCE AND CARBON EMISSIONS: A BIBLIOMETRIC ANALYSIS OF EMERGING TRENDS

Mukesh Bhatter[1], Dr. Banhi Guha[2]

[1]Research Scholar in Management, St Xaviers University, Kolkata, India.
[2]Assistant Professor, St Xaviers University, Kolkata, India.

***Corresponding Author: Mukesh Bhatter**

ABSTRACT

Purpose: *The study provides the theoretical roots, research trajectories and promising research directions of carbon emission and financial performance relationship. The aim of this study is to deepen understanding of the relationship between carbon performance and the financial Performance of corporate by applying qualitative research approaches.*

Design/methodology/approach: *This study integrates bibliometric analyses, namely co-authorship analysis, co-citation analysis, and keyword co-occurrence analysis and a qualitative review, based on a dataset of 1132 publications retrieved from the SCOPUS database between January 2015 and January 2025.*

Findings: *The findings identify the leading academic authors, institutions, and countries contributing to this field. Results show that interest in the area of carbon emissions and financial performance has significantly increased, particularly after 2019. The study also highlights major research themes and emerging topics, such as carbon risk management, sustainable finance, and carbon disclosure practices.*

Furthermore, the analysis proposes future research agendas categorized by theoretical perspectives, contextual factors, and methodological approaches.

Research implications: *The study offers valuable insights for researchers, practitioners, and corporate leaders aiming to align financial performance with sustainability goals. It concludes by identifying research gaps and suggesting directions to facilitate the transition toward a more sustainable and low-carbon economy.*

Practical implications: *The results of the study offer insights to practitioners, researchers and academicians regarding scientific development, intricate relationships and the complexities involved in the intersection of carbon performance and financial performance. For corporate leaders, a better understanding of carbon performance and financial markets will contribute to designing policies to set up priorities for countering carbon emissions.*

Originality/value: *This study reviewed 1132 publications at the intersection of Carbon Emission and Corporate Financial Performance research domain in sustainable corporate practice and related fields to identify the theoretical roots, research trajectories and research themes and to propose promising research avenues.*

Keywords: Carbon Emission, Corporate Financial Performance, Bibliometric Analysis, Sustainability.

Cite this Article: Mukesh Bhatter, Banhi Guha. (2025). Corporate Financial Performance and Carbon Emissions: A Bibliometric Analysis of Emerging Trends. *International Journal of Accounting and Financial Management Research and Development (IJAFMRD)*, 3(1), 99-123.

https://iaeme.com/MasterAdmin/Journal_uploads/IJAFMRD/VOLUME_3_ISSUE_1/IJAFMRD_03_01_007.pdf

1. Introduction

The growing urgency to address climate change has heightened the focus on reducing carbon emissions globally. Between 1990 and 2022, carbon emissions from fossil fuels and industrial activities surged to 37.15 billion metric tons, with carbon dioxide as the primary contributor, accounting for over 60% of these emissions (Tiseo, 2023). As businesses face increasing scrutiny from stakeholders, governments, and investors, they are compelled to integrate sustainability into their operational strategies (Lashitew 2021). Regulatory reforms,

societal pressure, and the shift towards energy transitions have made environmental responsibility a core aspect of corporate strategy (Cadez et al., 2023; Cadez et al., 2019).

The interplay between carbon emissions and corporate financial performance (CFP) has emerged as a critical area of inquiry in recent years (Desai et al 2022). Some studies suggest that sustainability efforts can enhance profitability and firm value by improving operational efficiency and aligning with investor preferences for environmentally conscious enterprises (Anggraeni, 2015). Others highlight the financial burdens associated with implementing carbon-reduction strategies, particularly in emission-intensive industries, raising questions about the economic trade-offs of sustainability (Jiang et al 2010; Bhatia et al 2024; Mahapatra et al 2021). This dichotomy underscores the complexity of the relationship between carbon emissions and CFP and the need for a deeper understanding of the underlying dynamics (Alsayegh et al 2022)

Academic interest in this field has grown significantly since 2015, fueled by global initiatives such as the Paris Agreement and the increasing prominence of sustainable finance(Ozili & Peterson 2022). The volume of research addressing carbon emissions and CFP has surged (Ferrat 2021), exploring themes ranging from the impact of carbon reduction strategies on firm value to sectoral and regional variations in these relationships. However, this rapid growth has also resulted in fragmented research, with variations in methodologies, theoretical frameworks, and contextual focuses.

This study seeks to address these gaps by applying bibliometric methods, including co-citation, historical citation, and co-occurrence analyses, to systematically review 1132 SCOPUS-indexed publications (2015–2025). Bibliometric analysis utilizes a variety of frameworks, analytical tools, and methodologies to examine citation patterns within academic literature. This approach has enabled the creation of diverse metrics that help uncover the intellectual foundations of a given discipline and assess the influence of journals, research articles, and individual scholars (Akhavan et al., 2016).

Furthermore, in light of the increasing prevalence of CFP and Carbon emissions studies, it was determined that a bibliometric study needed to be conducted, focusing specifically on papers about this field.

We employed a methodical strategy in selecting literature, which was then subjected to rigorous bibliometric analysis in order to address a set of research questions (RQs):

Research Questions & Significance

What is the prevailing research trend in this field?

Understanding the annual growth and thematic evolution of the literature provides insight into how the field has developed over time and helps predict future research trajectories.

What are the primary sources and countries that have had a significant influence on the existing literature?

Identifying influential journals, conferences, and countries allows researchers to target high-impact platforms for publication and collaboration, and recognize regional research strengths.

According to citations in this research domain, which are the most influential articles (MIA)?

Analyzing the most cited articles highlights the foundational studies that have shaped the field and provides a benchmark for future research methodologies and theoretical frameworks.

Who are the prominent authors, and what is their affiliation in this study area?

Knowing the leading contributors and their institutional affiliations helps in building academic networks, collaboration opportunities, and recognizing key opinion leaders in the field.

What are the most used keywords in this research domain?

Keyword analysis assists researchers in quickly identifying the core themes, emerging topics, and commonly addressed issues, facilitating easier literature review and positioning of future research.

What is the scope for future research?

Recognizing gaps, underexplored areas, and emerging themes enables researchers to contribute novel insights and address unanswered questions, advancing the field strategically.

2. Literature Review

The relationship between corporate Carbon emission and corporate financial performance (CFP) has garnered significant attention in academic research, yet findings remain inconsistent and fragmented. Some studies suggest a positive relationship, arguing that improved CEP enhances operational efficiency, reduces waste, and attracts socially responsible investors, thereby boosting profitability and market valuation (Trinks et al., 2020; Zhang, 2011; Desai et al., 2022; Kong, 2017; Gallego et al., 2015). However, other studies emphasize the

financial burden of environmental initiatives, particularly in industries with high compliance costs, which can adversely affect short-term profitability (Safi et al., 2021; Tsaurai, 2019; Brouwers et al., 2018). Adding further complexity, some investigations report no significant relationship, highlighting the role of contextual and mediating factors such as firm size, industry type, and regional economic conditions (Jiang & Ma, 2019; Gok, 2022).

Carbon emissions, as a specific aspect of CEP, have become a focal point of research due to their direct implications for climate change (Serrano at el.,2021). The relationship between carbon emissions and CFP has been examined through theoretical lenses such as stakeholder theory, which argues that addressing environmental concerns enhances corporate reputation and financial rewards, and institutional theory, which emphasizes the competitive advantages of regulatory compliance (Lewandowski, 2015; Desai et al., 2022). Some studies report that carbon reduction strategies, including energy efficiency improvements and access to green financing, can enhance financial performance by reducing operational costs and attracting sustainability-oriented investors (Kong, 2017). On the other hand, research also highlights the significant costs associated with decarbonization efforts, particularly for emission-intensive industries, which can offset potential financial benefits (Brouwers et al., 2018; Tsaurai, 2019).

