"Green Investment" with reference to Sustainable Development Goals: A Bibliometric Analysis using dimensions

Khushi Milinkumar Shah
Research Scholar
Veer Narmad South Gujarat University, Surat, Gujarat
Department of Business and Industrial Management
Email:- khushimshah231@gmail.com
Mo:-9737316148

Dr. Vatsal Patel
Assistant Professor
Veer Narmad South Gujarat University, Surat, Gujarat
Department of Business and Industrial Management
Email:-vbpatel01@vnsgu.ac.in
Mo:-9537744427

Abstract:

Green investment has emerged as a critical mechanism for promoting sustainable development, aligning financial practices with global environmental and social priorities. Despite its growing importance, limited research has systematically examined its relationship with the Sustainable Development Goals (SDGs). This study employs bibliometric analysis using the Dimensions.ai database to map publication trends, citation patterns, and intellectual structures in green investment research with reference to SDG 12: Responsible Consumption and Production. The findings reveal rapid growth in scholarly output, a strong multidisciplinary orientation led by commerce, management, economics, and environmental sciences, and the presence of influential authors and collaborative networks. At the same time, underexplored domains such as health, cultural studies, and applied ethics highlight opportunities for further inquiry. By uncovering research trends, intellectual clusters, and gaps, this study contributes to a comprehensive understanding of the evolving landscape of green investment research and offers insights for future scholarship and policy development.

1. Introduction:

Green investment has emerged as a pivotal strategy in addressing global environmental challenges while fostering sustainable economic growth. It involves the allocation of financial resources to projects and initiatives that prioritize environmental sustainability, such as renewable energy, pollution reduction, and sustainable resource management. The increasing urgency of climate change and environmental degradation has led to a global shift towards integrating sustainability into financial decision-making processes, making green investment a central focus of contemporary research and policy.

The Sustainable Development Goals (SDGs), adopted by the United Nations in 2015, provide a comprehensive framework for achieving sustainable development across economic, social, and environmental dimensions. In particular, SDG 12—Responsible Consumption and Production—emphasizes the need to promote resource efficiency, reduce waste generation, and encourage sustainable practices across industries and sectors. Green investment plays a crucial role in advancing the objectives of SDG 12 by financing projects that contribute to sustainable consumption and production patterns.

Despite the growing significance of green investment within the SDG framework, there remains a limited systematic analysis of its development and impact. Bibliometric analysis offers a robust method for examining the evolution of research in this area, identifying key contributors, and mapping thematic trends. Recent studies have employed bibliometric techniques to explore various aspects of green investment and its alignment with sustainability

goals. For instance, a bibliometric analysis of green investment trends and developments revealed the increasing emphasis on green finance, technological innovation, and regional development in the literature (Judijanto, Praja, et al., 2024). Similarly, research on green finance and sustainable investment strategies has highlighted the dominance of themes such as sustainability, green economy, and decentralized finance, with notable contributions from countries like China, the United Kingdom, and European nations (Judijanto, Yoga, et al., 2024).

This study aims to bridge the existing gap by conducting a comprehensive bibliometric analysis of research on green investment within the context of SDG 12. By examining publication trends, citation patterns, authorship networks, and thematic structures, this research seeks to provide valuable insights into the intellectual landscape of green investment and its role in promoting sustainable consumption and production patterns.

2. Literature Review

The Sustainable Development Goals (SDGs), adopted by the UN in 2015, provide a universal framework to address poverty, inequality, and environmental degradation while fostering inclusive growth. Unlike the Millennium Development Goals, the SDGs emphasize an integrated balance of economic, social, and environmental dimensions (Kumar & Balyan, 2025). A key aspect lies in sustainability disclosure, with frameworks such as the Global Reporting Initiative (GRI) and the SDG Index Score enabling structured reporting and performance measurement. However, disclosure practices, particularly in Asia, remain limited despite gradual improvements (Maji & Haloi, 2025). Academic research highlights the prominence of SDGs across disciplines, with increasing attention to sectoral applications, behavioral change, and interdisciplinary contributions (Bulut & Çağlar, 2025).

