

A Bibliometric Visualisation Of Sustainable Finance With Green Initiatives Using Dimensions.

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Abstract:

The field of sustainable finance has gained significant attention in recent years, with a growing focus on green initiatives. This study aims to provide a comprehensive bibliometric visualization of sustainable finance research, specifically focusing on the integration of green initiatives. Utilizing the Dimensions database, we analyzed articles to identify key trends, research gaps, and emerging themes. Our findings reveal a substantial increase in publications related to sustainable finance and green initiatives over the past decade, highlighting the growing importance of this field in addressing environmental challenges. Leading Authors along with their institute affiliation or country were also studied and visualized. The analysis also indicates a higher prevalence of interdisciplinary research compared to previous studies. Through keyword analysis, co-authorship networks, and geographical distribution mapping, we identified leading countries, institutions, and researchers in sustainable finance. Furthermore, we explored the intersection of sustainable finance with related fields of Sustainable Development Goals. Bibliometric tools like VOS Viewer and Biblioshiny were used for analyzing the articles. This research significantly contributes to the literature by offering a novel approach that integrates bibliometric visualization with green initiatives, providing a unique perspective on the field of sustainable finance.

Keywords:

Bibliometric Analysis, Sustainable Finance, Green Initiative, VOS Viewer, Biblioshiny.

Introduction

Sustainable finance refers to the integration of environmental, social, and governance (ESG) considerations into financial decision-making processes, aiming to align financial objectives with sustainable development goals. This concept has evolved significantly, driven by the need to address global environmental challenges and socio-economic disparities.

Sustainable finance encompasses a broad range of financial activities that prioritize sustainability, including investments in projects that promote environmental protection and social equity(Simeonovski et al., 2025). It aims to create long-term value while mitigating risks associated with unsustainable practices, thus fostering a resilient economic system(David et al., 2025). Incorporating ESG factors into investment strategies helps identify risks and opportunities, ensuring that financial resources are directed towards sustainable initiatives(Timofei, 2024).

The growing emphasis on responsible investments reflects a shift in market dynamics, with increasing demand for sustainable financial products(Gupta & Perwej, 2024). Sustainable

finance has emerged as a critical field in recent years, driven by the urgent need to address global environmental challenges and promote sustainable development.

This study presents a comprehensive bibliometric visualization of sustainable finance research, with a particular focus on green initiatives. By leveraging the Dimensions database and employing advanced bibliometric tools such as VOS Viewer and Biblioshiny, we analyze a corpus of articles to uncover key trends, research gaps, and emerging themes in this rapidly evolving field.

Our analysis reveals a significant surge in publications related to sustainable finance and green initiatives over the past decade, underscoring the growing importance of this area in academic research and practice. We explore the interdisciplinary nature of sustainable finance research, examining its intersections with related fields and the Sustainable Development Goals.

Research Objectives

The study seeks to review existing literature and articles on Sustainable Finance with Green Initiatives, providing a bibliometric analysis to explore research trends in this field. It aims to identify key sources and leading authors while examining the evolving themes studied over time.

Materials And Methods

a. DATA SOURCE

The database used for this study is sourced from dimensions (<http://www.dimensions.ai>), which provides huge amount of bibliometric data and also facilitates in further processing and analysis of the data using several bibliometric tools / packages.

b. Search Strategy

All the articles were collected from dimensions.ai on 17th February 2025.

The purpose of the study was to determine the trends and publication scenario of articles published on ‘Sustainable Finance’ or ‘Green Initiatives’. The subject domain identified for the scope of this study was management & commerce.

c. Data Collection

In order to filter out the relevant articles keywords query search was applied. The parameters for the query were as under (in order of search query entered):

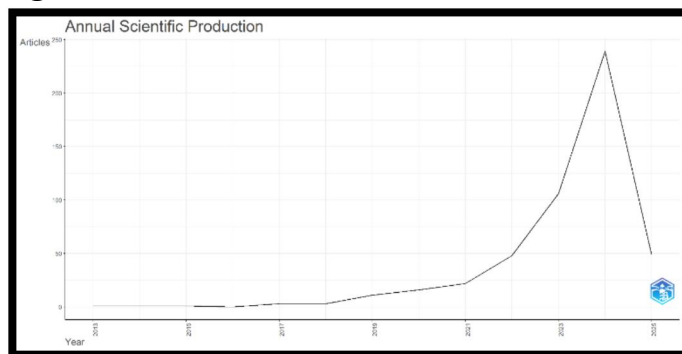
- Keyword search “Sustainable Finance” or “Green Initiatives” with search in full document. The query resulted in 2,468 documents.
- The articles were filtered according to the field of research of 35 – commerce/management. This resulted in 899 documents.
- From the above documents only ‘articles’ were selected, which reduced the results to 500. Which were used for further analysis and visualization processes.
- The database obtained in ‘csv’ format which was then analysed in Biblioshiny Package in R and VOS Viewer.