The rapidly growing body of research on the nexus between carbon emissions and CFP reflects the increasing importance of sustainability in business practices. However, this growth has led to a fragmented research landscape characterized by diverse methodologies, theoretical frameworks, and inconsistent findings.

Bibliometric analysis has emerged as a valuable tool for synthesizing such fragmented knowledge and providing a systematic overview of the field. By mapping intellectual structures, identifying research trajectories, and uncovering underexplored areas, bibliometric methods have proven effective in guiding research in adjacent fields (Donthu et al., 2021; Moral-Muñoz et al., 2020).

3. Methodology

3.1 Data Source and Extraction

This study uses the Scopus database as the primary data source. Scopus does a comprehensive and multidisciplinary indexing of peer-reviewed journals, especially in sustainability, economics, finance, and environmental sciences (Pranckutė,2021).The literature

search was conducted in January 2025, covering a ten-year publication window from January 2015 to January 2025.

The query string used in data extraction as follows: Your query : ((TITLE-ABS-KEY(carbon AND emissions) OR TITLE-ABS-KEY(greenhouse AND gas AND emissions) OR TITLE-ABS-KEY(carbon AND performance) AND TITLE-ABS-KEY(financial AND performance) OR TITLE-ABS-KEY(firm AND value) OR TITLE-ABS-KEY(corporate AND financial AND performance)) AND PUBYEAR > 2015 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA,"BUSI") OR LIMIT-TO (SUBJAREA,"SOCI") OR LIMIT-TO (SUBJAREA,"ECON")) AND (LIMIT-TO (DOCTYPE,"ar")) AND (LIMIT-TO (PUBSTAGE,"final")) AND (LIMIT-TO (LANGUAGE,"English")))

The search strategy targeted documents where the title, abstract, or author keywords included combinations of key terms such as “carbon emissions,” “greenhouse gas emissions,” or “carbon performance”, along with “financial performance,” “corporate financial performance,” or “firm value.” The search was further refined by applying specific filters to enhance the relevance and quality of the results. Only documents published between 2015 and 2025 were considered, and the scope was limited to four core subject areas: Business, Social Sciences and Economics. To maintain focus on high-quality academic output, the search included only journal articles, excluding conference papers, reviews, and other non-peer-reviewed formats. Additionally, only articles marked as final publications and written in English were retained. This structured approach ensured the inclusion of literature that was both academically rigorous and thematically aligned with the research objective. After applying the defined criteria and removing duplicates, a total of 1132 peer-reviewed journal articles were selected for bibliometric analysis.

3.2 Data Processing and Tools

The data were analysed using Bibliometrix R-package (version 4.2.1) via Biblioshiny interface and VOSviewer (version 1.6.19) for network visualization. Data cleaning included the normalization of author names and keywords (e.g., merging variations such as “GHG” and “greenhouse gas”). Duplicate entries were removed where necessary. Only journal articles were included; conference papers, editorials, and book chapters were excluded.

4. Results and Discussion

4.1 Trend Analysis

The bibliometric trend analysis of research on CFP and carbon emissions from 2015 to 2025 reveals a significant upward trajectory, indicating a growing academic focus on this critical intersection of sustainability and finance. Research output remained relatively low and stable between 2015 and 2019, with publication counts fluctuating between 33 and 69 annually. This period likely reflects the early-stage development of the field, with limited empirical evidence and theoretical advancements. A notable increase began in 2020, with publications rising to 97, marking a shift driven by heightened global awareness of climate change, ESG regulations, and corporate sustainability disclosures. The most substantial growth occurred between 2021 and 2024, where publication counts surged from 105 to 290, reflecting a widespread academic and corporate interest in carbon performance's financial implications. This surge aligns with global sustainability initiatives, regulatory pressures such as the Paris Agreement and corporate sustainability reporting mandates, and the rise of green finance and ESG investments. The dip in 2025 (15 publications) is likely due to incomplete data, and given the observed trajectory, research output in this domain is expected to continue its upward trend. The bibliometric growth highlights the increasing role of systematic literature reviews, bibliometric analyses, and empirical investigations in shaping future research on carbon emissions and CFP.

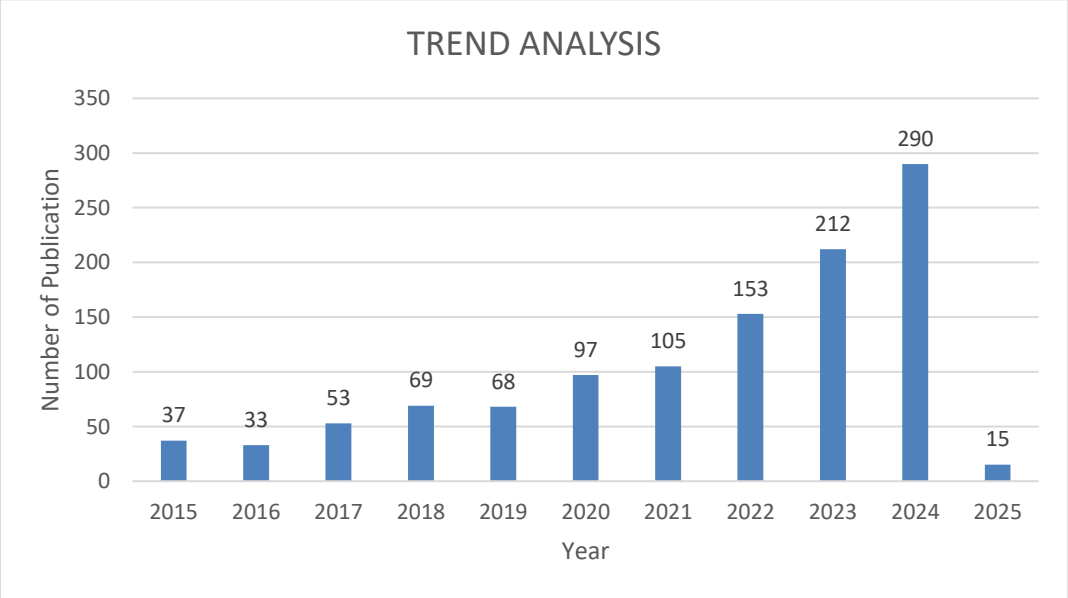


Figure 1: Trend Analysis

4.2 Source Analysis

The distribution of research publications on CFP and carbon emissions follows Bradford's Law, which states that a small set of core journals publishes the majority of research in a given field, while the remaining articles are spread across numerous other sources. Bradford's Law is useful for identifying core publications that specialize in a particular research domain, helping researchers navigate the most influential sources. Based on the results of processing with the Bibliometrix R-Package, the bibliometric analysis confirms that the top 10 journals account for more than 400 publications, reinforcing their role as the primary venues for research on carbon emissions and CFP.

Among these, Journal of Cleaner Production, Sustainability (Switzerland), and Business Strategy and the Environment emerge as the leading sources, reflecting the dominant focus on sustainability, environmental economics, and corporate strategy. However, the research landscape is highly dispersed, with nearly 200 other journals collectively publishing the remaining papers. These include Technological Forecasting and Social Change, Journal of Industrial Ecology, Resources Conservation and Recycling, and Environmental Impact Assessment Review, which contribute diverse perspectives spanning finance, policy, industrial management, and corporate ethics.