Green investment has emerged as a crucial driver of sustainable finance, encompassing projects in renewable energy, waste management, pollution reduction, and resource conservation (Bertomeu, 2016; Chen & Majeed, 2024). It mobilizes capital from public and private sources to support environmental goods and services, reflecting both economic imperatives and responses to climate change (Gallo et al., 2025; Tran et al., 2020). Beyond institutional strategies, behavioral factors such as values, knowledge, and attitudes also shape investor intentions (Bertomeu, 2016). This multidimensionality has led to a growing body of research exploring economic, social, and psychological aspects of green investment, with bibliometric studies mapping its evolution and intellectual structure (K. M. Mohammed Radeef & G. Velmurugan, 2025).

Bibliometric analysis itself is a key methodological tool for evaluating scientific output, tracing its origins to Garfield's citation analysis. It systematically maps publication trends,

citation networks, and collaboration patterns using tools like VOSviewer and CiteSpace (Atak et al., 2025; Necula, 2025). While widely applied across disciplines, fewer studies critically examine bibliometrics itself, though recent works highlight leading countries, institutions, and thematic trends (İri & Ünal, 2024).

Overall, literature suggests that green investment plays a pivotal role in advancing SDGs, while bibliometric approaches provide valuable insights into research impact, intellectual structures, and gaps, thereby informing future scholarship and policy directions.

3. Research Methodology

The primary objective of this study is to conduct a bibliometric analysis of research on green investment in the context of the Sustainable Development Goals (SDGs). To achieve this, the study adopts a quantitative research design based on bibliometric methods, which are widely recognized for their ability to systematically map scientific literature, analyze publication and citation patterns, and uncover intellectual structures and collaboration networks. This design is particularly appropriate for capturing the evolution of research on green investment and its intersection with the SDGs.

Data collection:

The dataset for this study was collected from the Dimensions.ai database in July 2025, which provides extensive coverage of peer-reviewed literature across disciplines. An initial search using the keyword “green investment” in titles and abstracts yielded 2,971 research papers. To ensure greater relevance, the results were refined by selecting only those records indexed under the Sustainable Development Goals category, specifically SDG 12: Responsible Consumption and Production. After applying this filter, the final dataset comprised 410 research papers, which served as the basis for the bibliometric analysis.

Data Analysis tools:

The analysis focused on examining publication and citation trends, authorship patterns, collaboration networks, and thematic clusters within the selected dataset. Visualization was conducted using VOSviewer software, which enabled the generation of bibliometric maps to identify intellectual linkages, influential contributors, and emerging themes in the field of green investment with reference to the SDGs.

Future Scope and Limitations:

The scope of this study is limited to publications indexed in the Dimensions.ai database, and the findings are therefore constrained by the coverage of this source. Moreover, the results reflect the state of research at the time of data collection and may not include works published afterward. As the study relies exclusively on secondary bibliometric data, no human

participants were involved, and ethical approval was not required. Despite these limitations, the methodology provides a robust framework for understanding global research trends on green investment in relation to the SDGs.