Results & Discussion

Trend In Global Publications**Table 1: - MAIN INFORMATION ABOUT DATA**

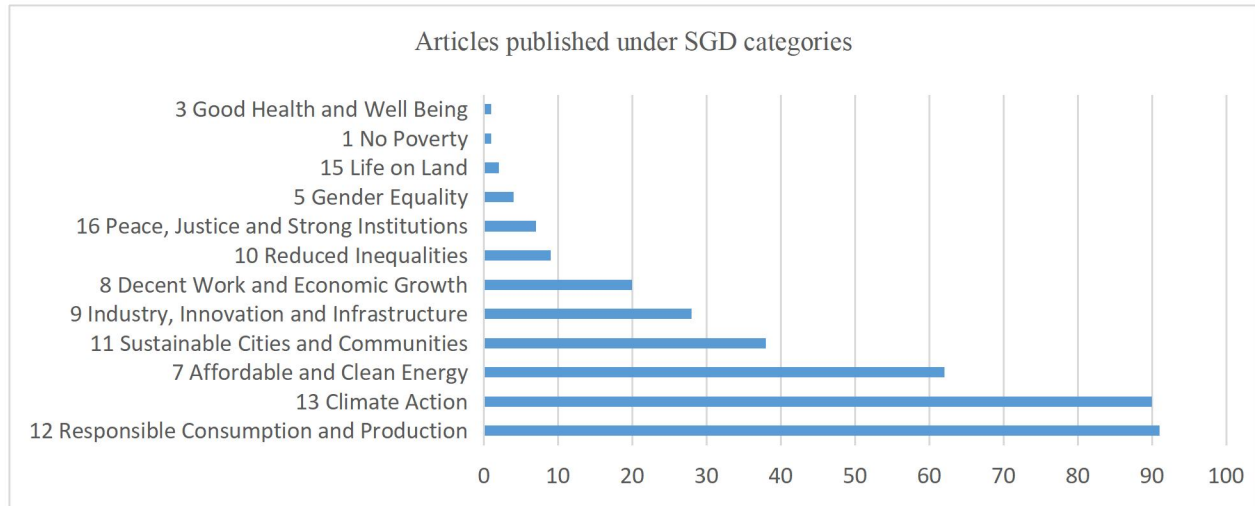
Description	Results
Timespan	2013:2025
Sources (Journals, Books, etc)	251
Documents	500
Annual Growth Rate %	38.31
Document Average Age	1.81
Average citations per doc	14.48
DOCUMENT CONTENTS	
Keywords Plus (ID)	62
Author's Keywords (DE)	62
AUTHORS	
Authors	1344
Authors of single-authored docs	63
AUTHORS COLLABORATION	
Single-authored docs	64
Co-Authors per Doc	3.06
International co-authorships %	27.8
DOCUMENT TYPES	
article	500

(source: author generated in biblioshiny package in R)

Figure: 1 – Annual scientific Production

A total of 500 articles were processed published during 2013 to 2025 (February) across 251 different sources. The publication trend recorded an annual growth rate of 38.31% (table: 1) with an average document age of 1.81. Average citations per document was 14.48 and 62 unique keywords were found. There are 63 single authored documents and an average co-authors per document was at 3.06. (Table: 1).

Figure: 2 – Articles published under SGD categories



Classifying the articles on the basis of the Sustainable Development Goals each article addresses, responsible consumption and production and climate action were two prominent SDG's which have been covered in these articles. Other major contributions were in area of sustainable cities and communities, industry, innovation and infrastructure along with economic growth and reduced inequalities (figure: 2).