The dispersion of publications across multiple journals suggests an evolving and multidisciplinary research landscape where corporate sustainability intersects with finance, strategy, and policy

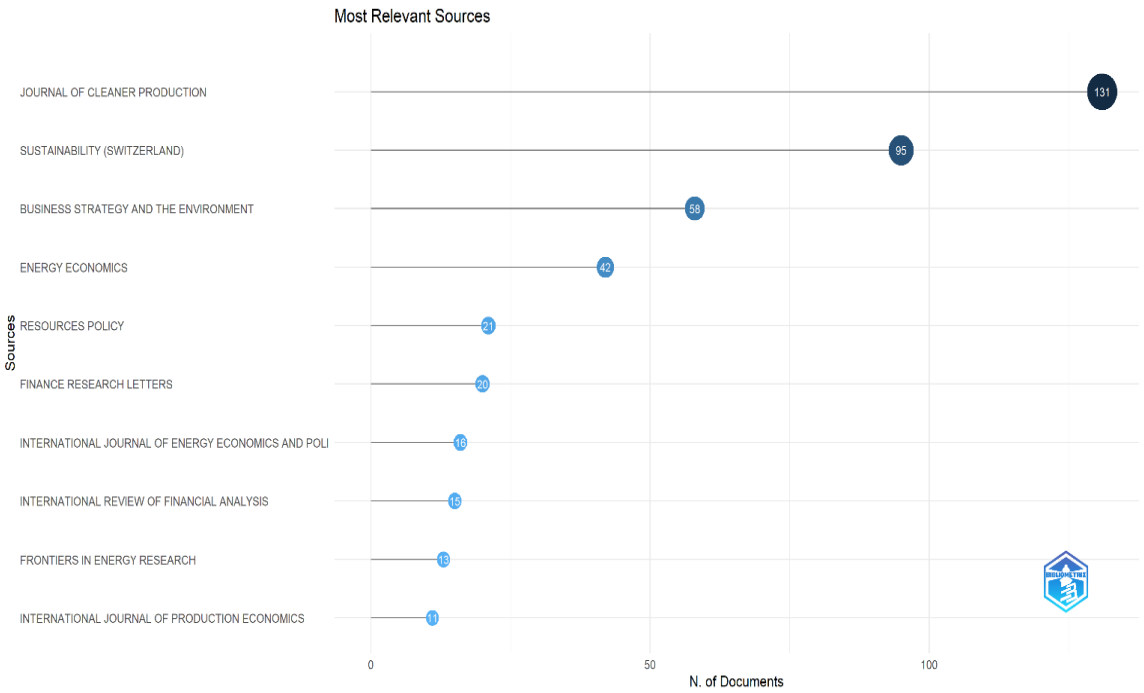


Figure 2: Source analysis

5. Country Analysis

The bibliometric analysis of CFP and carbon emissions research highlights the geographical concentration of scholarly contributions. China leads in research output, reflecting its strong focus on corporate sustainability, carbon reduction policies, and environmental responsibility in financial decision-making. The country's extensive publication volume suggests active involvement from universities, research institutions, and government-backed sustainability initiatives.

Following China, the United States (USA), the United Kingdom (UK), and Australia also contribute significantly to this field. These countries display a balanced mix of single-country publications (SCP) and multiple-country publications (MCP), indicating both independent research strength and international collaborations. India and Italy have also produced a notable number of publications, highlighting the increasing academic and policy focus on corporate sustainability and financial implications in emerging economies.

Other key contributors include Spain, Indonesia, Korea, Germany, and Canada, showcasing a diverse global research landscape. European and North American countries have a higher share of international collaborations, emphasizing their role in cross-border research initiatives. Additionally, developing nations such as Pakistan, Turkey, and the UAE are gradually increasing their research output, likely influenced by evolving regulatory frameworks and corporate adoption of ESG (Environmental, Social, and Governance) practices.

The regional distribution of publications suggests that government policies, corporate commitments, and financial sector involvement drive research output. Countries with strong sustainability regulations and financial incentives tend to produce higher volumes of research, reinforcing the connection between policy actions and academic discourse on carbon performance and financial sustainability.

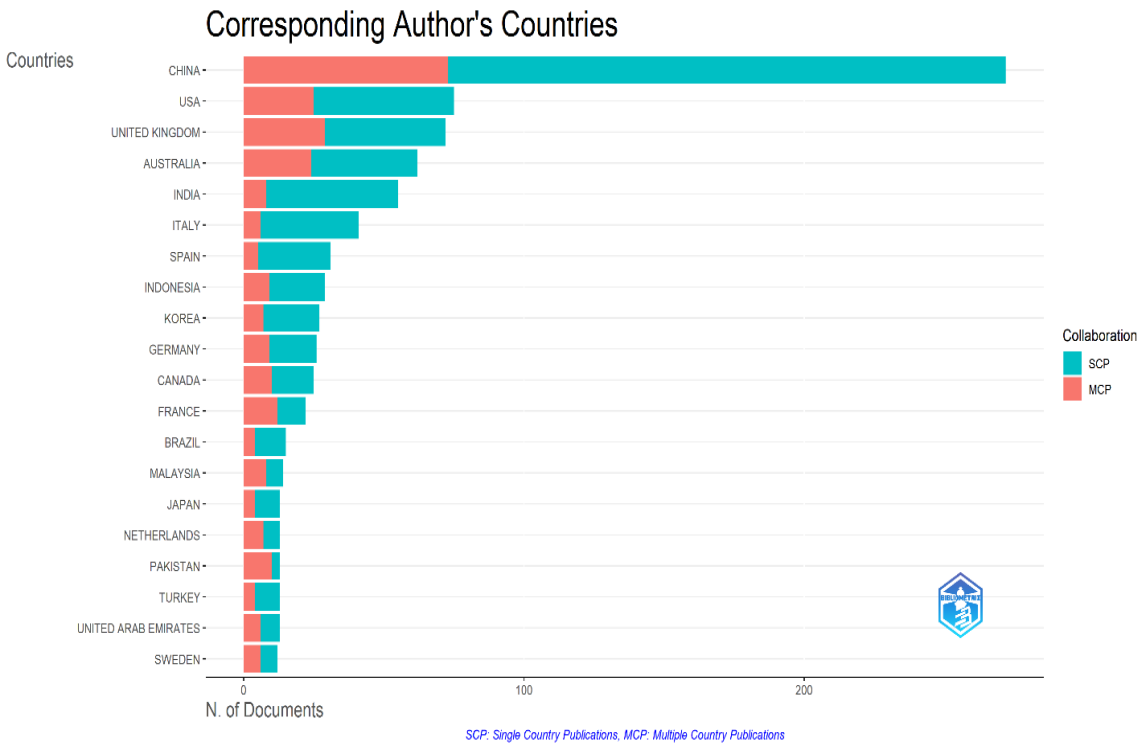


Figure 3: Country analysis

6. Affiliation Analysis

Leading institutions in the field of CFP and carbon emissions have significantly contributed to the academic development of this research area. Based on the bibliometric analysis, Hunan University leads the field with 27 publications, making it the most productive institution in this domain. Following closely, both the University of Hamburg and Western Sydney University have each published 21 research articles, demonstrating their sustained academic focus on the financial implications of carbon emissions.

Several other universities have also made notable contributions, including Central South University and Macquarie University, each with 20 publications, as well as the Central University of Finance and Economics (19 publications) and Nanjing University of Finance and Economics (18 publications). These institutions have played a crucial role in advancing research on how carbon emissions impact CFP, particularly in the context of sustainability policies, ESG integration, and financial risk management.