4. Data Analysis & Discussion

I. Research Category

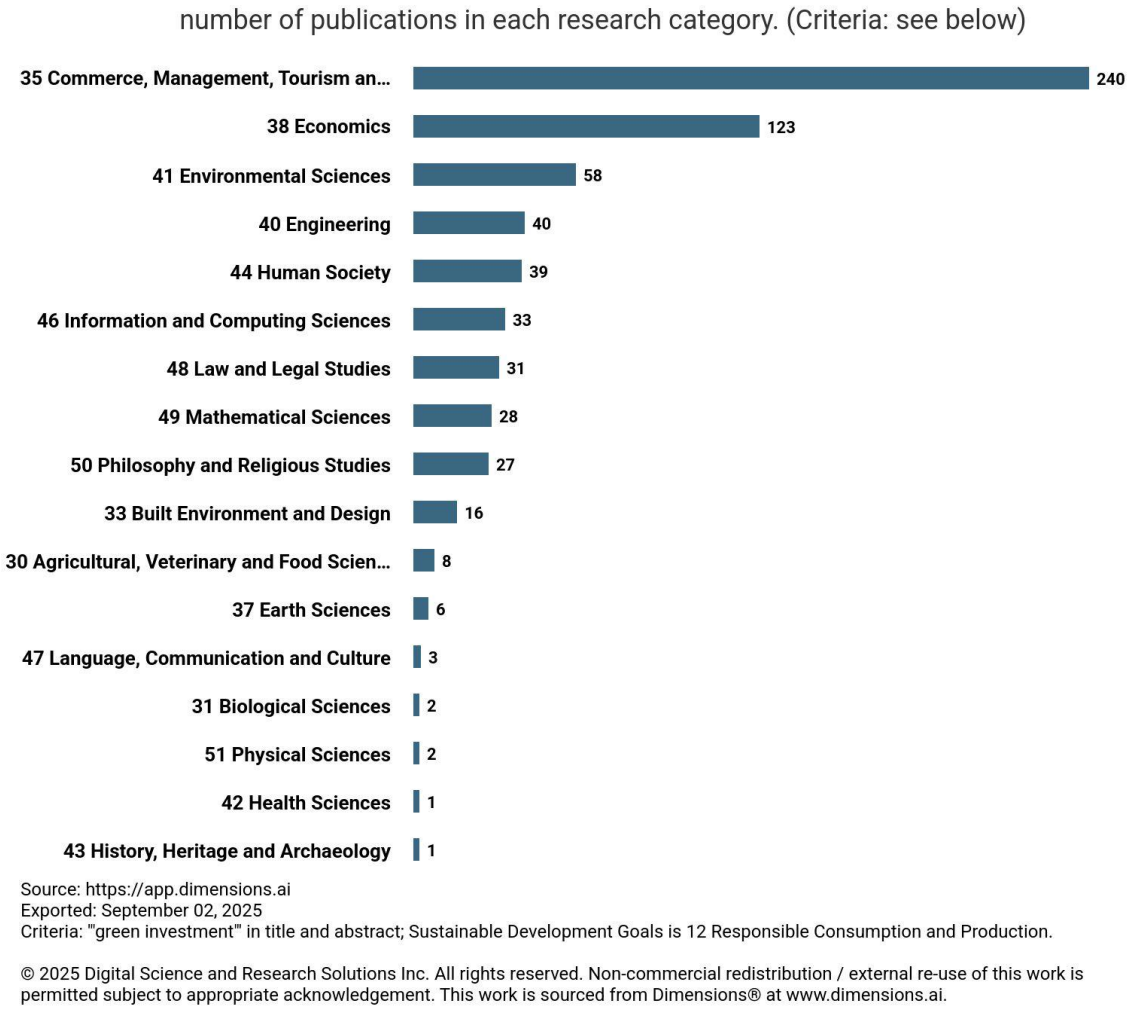

FIGURE 1 BAR CHART OF RESEARCH CATEGORY

The bibliometric analysis indicates that research on green investment under SDG 12 is highly multidisciplinary but concentrated in a few key areas. Commerce, Management, Tourism, and Services dominate with 240 publications, emphasizing strategy, organizational behavior, and sustainable supply chains, followed by Economics (123 papers), focusing on applied economics and policy-oriented perspectives. Environmental Sciences (58 papers) and Engineering (40 papers) reflect the role of technology and resource management, while Human Society (39 papers), Law (31 papers), and Applied Ethics (26 papers) highlight social, governance, and moral dimensions. Emerging contributions from Mathematical Sciences, Computing, Agriculture, and Earth Sciences suggest growing use of quantitative modeling and

sectoral applications, whereas health, biological, and cultural studies remain underexplored, indicating potential avenues for future research.