Figure: 3 Average citations per year

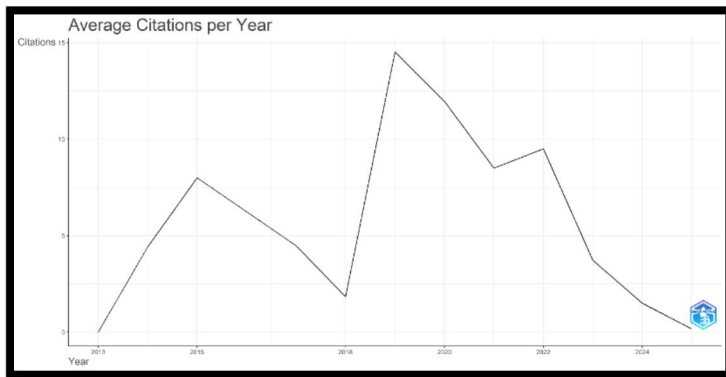
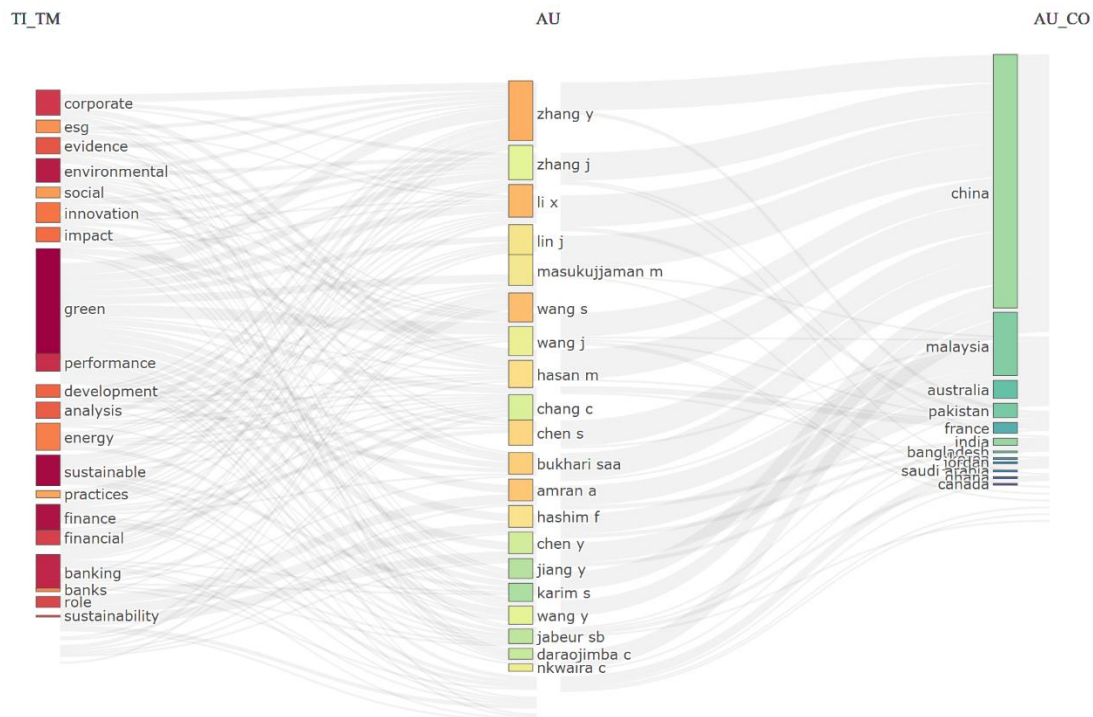


Figure 3 "Average Citations per Year" shows the trend of average citations for articles over the period from 2013 to 2025. There was a steady rise in average citations, reaching around 7 citations by 2015. This suggests increasing academic interest and relevance during these years. However a decline followed after 2015, with citations dropping to around 2 by 2018. This could

indicate a shift in research focus or reduced publication impact. There was a sharp surge, peaking around 2020 with nearly 15 citations on average. This spike might reflect a global push toward sustainability and green finance during this time.

Three field plot in biblioshiny package in R, created a visualization showing inter-connections among three parameters. Figure 2a & 2b, visualizes interrelation between several parameters, which are connected by lines, varying according to the strength of the relationship between them.