Furthermore, institutions such as China University of Geosciences (17 publications), Imperial College London (16 publications), and Sichuan University (16 publications) have contributed valuable research insights, emphasizing the multidisciplinary nature of this field, spanning business, finance, and environmental sciences. The growing number of publications

from these institutions over time reflects the increasing global emphasis on corporate sustainability, carbon regulation, and financial performance assessment. Their research efforts continue to provide critical empirical evidence, shaping future policies and business strategies in sustainable corporate finance

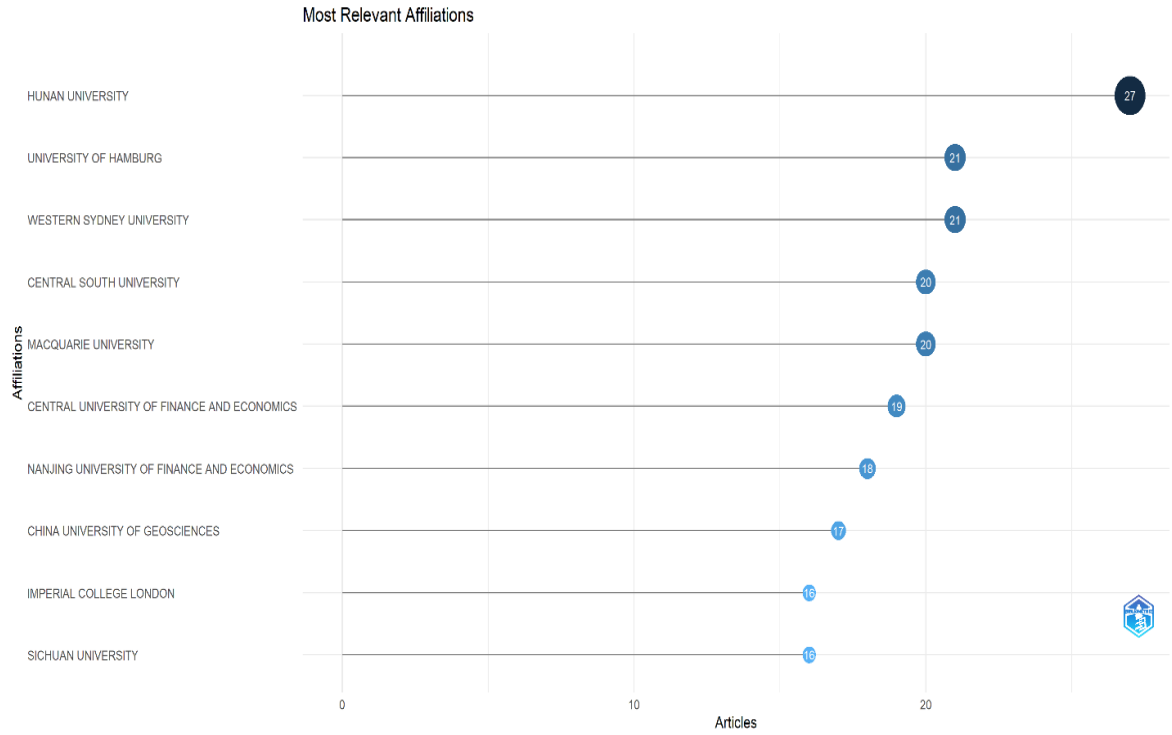


Figure 4: Affiliation Analysis

7. Citation Analysis

The average citations per year for research on CFP and carbon emissions show a declining trend, reflecting shifts in research influence and citation distribution over time. In 2015, the citation rate peaked at approximately 8.0 citations per article, indicating the strong impact of early influential studies in this field. However, from 2016 to 2019, the average number of citations steadily declined, stabilizing around 5.0 citations per article, suggesting that research output increased, leading to a more dispersed citation pattern. A temporary rise in 2021, reaching about 5.5 citations per article, may indicate renewed interest in earlier works, potentially influenced by the increasing prominence of ESG investment strategies and global carbon reduction policies.

Post-2022, the citation rate dropped sharply, falling below 3.0 in 2023 and further decreasing in 2024 and 2025, reaching nearly zero citations per article. This decline is likely

due to two primary factors: first, the recency effect, where newly published studies have had limited time to accumulate citations, and second, citation dispersion, as the growing volume of research in this area spreads citations across a broader range of publications. This pattern aligns with standard bibliometric trends, where older publications accumulate higher citation counts over time, while newer research takes longer to gain academic recognition. The low citation count in 2024 and 2025 is expected to adjust as recent publications receive more citations in future years.

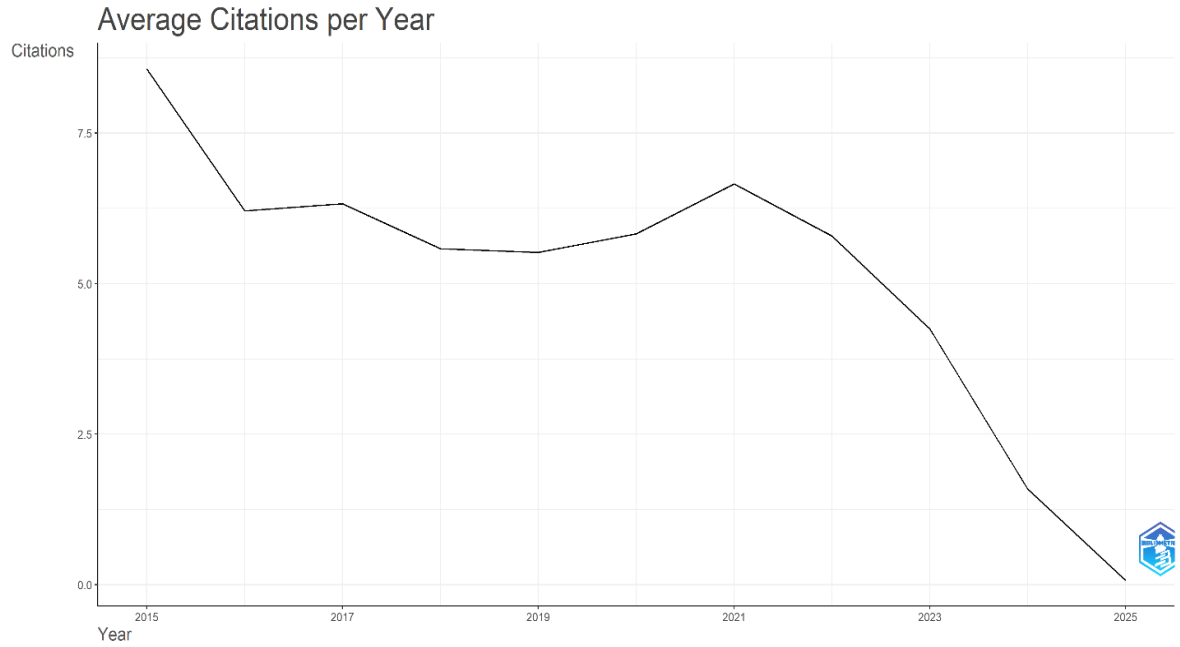


Figure 5: Citation analysis

The citation analysis of research on CFP and carbon emissions highlights China as the most influential country, with 5,582 citations, indicating the high impact and academic recognition of its research contributions. Australia, the USA, and the UK follow, each receiving a substantial number of citations, reflecting their strong research output and international collaboration networks. Germany, India, and Spain also hold significant citation counts, suggesting growing academic engagement in sustainability-related financial studies. The presence of countries like Italy, the Netherlands, and Korea further demonstrates the global reach and interdisciplinary nature of research in this domain. High citation counts signify the relevance of these studies in shaping discussions on carbon regulations, corporate sustainability, and financial performance, reinforcing the importance of policy-driven and empirical research in this evolving field.