II. Overview of publication

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Publications (total)	1	0	11	6	14	25	58	85	91	114

TABLE 1 PUBLICATIONS IN EACH YEAR

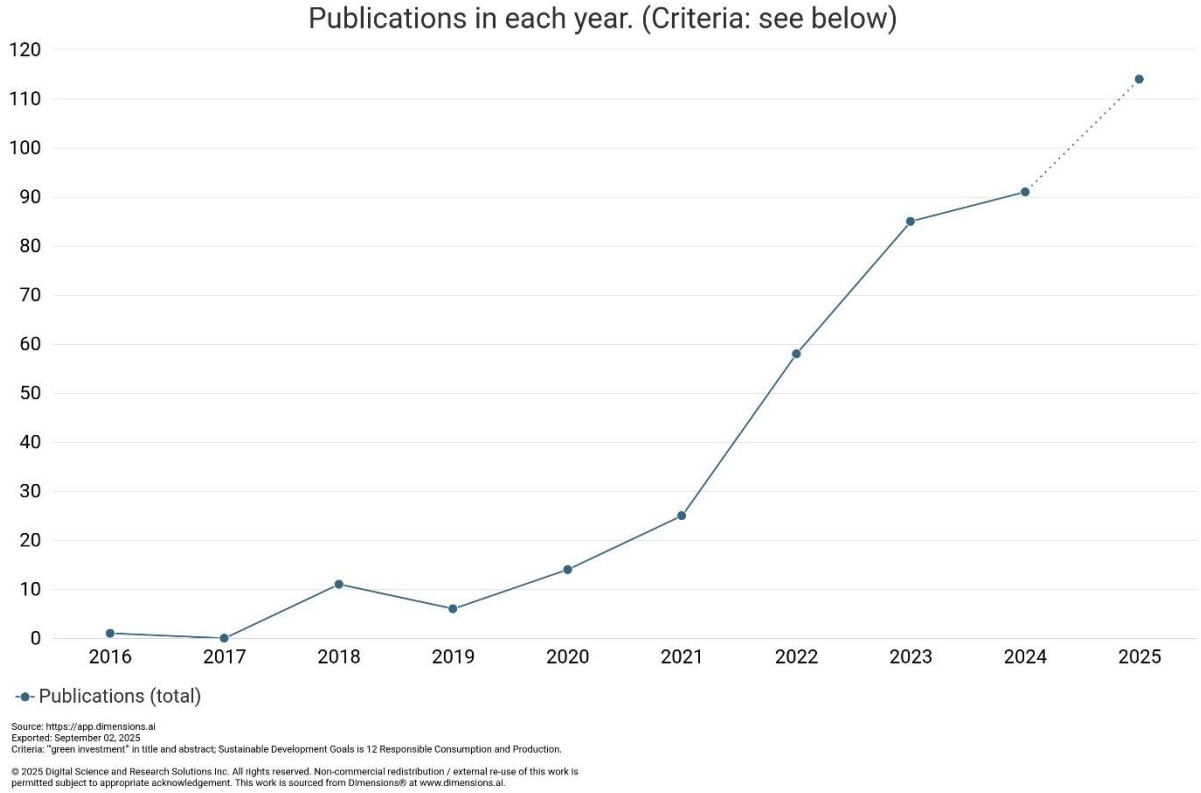

FIGURE 2 PUBLICATION IN EACH YEAR

The publication trend on green investment under SDG 12 shows a steady rise since 2018, reflecting increasing academic and policy attention to sustainable finance. Research output was minimal initially (1 paper in 2016; none in 2017) and grew gradually from 2018 (11 papers) to 2019 (6 papers). From 2020 onwards, publications increased consistently, with notable growth from 58 in 2022 to 91 in 2024 and a projected peak of 114 in 2025. The surge over the last five years underscores the rapid expansion of green investment research, driven by global climate commitments and sustainability-focused policies.