Figure: 4 - Three field plot (Title – Author - Country)



The Three-Field Plot (figure: 4) highlights the key themes, leading authors, and contributing countries in Sustainable Finance with Green Initiatives research. Dominant topics include green finance, sustainability, banking, and ESG practices, with a strong focus on the intersection of finance and environmental concerns. China leads in research output, followed by Malaysia, Australia, and Pakistan, reflecting a global interest in sustainable finance. Authors like Zhang Y, Li X, and Masukujjaman M are prominent contributors, often exploring themes like corporate sustainability and green innovation. The field shows an interdisciplinary approach, merging finance, energy, and social governance, with rising contributions from emerging economies. This trend emphasizes the growing global commitment to sustainable development and green financial practices.

SOURCES:

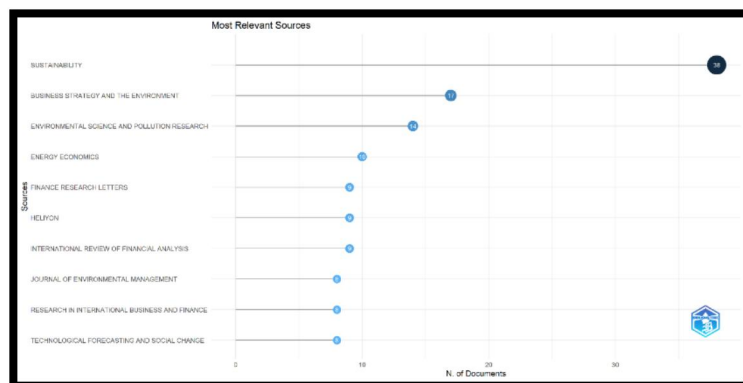


Figure: 5 – most relevant sources

Figure 5 highlights the most relevant sources in the field of Sustainable Finance with Green Initiatives, based on the number of published documents. The journal "Sustainability" leads significantly with 38 publications, indicating its central role in advancing research on sustainability-related topics. It

is followed by "Business Strategy and the Environment" (17 documents) and "Environmental Science and Pollution Research" (14 documents), both emphasizing the environmental dimension of sustainable finance. Other notable sources like "Energy Economics", "Finance Research Letters", and "Heliyon" each contribute between 9 and 10 studies, reflecting the interdisciplinary nature of the field, spanning finance, economics, and environmental science.

Figure: 6 – sources produced over time

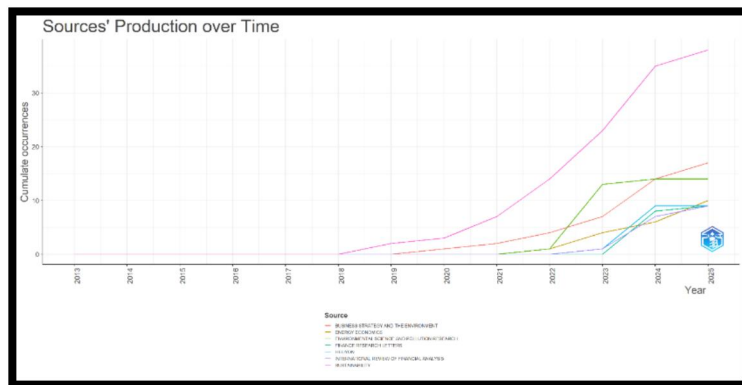


Figure 6 illustrates the cumulative growth of publications from key sources on Sustainable Finance with Green Initiatives over time. The journal "Sustainability" shows a dominant and consistent rise since 2018, peaking sharply after 2021 and leading with over 35 publications by 2025. "Business Strategy and the Environment" and "Environmental Science and Pollution Research" follow, with

notable growth from 2022 onwards, reflecting increased research interest in environmental strategies and pollution studies. Other journals like "Finance Research Letters", "Heliyon", and the "International Review of Financial Analysis" show steady, though less pronounced, growth starting around 2022. This trend highlights the expanding interdisciplinary focus on sustainability within both environmental and financial research domains.