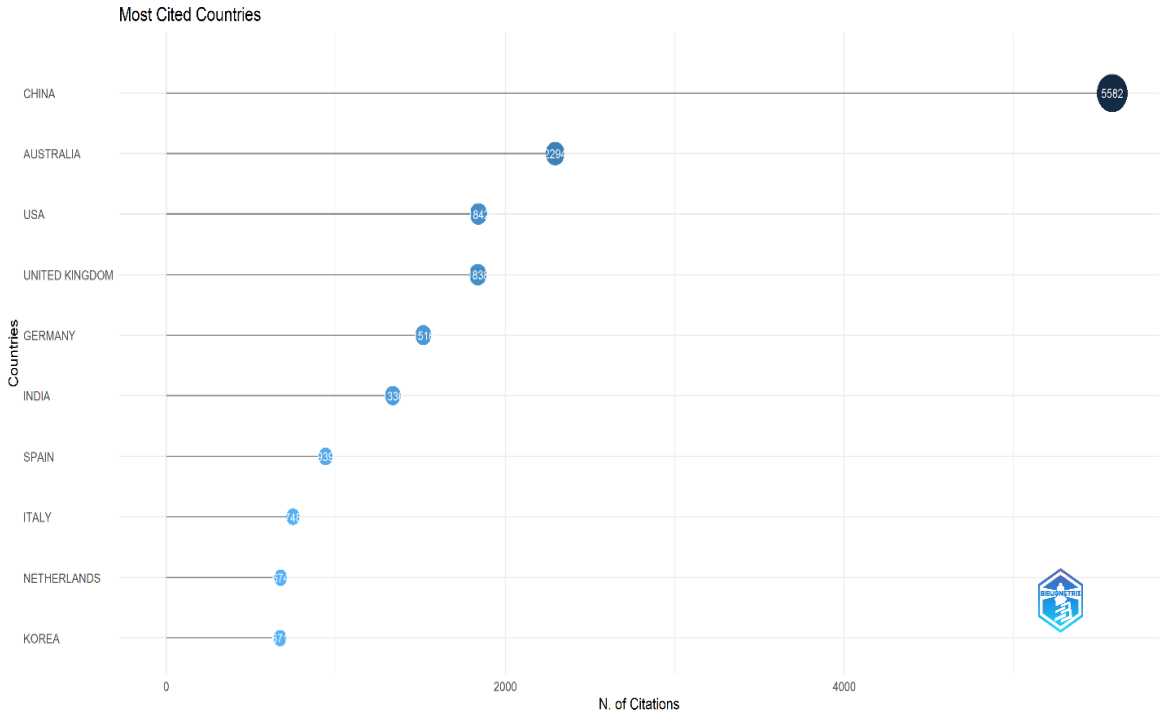


Figure 6: Citation Analysis

8. Author Analysis

The bibliometric analysis of CFP and carbon emissions identifies key contributors who have significantly shaped research in this field. Wang Y emerges as the most prolific author, with 16 publications, followed by Wang X with 14 publications. Other leading contributors include Li X and Li Y, each with 12 publications, and Luo L, Tang Q, and Wang J, each having 11 publications.

The dominance of Chinese Authors among the top contributors aligns with the broader trend of China's strong research output in this domain. This indicates the country's active role in sustainability research, corporate governance, and environmental finance. Authors such as Chen X, Chen L, and Li J, with 8–9 publications, also contribute substantially, further emphasizing the growing research interest in carbon emissions and financial performance.

The distribution of authors suggests a collaborative and interdisciplinary research landscape, with significant contributions from scholars in accounting, finance, and sustainability studies. The presence of multiple authors with similar publication counts indicates ongoing research momentum, highlighting the continued expansion of this field.

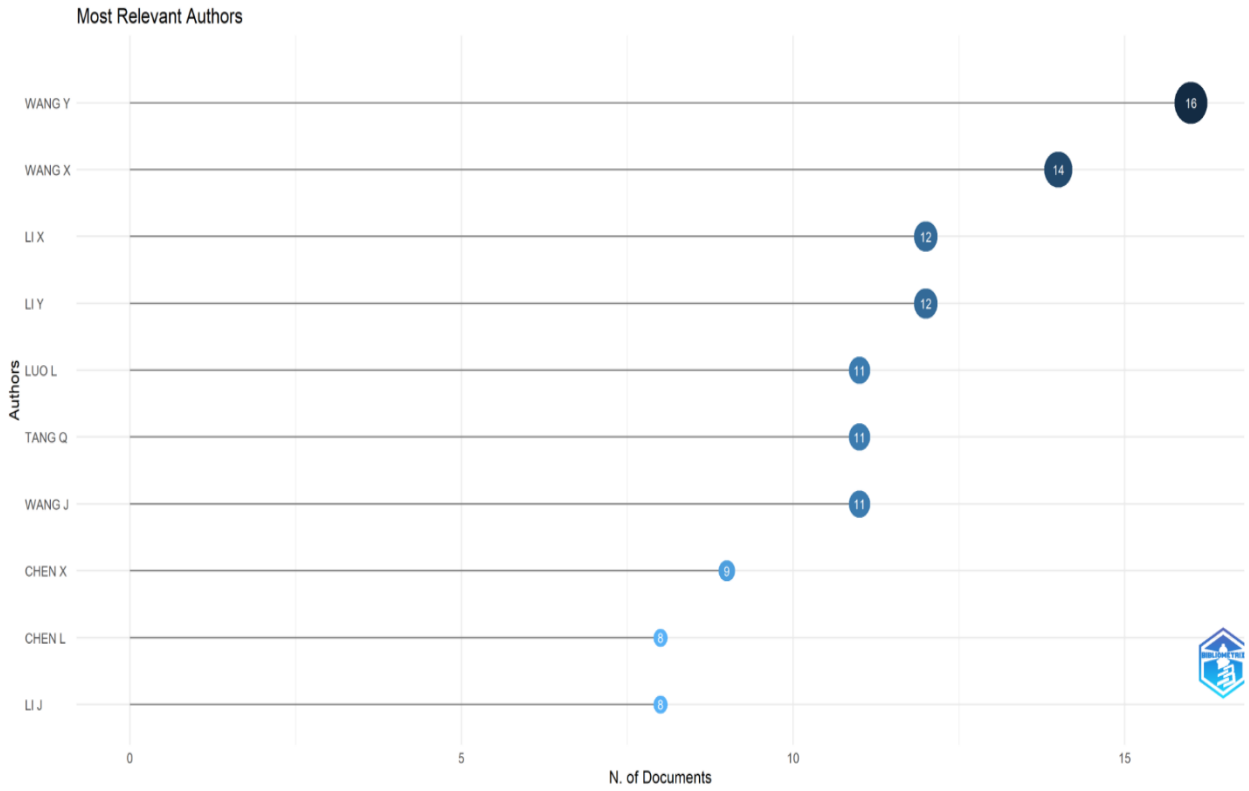


Figure 7: Author Analysis

9. Author Collaboration Analysis

The co-authorship analysis, conducted using VOSviewer with full counting method and a threshold of at least two publications per author, provides important insights into the collaborative structure among researchers in the domain of CFP and carbon emissions.

The results reveal a moderately connected network organized into three primary clusters. Tang, Qingliang and Luo, Le emerge as the most central authors, indicating their pivotal role in fostering research collaborations. Luo, Le forms a strong collaborative group with authors such as Shrestha, Pramila and Choi, Bobae, while Tang, Qingliang is linked with Li, Yongqing, He, Yu, and Datt, Ragini Rina, highlighting two distinct research teams actively contributing to this field. Additionally, a smaller collaboration cluster is formed between Elsayin, Jibriel and Datt, Irina, focusing on specific niches within the broader research area.

The visualization indicates that, although some collaborative ties exist, the overall author network remains relatively fragmented, with limited inter-cluster collaboration. This suggests that while collaboration is present, the research community could benefit from broader interdisciplinary and cross-institutional linkages to build a more integrated and robust academic foundation.