III. Overview of citation

Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Citations (total)	**7**	**7**	**12**	**43**	**100**	**272**	**644**	**1,132**	**1,737**	**1,584**

TABLE 2 CITATIONS IN EACH YEAR

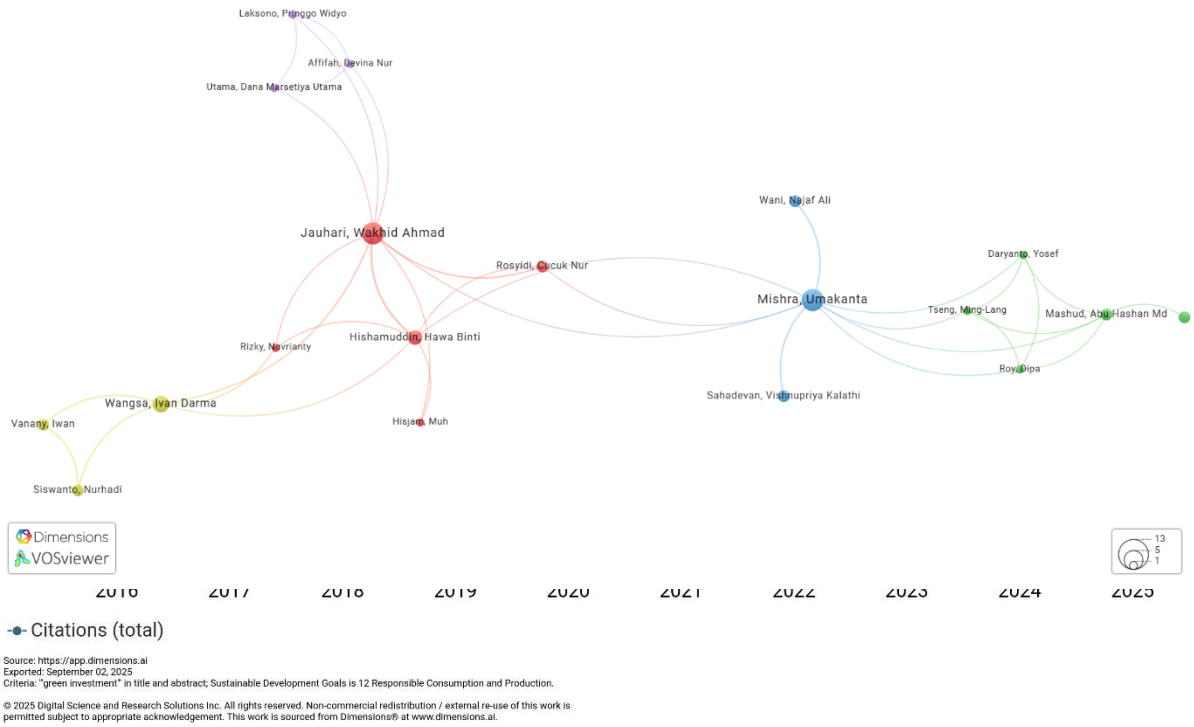

FIGURE 3 CITATIONS IN EACH YEAR

The table illustrates the temporal trend of citations in green investment research from 2016 to 2025. Citations show a gradual increase from 7 in 2016 and 2017 to 100 in 2020, followed by a marked surge from 272 in 2021 to 1,737 in 2024, reflecting growing scholarly attention and influence in the field. A slight decline to 1,584 citations in 2025 may be attributed to partial indexing or recency effects. Overall, the trend indicates a significant and sustained increase in academic engagement with green investment research, highlighting its expanding impact and relevance over time.