AUTHORS:

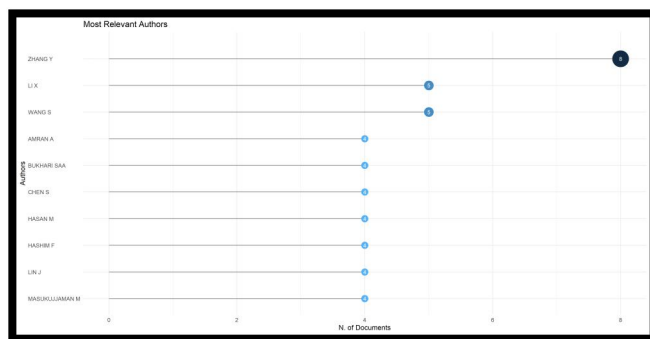


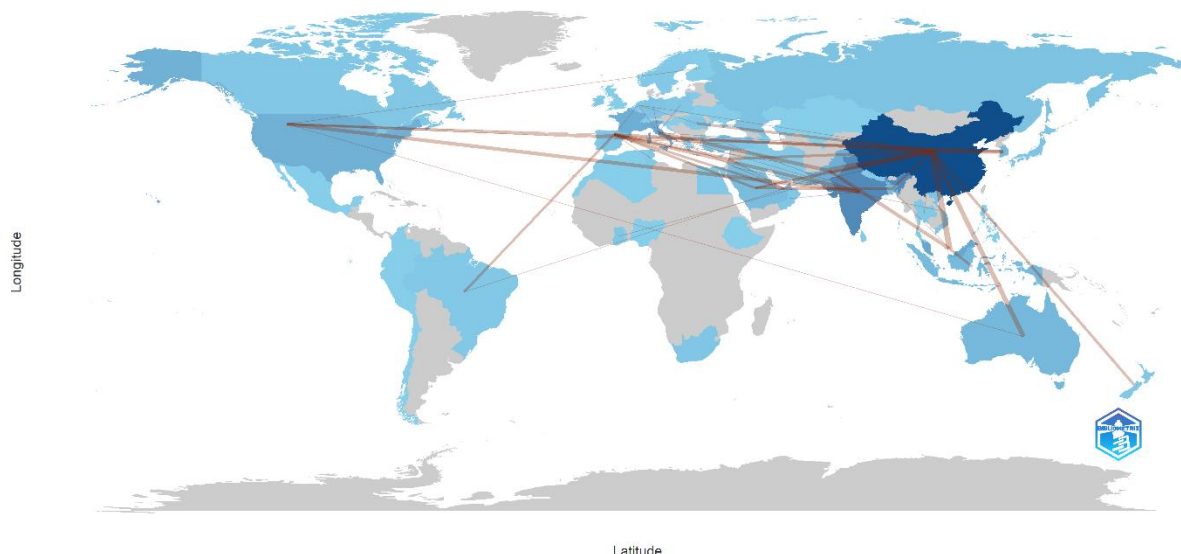
Figure: 7 – most relevant authors

Figure 7 highlights the most prolific authors in the field of Sustainable Finance with Green Initiatives. Zhang Y leads with 8 publications, showcasing a significant contribution to the research domain. Following closely are Li X and Wang S, each with 5 documents, while authors like Amran A, Bukhari SAA, Chen S, and others have each contributed 4 publications, indicating a strong

collaborative effort among key researchers in this area.

Figure: 8 – Country collaboration map

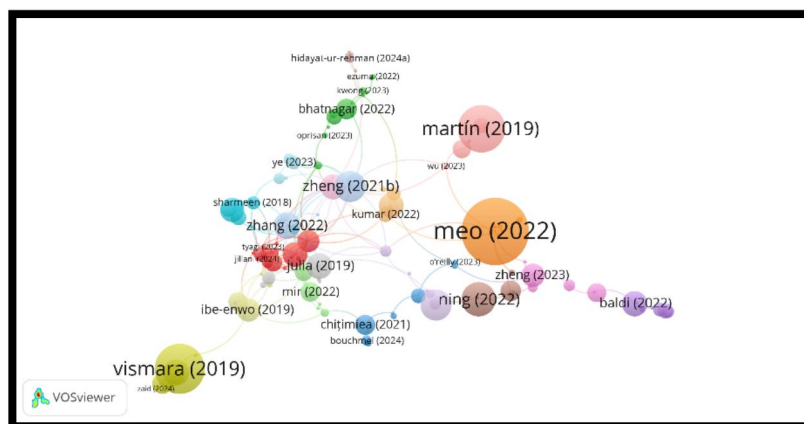
Country Collaboration Map



The Country Collaboration Map highlights global research partnerships in Sustainable Finance with Green Initiatives, with China emerging as the central hub of collaboration, indicated by its darker shade and numerous connecting lines. Strong research ties are evident between China and countries like the United States, India, Australia, and several European nations. The map also shows significant contributions from regions in Southeast Asia, Europe, and parts of South America. These international collaborations reflect the global importance of sustainable finance and the growing emphasis on cross-border research efforts to tackle environmental challenges.