In summary, while key researchers have initiated meaningful collaborations, there remains significant potential to enhance collective research efforts and deepen the intellectual cohesion within the CFP and carbon emissions research landscape

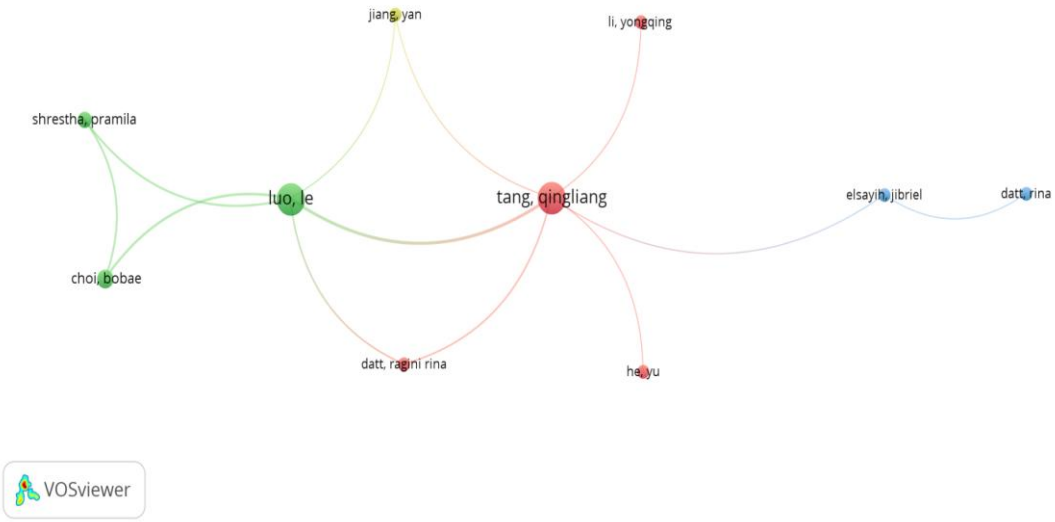


Figure 8: Author Collaboration Analysis

9.1 Keyword Co-occurrence Analysis

To explore the thematic structure of research on corporate financial performance (CFP) and carbon emissions, a keyword co-occurrence analysis was conducted using VOSviewer. The analysis was based on author keywords, with a full counting method and a minimum occurrence threshold of five keywords.

The resulting network map revealed a dense and highly interconnected structure, indicating a mature and diverse research field. "Climate change," "carbon emissions," "sustainable development," and "carbon disclosure" emerged as the most dominant keywords, reflecting the core focus areas within this research domain.

The keyword network is organized into six distinct clusters, each representing a significant research theme:

- Cluster 1 (Red): Focused on carbon disclosure, carbon accounting, firm performance, and ESG disclosure, emphasizing the relationship between corporate transparency and financial outcomes.

- Cluster 2 (Green): Highlighted topics such as carbon emissions, energy efficiency, life cycle assessment, and financial analysis, dealing with environmental performance and corporate efficiency.
- Cluster 3 (Yellow): Revolved around renewable energy, technological innovation, carbon tax, and natural resources, reflecting research centred on policy innovation and decarbonization strategies.
- Cluster 4 (Blue): Covered climate risk, carbon risk, sustainable finance, and green bonds, indicating a growing interest in integrating carbon risk into financial systems.
- Cluster 5 (Purple): Focused on supply chain management, carbon trading mechanisms, and carbon pricing, exploring market-based solutions for emission reduction.
- Cluster 6 (Light Blue): Related to environmental sustainability metrics such as environmental performance, sustainable development, and disclosure.

The density of the network suggests that studies are increasingly interdisciplinary, combining elements from environmental sciences, finance, economics, and management. The strong interconnections among clusters demonstrate that researchers are addressing the CFP–carbon emissions relationship from multiple perspectives, including regulatory frameworks, corporate governance, financial market implications, and technological advancements.

Overall, the keyword co-occurrence analysis reveals a mature but evolving research landscape with emerging topics like carbon risk management and sustainable finance, providing opportunities for future studies to further deepen and diversify the field.

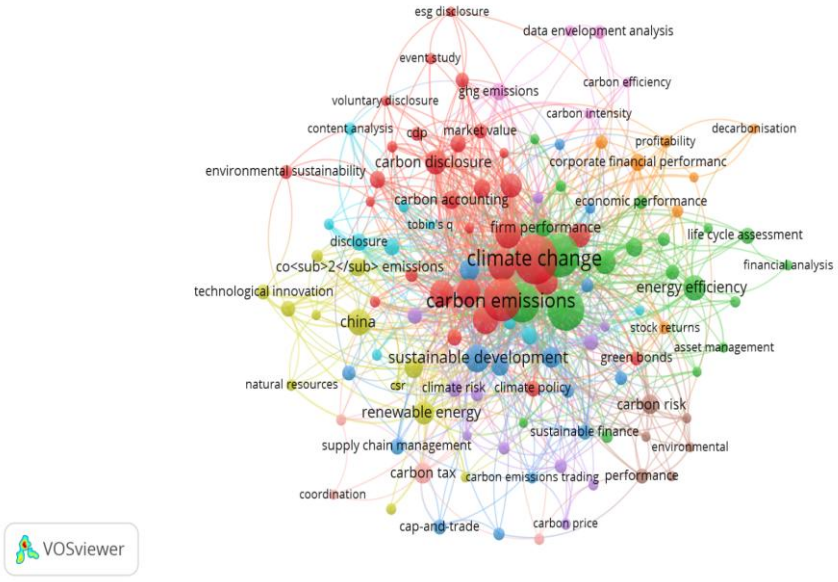


Figure 9: Keyword Occurrence Analysis

10. Co-citation Analysis

A co-citation analysis of authors was performed using VOSviewer to explore the intellectual structure of the research domain linking CFP and carbon emissions. The analysis was conducted based on full counting, with a minimum citation threshold applied to focus on the most influential authors.

The resulting network revealed a well-structured and densely connected map, forming three prominent clusters. Each cluster represents a different thematic orientation within the field:

- Cluster 1 (Green Cluster): This group is anchored by authors such as Luo L., Kolk A., and Gray R., reflecting research grounded in environmental accounting, sustainability reporting, corporate governance, and carbon disclosure practices. These authors have laid the theoretical and empirical foundations connecting corporate sustainability activities with financial outcomes.
- Cluster 2 (Red Cluster): Dominated by authors like Wang Y., Liu J., and Shahbaz M., this cluster focuses on carbon emissions, macroeconomic linkages, firm valuation, and financial market responses. Research here examines how environmental performance influences broader financial and economic systems, including stock returns, investment risks, and policy impacts.
- Cluster 3 (Blue Cluster): This smaller but significant group includes authors such as Sarkis J., Zhu Q., and Hair J.F., emphasizing sustainable supply chain management, green logistics, and organizational environmental behavior. These studies integrate sustainability into operational and management practices within firms.

The size of the nodes indicates the frequency of citations received, with Luo L. and Wang Y. emerging as the most co-cited authors, highlighting their substantial influence on shaping the field. The strength and density of the links suggest that these authors' works are frequently referenced together, indicating a high degree of conceptual and thematic alignment.

The presence of distinct but interconnected clusters suggests that the research field is both mature and interdisciplinary, integrating perspectives from accounting, finance, economics, management, and environmental science. Overall, the co-citation analysis offers a robust understanding of the intellectual pillars supporting current research on carbon emissions and CFP.