IV. Researcher Network: Co-authorship Analysis

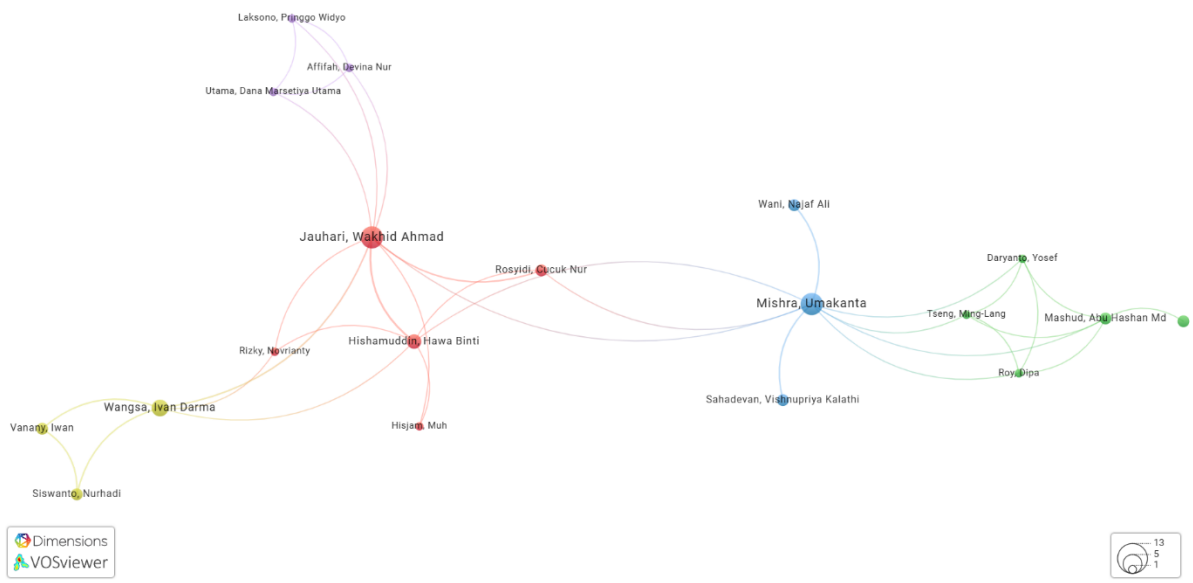

FIGURE 4 RESEARCHER NETWORK: CO-AUTHORSHIP

The co-authorship network reveals distinct clusters of collaborative groups, with scholars such as Mishra Umakanta, Jauhari Wakhid Ahmad, and Sen Nabendu emerging as central nodes, indicating their significant role in fostering research collaboration in the field of green investment. The density of connections within clusters reflects strong intra-group collaboration, while relatively weaker cross-cluster linkages suggest the potential for greater interdisciplinary engagement.