Co-Citation Analysis

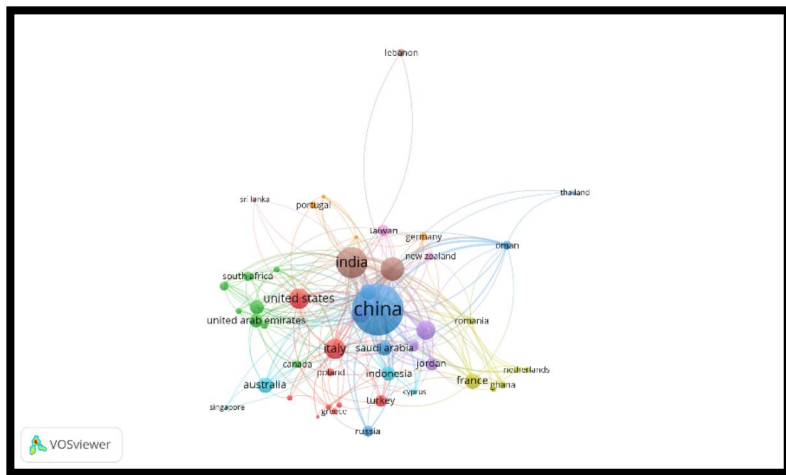
Figure: 9 citation analysis unit of analysis - document



The visualization represents a co-authorship network in the field of Sustainable Finance with Green Initiatives, mapping key researchers and their collaborative relationships. Larger nodes, such as Meo (2022), Martín (2019), and Vismara (2019), indicate higher influence or citation frequency, reflecting their central roles in the research landscape. Clusters of

different colors suggest thematic groupings or research communities, where authors like Zhang (2022) and Zheng (2021b) serve as key connectors within their networks. The interlinking lines demonstrate collaborative ties, while the spread of recent studies (e.g., Jillani (2024), Bouchmel (2024)) indicates ongoing and expanding research interest in this domain.

Figure 10 citation analysis unit of analysis - country



This country collaboration network highlights global research partnerships in Sustainable Finance with Green Initiatives. China emerges as the central hub, with the largest node, indicating its dominant role in international collaborations. Countries like India, Italy, United States, and Saudi Arabia also play significant roles, fostering strong research ties. The colored clusters represent

regional or thematic alliances, with noticeable interconnections between Asian, European, and North American countries. The dense network around China, India, and the U.S. underscores their active participation in cross-border research, while countries like Lebanon and Sri Lanka appear more isolated, showing limited collaboration.

Conclusion:

This bibliometric analysis of sustainable finance with green initiatives reveals significant growth in research output over the past decade, highlighting the field's increasing importance. The study identifies key trends, including a surge in publications, particularly after 2020, with journals like "Sustainability" leading in contributions.

China emerges as a central hub for research collaboration, with strong international partnerships. The analysis shows an interdisciplinary approach, merging finance, environmental science, and social governance. Key authors and institutions were identified, providing insights into research leadership. The focus on Sustainable Development Goals, especially responsible consumption and climate action, underscores the field's alignment with global sustainability efforts. This comprehensive overview offers valuable guidance for academics, practitioners, and policymakers, fostering future collaborations and advancements in sustainable finance.

By mapping the current research landscape, this study serves as a crucial resource for addressing pressing environmental challenges and promoting sustainable development through financial mechanisms. This bibliometric analysis of sustainable finance with green initiatives reveals significant growth in research output over the past decade, highlighting the field's increasing importance in addressing global environmental challenges.

Key authors were identified, providing valuable insights into research leadership and centers of excellence in the field. Citation analysis was carried out and linkages between authors and country of origin were visualized. This information can guide aspiring researchers and institutions in forming strategic collaborations and identifying potential mentors or partners for future projects.

The focus on Sustainable Development Goals (SDGs), especially responsible consumption and climate action, underscores the field's alignment with global sustainability efforts.

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