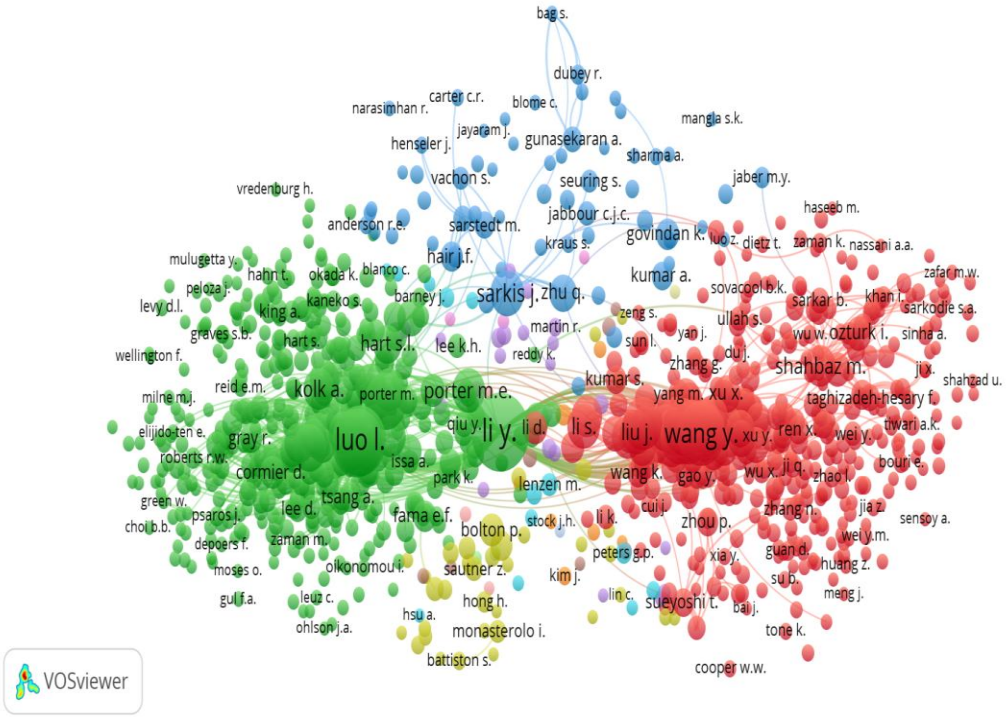


Figure 10: Co-citation Analysis

11. Country Collaboration Analysis

A country collaboration analysis was conducted using VOSviewer to explore the global research partnerships in the domain of CFP and carbon emissions. The co-authorship network, generated based on full counting, reveals a moderately dense pattern of international collaborations, with several prominent regional clusters.

The visualization highlights that China, United States, and United Kingdom are the leading contributors to the field, as indicated by the larger node sizes and stronger interconnections. These countries have developed extensive collaborative ties both with each other and with other major economies such as Australia, Germany, Canada, and Italy.

- Cluster 1 (Green Cluster): Dominated by China, this cluster includes active collaborations with countries such as Australia, Malaysia, Pakistan, Indonesia, and others from the Asia-Pacific region.
- Cluster 2 (Red Cluster): Led by the United States and United Kingdom, this cluster reflects strong research partnerships across Western countries, particularly with Germany, Spain, Italy, Belgium, and Canada.

- Cluster 3 (Blue Cluster): Comprising countries like Japan, Greece, Ireland, and Egypt, representing smaller but growing collaborative activities.
- Cluster 4 (Purple Cluster): Features countries such as South Korea and Bangladesh, indicating emerging collaboration efforts within the Asian context.

The map also reveals important cross-regional linkages, with countries like Singapore, Hong Kong, and New Zealand serving as bridges between larger regional clusters.

While several emerging economies are present in the global network, it is noteworthy that India does not feature prominently within the collaboration map. This absence suggests that India's contribution, although growing in absolute publication numbers, currently lacks significant international co-authorship ties in the field of CFP and carbon emissions. Strengthening international collaborations could enhance India's global visibility and influence in sustainability and financial research.

Overall, the country collaboration analysis indicates that research in this domain is increasingly globalized, though still characterized by regional concentration. Enhanced cross-continental collaborations would be instrumental in creating a more integrated global research community.

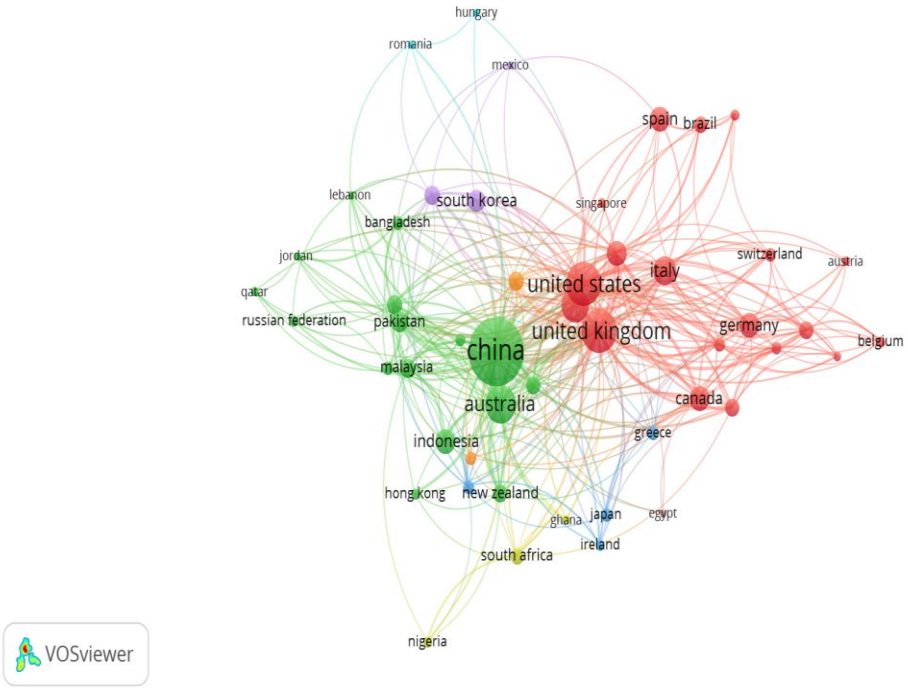


Figure 11: Country collaboration analysis

12. Discussion

In this section, the research questions formulated in the methodology section are discussed based on the results of the bibliometric analysis.

What is the prevailing research trend in this field?

The annual publication trend analysis shows a significant rise in research on CFP and carbon emissions, particularly after 2019. There was steady growth from 2015 to 2019, followed by an acceleration between 2020 and 2024, peaking at 290 publications in 2024. This indicates a growing academic interest in sustainable finance and carbon-related corporate performance measures.

What are the primary sources and countries that have had a significant influence on the existing literature?

The analysis reveals that the Journal of Cleaner Production and Sustainability (Switzerland) are the primary journals publishing a large number of articles in this domain. From the country perspective, China leads both in terms of research output and citations, followed by the United States, United Kingdom, and Australia, reflecting the global spread of carbon performance and financial research.

Which are the most influential articles (MIA) according to citations?

The citation analysis indicates that earlier published articles (2015–2017) have higher citation counts compared to recent ones. The most cited works laid the theoretical and empirical foundations, particularly in linking carbon emission disclosures with financial market performance and firm valuation.

Who are the prominent authors, and what are their affiliations?

Authors such as Wang Y, Wang X, and Li X have emerged as the most prolific researchers. Major affiliations include Hunan University, University of Hamburg, and Western Sydney University, suggesting strong institutional backing for sustainability and financial performance research.

What are the most used keywords in this research domain?

Keyword co-occurrence analysis shows frequent terms like “carbon emissions,” “Climate Change” “corporate financial performance,” “sustainability reporting,” and “ESG disclosure.” These keywords highlight the dominant research themes and confirm the increasing integration of environmental sustainability with financial assessment frameworks.

What is the scope for future research?