V. Researcher Network: citation Analysis

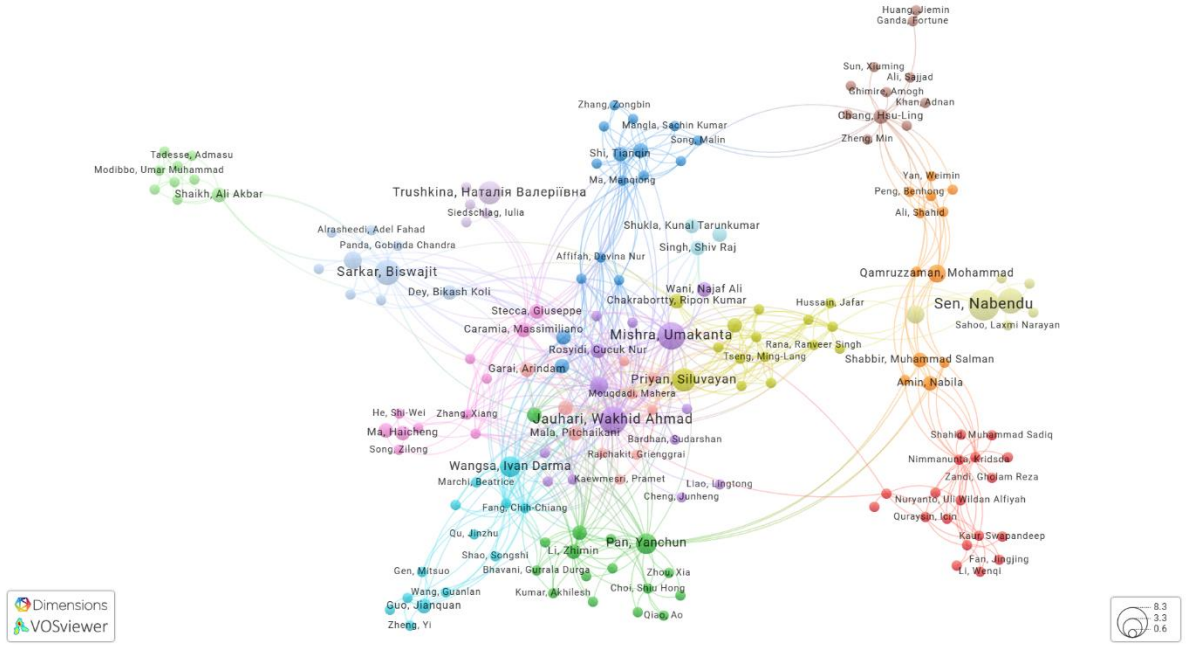

FIGURE 5 RESEARCHER NETWORK: CITATION

The citation network, on the other hand, highlights the intellectual influence of leading authors. Larger nodes, particularly those of Mishra Umakanta and Jauhari Wakhid Ahmad, demonstrate their high citation impact, positioning them as pivotal contributors shaping the research discourse. The interlinkages among clusters further suggest that the knowledge base in green investment is advancing through interconnected scholarly contributions, with influential authors serving as knowledge hubs that guide future research directions.

VI. Top 10 Researcher of the field

Sr. No.	Name	Publications	Citations	Citations
	Organization, Country			mean
1	Nabendu Sen	9	24	2.67
	Assam University, India			
2	Wakhid Ahmad Jauhari	7	190	27.14
	Sebelas Maret University, Indonesia			
3	Umakanta Mishra	7	105	15
	Vellore Institute of Technology University, India			
4	Biswajit Sarkar	6	241	40.17

	Yonsei University, South Korea			
5	Nabajyoti Bhattacharjee	6	20	3.33
	Assam University, India			
6	Siluvayan Priyan	5	94	18.8
7	Наталія Валеріївна Trushkina	5	10	2
	National Academy of Sciences of Ukraine, Ukraine			
8	Ivan Darma Wangsa	4	106	26.5
	Sepuluh Nopember Institute of Technology, Indonesia			
9	Yanchun Pan	4	273	68.25
	Shenzhen University, China			
10	Mohammad Qamruzzaman	3	72	24
	United International University, Bangladesh			

TABLE 3 TOP 10 RESEARCHER

The table highlights the top 10 researchers in green investment research based on publications and citations. Nabendu Sen (Assam University, India) leads in productivity with 9 publications, whereas Yanchun Pan (Shenzhen University, China) demonstrates the highest scholarly impact, with 273 citations and a mean of 68.25 citations per publication. Researchers such as Biswajit Sarkar and Wakhid Ahmad Jauhari exhibit a strong balance between productivity and influence, reflecting their significant contribution to the field. Overall, the data underscores the distinction between publication quantity and citation impact, revealing key contributors shaping the intellectual landscape of green investment research across multiple countries.

5. Conclusion

This study highlights the growing significance of green investment as a mechanism for advancing sustainable development, particularly within the framework of SDG 12: Responsible Consumption and Production. The bibliometric analysis demonstrates that research on green investment has expanded rapidly in recent years, with notable increases in both publications and citations, underscoring its rising academic and policy relevance. The findings reveal that scholarship in this domain is highly multidisciplinary, drawing from economics, management, environmental sciences, and engineering, while also pointing to underexplored areas such as health, ethics, and cultural studies. Co-authorship and citation

networks identify key contributors and intellectual hubs, reflecting both established collaborations and opportunities for greater cross-disciplinary engagement.