Future research could explore emerging themes like carbon pricing mechanisms, regional regulatory impacts on firm value, industry-specific carbon financial dynamics, and integration of carbon risk into corporate financial risk assessments.

13. Theoretical Implications

The current study contributes to the bibliometric literature in several important ways:

- This is among the first attempts to systematically map the research on carbon emissions and corporate financial performance using a bibliometric approach based on the Scopus database.
- The analysis provides a comprehensive overview of trends, core sources, influential authors, and dominant research themes, offering a strong foundation for future empirical and theoretical investigations.
- It establishes a baseline for identifying emerging research clusters and thematic gaps, aiding scholars to strategically position their work within the broader sustainability-finance discourse.
- By identifying leading countries and institutions, the study also informs collaboration strategies and network-building opportunities for researchers in this domain.

13.1 Limitations

Although the study offers valuable insights, several limitations should be acknowledged:

- The analysis relies exclusively on Scopus-indexed publications, excluding potential high-quality work from other databases like Web of Science, Dimensions, and Google Scholar.
- Only English-language articles were considered, possibly excluding influential non-English research.
- The recency bias affects citation-based analyses, as newer articles (especially those published after 2022) have had limited time to accumulate citations.

These limitations provide a basis for designing more comprehensive future reviews.

14. Conclusion

This bibliometric study analysed 1132 publications retrieved from the Scopus database between 2015 and 2024 on the relationship between corporate financial performance and carbon emissions. The findings reveal a significant upward trend in publications, with notable contributions from China, the United States, and other developed economies. Key journals such as the Journal of Cleaner Production and Sustainability (Switzerland) dominate the field, while prolific authors and institutions have established strong research networks.

The study also highlights that research themes have gradually evolved, focusing increasingly on sustainability disclosure, carbon footprint management, financial market implications, and ESG compliance. While earlier works received more citations, emerging topics related to carbon risk and financial valuation offer promising areas for further research. Overall, this analysis provides a structured view of the intellectual landscape and offers a valuable roadmap for future academic inquiry into the vital intersection of carbon emissions and corporate financial performance.

References

[1] Akhavan, P., Ebrahim, N.A., Fetrati, M.A. and Pezeshkan, A. (2016), "Major trends in knowledge management research: a bibliometric study", Scientometrics, Vol. 107 No. 3, pp. 1249-1264.

[2] Alsayegh, M. F., Abdul Rahman, R., & Homayoun, S. (2022). Corporate sustainability performance and firm value through investment efficiency. *Sustainability*, *15*(1), 305.

[3] Bhatia, M., Meenakshi, N., Kaur, P., & Dhir, A. (2024). Digital technologies and carbon neutrality goals: An in-depth investigation of drivers, barriers, and risk mitigation strategies. *Journal of Cleaner Production*, *451*, 141946.

[4] Brouwers, R., Schoubben, F., & Van Hulle, C. (2018). The influence of carbon cost pass through on the link between carbon emission and corporate financial performance in the context of the European Union Emission Trading Scheme. *Business Strategy and the Environment*, *27*(8), 1422-1436.

[5] Desai, R., Raval, A., Baser, N., & Desai, J. (2022). Impact of carbon emission on financial performance: empirical evidence from India. *South Asian Journal of Business Studies*, *11*(4), 450-470.

[6] Desai, R., Raval, A., Baser, N., & Desai, J. (2022). Impact of carbon emission on financial performance: empirical evidence from India. *South Asian Journal of Business Studies*, *11*(4), 450-470.

[7] Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of business research*, *133*, 285-296.

[8] Endrikat, J., Guenther, E., & Hoppe, H. (2014). Making sense of conflicting empirical findings: A meta-analytic review of the relationship between corporate environmental and financial performance. *European Management Journal*, *32*(5), 735-751.

[9] Ferrat, Y. (2021). Carbon emissions and firm performance: A matter of horizon, materiality and regional specificities. *Journal of Cleaner Production*, *329*, 129743.

[10] Gallego-Álvarez, I., Segura, L., & Martínez-Ferrero, J. (2015). Carbon emission reduction: The impact on the financial and operational performance of international companies. *Journal of Cleaner Production*, *103*, 149-159.

[11] Gök, A. (2020). The role of financial development on carbon emissions: a meta regression analysis. *Environmental Science and Pollution Research*, *27*(11), 11618-11636.

[12] Jiang, C., & Ma, X. (2019). The impact of financial development on carbon emissions: a global perspective. *Sustainability*, *11*(19), 5241.

[13] Jiang, M. P., & Tovey, K. (2010). Overcoming barriers to implementation of carbon reduction strategies in large commercial buildings in China. *Building and Environment*, *45*(4), 856-864.

[14] Kong, Y., & Wei, F. (2017). FINANCIAL DEVELOPMENT, FINANCIAL STRUCTURE AND CARBON EMISSION. *Environmental Engineering & Management Journal (EEMJ)*, *16*(7).

[15] Lashitew, A. A. (2021). Corporate uptake of the Sustainable Development Goals: Mere greenwashing or an advent of institutional change?. *Journal of International Business Policy*, *4*(1), 184-200.

[16] Lewandowski, S. (2015). Carbon emissions and corporate financial performance: A systematic literature review and options for methodological enhancements. *Corporate carbon and climate accounting*, 193-215.

[17] Mahapatra, S. K., Schoenherr, T., & Jayaram, J. (2021). An assessment of factors contributing to firms' carbon footprint reduction efforts. *International Journal of Production Economics*, *235*, 108073.

[18] Ozili, P. K. (2022). Green finance research around the world: a review of literature. *International Journal of Green Economics*, *16*(1), 56-75.

[19] Pranckutė, R. (2021). Web of Science (WoS) and Scopus: The titans of bibliographic information in today's academic world. *Publications*, *9*(1), 12.

[20] Safi, A., Chen, Y., Wahab, S., Ali, S., Yi, X., & Imran, M. (2021). Financial instability and consumption-based carbon emission in E-7 countries: the role of trade and economic growth. *Sustainable Production and Consumption*, *27*, 383-391.

[21] Serrano, T., Aparcana, S., Bakhtiari, F., & Laurent, A. (2021). Contribution of circular economy strategies to climate change mitigation: generic assessment methodology with focus on developing countries. *Journal of Industrial Ecology*, *25*(6), 1382-1397.

[22] Sharma, S. S. (2011). Determinants of carbon dioxide emissions: empirical evidence from 69 countries. *Applied energy*, *88*(1), 376-382.

[23] Trinks, A., Mulder, M., & Scholtens, B. (2020). An efficiency perspective on carbon emissions and financial performance. *Ecological Economics*, *175*, 106632.

[24] Tsaurai, K. (2019). The impact of financial development on carbon emissions in Africa. *International Journal of Energy Economics and Policy*, *9*(3), 144-153.

[25] Zhang, B., Ma, L., & Liu, Z. (2020). Literature trend identification of sustainable technology innovation: A bibliometric study based on co-citation and main path analysis. *Sustainability*, *12*(20), 8664.

[26] Zhang, Y. J. (2011). The impact of financial development on carbon emissions: An empirical analysis in China. *Energy policy*, *39*(4), 2197-2203.

Citation: Mukesh Bhatter, Banhi Guha. (2025). Corporate Financial Performance and Carbon Emissions: A Bibliometric Analysis of Emerging Trends. International Journal of Accounting and Financial Management Research and Development (IJAFMRD), 3(1), 99-123.

Abstract Link: https://iaeme.com/Home/article_id/IJAFMRD_03_01_007

Article Link:
https://iaeme.com/MasterAdmin/Journal_uploads/IJAFMRD/VOLUME_3_ISSUE_1/IJAFMRD_03_01_007.pdf

✉ **editor@iaeme.com**