By mapping publication trends, influential researchers, and thematic clusters, this study provides valuable insights into the intellectual structure and evolution of green investment research. It underscores the dual importance of financial mechanisms and behavioral dimensions in promoting sustainable practices and driving progress toward SDG 12. Future research should seek to deepen interdisciplinary linkages, explore underrepresented sectors, and assess practical policy impacts to strengthen the role of green investment in shaping sustainable economic and social systems.

References

1. Atak, H., Albay, A., & Jencius, M. (2025). Personality Disorders: A Bibliometric Analysis. *Humanistic Perspective*, *7*(2), 183–206. https://doi.org/10.47793/hp.1676411

2. Bertomeu, J. (2016). DETERMINANTS OF BEHAVIOURAL INTENTION TOWARDS GREEN INVESTMENTS: THE PERSPECTIVES OF MUSLIMS. *Abacus*, *52*(1), 211–219. https://doi.org/10.1111/abac.12074

3. Bulut, M., & Çağlar, S. (2025). Contribution of psychology to sustainable development goals: A bibliometric analysis: Sustainable development goals in psychology. *Current Psychology*, *44*(11), 9911–9924. https://doi.org/10.1007/s12144-025-07836-6

4. Chen, R., & Majeed, M. T. (2024). How does green investment respond to ICT and financial development? *Borsa Istanbul Review*, *24*(6), 1067–1076. https://doi.org/10.1016/j.bir.2024.06.003

5. Gallo, E., Jona-Lasinio, C., & Samoncini, B. (2025). Green Investment and Productivity Dynamics. *Review of Income and Wealth*, *71*(3), e70024. https://doi.org/10.1111/roiw.70024

6. İri, R., & Ünal, E. (2024). Bibliometric Analysis Bibliometric Analysis of Research (1980-2023). *Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *10*(2), 386–403. https://doi.org/10.31592/aeusbed.1446738

7. Judijanto, L., Praja, S. J., & Arini, R. E. (2024). A Bibliometric Analysis of Green Investment Trends and Developments. *West Science Social and Humanities Studies*, *2*(11), 1899–1911. https://doi.org/10.58812/wsshs.v2i11.1459

8. Judijanto, L., Yoga, T., & Wijayanti, I. O. (2024). Bibliometric Analysis of Green Finance and Sustainable Investment Strategies. *West Science Social and Humanities Studies*, *2*(12), 1965–1980. https://doi.org/10.58812/wsshs.v2i12.1487

9. K. M. Mohammed Radeef & G. Velmurugan. (2025). Mapping the Landscape of Green Investment Research. *International Journal of Computational and Experimental Science and Engineering*, *11*(1). https://doi.org/10.22399/ijcesen.863

10. Kumar, D., & Balyan, S. (2025). *11. Sustainable Development Goals in Agriculture*.

11. Maji, S. G., & Haloi, A. (2025). Corporate Sustainable Practices, Institutional Factors, and Sustainable Development Goals: Evidence From Asian Emerging Markets. *Sustainable Development*, sd.70006. https://doi.org/10.1002/sd.70006

12. Necula, C. (2025). A Comparative Bibliometric Analysis of Emotional Intelligence in Leadership Performance. *Proceedings of the International Conference on Business Excellence*, *19*(1), 783–813. https://doi.org/10.2478/picbe-2025-0063

13. Tran, T. T. T., Do, H. N., Vu, T. H., & Do, N. N. M. (2020). The factors affecting green investment for sustainable development. *Decision Science Letters*, 365–386. https://doi.org/10.5267/j.dsl.2020.4.002

14. (www.dimensions.ai, 2025)