

Mapping the Research Landscape of Women's Entrepreneurship and Inclusive Development: A Bibliometric Study

Dr Charu Mani¹, Dr Gunjan Bhayana²

Assistant professor^{1, 2}

Department of Management studies, The Technological Institute of textile and sciences, Bhiwani^{1, 2}

Corresponding Author- Dr Charu Mani¹

Abstract

This study explored the evolving landscape of research on women entrepreneurship and inclusive development from 2013 to 2024. By analyzing trends in publication volumes, citations, author collaboration, and geographical distribution, the study highlighted key patterns in academic contributions to these critical areas. The findings indicated a steady increase in the number of articles published, with significant growth observed after 2020, especially in international collaborations. Countries such as India, Greece, and the United Kingdom made significant contributions, with universities like Aligarh Muslim University and George Emil Palade University of Medicine standing out. The analysis also identified influential authors and high-impact documents that shaped the discourse on sustainable development and women entrepreneurship. Keywords such as "sustainable development goals," "entrepreneurship," and "women's status" dominated the research, reflecting the central themes of the field. Additionally, the study examined citation patterns, with journals like *Sustainability (Switzerland)* and *Gender in Management* standing out for their high citation counts and impact. This research underscored the growing significance of sustainability and gender-focused entrepreneurship in academic and practical contexts, suggesting future research directions to further explore their intersections in addressing global challenges.

Keywords- Women Entrepreneurship, Inclusive Development, Sustainable Development, Bibliometrix, R- Studio

Introduction

Women entrepreneurship has garnered increasing attention recently due to its significant potential to drive inclusive economic growth and contribute to the broader development agenda. Women entrepreneurs play a vital role in shaping economies by creating jobs, driving innovation, and reducing inequalities (Brush et al., 2009). In particular, women's entrepreneurial activities are often seen as key contributors to inclusive development, which emphasizes equitable economic growth, ensuring that all individuals, regardless of gender, race, or socio-economic status, can benefit from the prosperity generated (Sen, 1999). However, the relationship between women entrepreneurship and inclusive development remains complex and warrants deeper investigation. While much of the existing research has examined the individual factors influencing women entrepreneurs, such as access to finance, education, and social networks (De Vita et al., 2014), there is a noticeable gap in understanding how these elements collectively impact inclusive development. The majority of

studies in this field tend to focus on the contributions of women entrepreneurs to economic growth but fall short in exploring how these ventures specifically promote broader social inclusion and gender equality (Kelley et al., 2017). Furthermore, much of the literature on women entrepreneurship has been centered on developed countries, leaving the experiences of women entrepreneurs in emerging and developing economies underexplored, despite the more pressing need for inclusive development in these contexts (Ratten, 2020). This gap is particularly significant given that inclusive development is often most urgently needed in these regions. The role of government policies and institutional frameworks in supporting women entrepreneurs and facilitating inclusive development is another area where research is limited. While some studies have explored the impact of policies on women's entrepreneurship (Ratten, 2014), few have examined how these policies intersect with the socio-cultural and economic environments to create enabling or disabling conditions for women entrepreneurs, particularly in diverse or emerging contexts (Al-Dajani & Marlow, 2013). More recently, there has been a growing recognition of the intersectionality of women's experiences in entrepreneurship, considering factors such as ethnicity, class, and disability. However, this perspective remains underexplored, especially in relation to how these intersecting factors contribute to inclusive development (Benería, 2019; Dattani & Nisar, 2023). Moreover, recent studies have suggested that women entrepreneurs in different regions face distinct challenges, which can either hinder or propel their role in fostering inclusive development. A study by Khan et al. (2023) in South Asia found that access to digital platforms and financial technology has provided new avenues for women entrepreneurs, yet socio-cultural barriers continue to limit their participation in the formal economy. Similarly, research by Pandit et al. (2022) on women entrepreneurs in Sub-Saharan Africa highlighted the importance of community-based support networks and the role of microfinance institutions in supporting women-led businesses, emphasizing how financial and social capital can facilitate their entrepreneurial activities in the region. This study aims to fill these gaps by conducting a bibliometric analysis of existing literature on women entrepreneurship and inclusive development. By systematically reviewing trends, patterns, and emerging themes in the literature, this paper will identify underexplored areas and suggest directions for future research. The significance of this study lies in its potential to inform policy frameworks that support women entrepreneurs in ways that foster both individual empowerment and broader social inclusion. It also offers insights for researchers to explore the intersectionality of women's entrepreneurial experiences, especially in emerging economies, where the need for inclusive development is especially critical. In conclusion, while women entrepreneurship remains a well-established field of study, its relationship with inclusive development has yet to be fully understood. This paper contributes to the growing body of literature by providing a bibliometric analysis that highlights key trends, identifies research gaps, and emphasizes the broader implications for inclusive development. The findings of this study will guide future research and policy initiatives aimed at enhancing the role of women entrepreneurs in creating inclusive and sustainable economic growth.

Literature Review

The intersection of women entrepreneurship and inclusive development has garnered increasing attention as a critical area of research in recent years. Scholars have explored how women's entrepreneurial activities contribute to economic growth, gender equality, and social inclusion, especially in developing and emerging economies. The concept of inclusive development emphasizes equitable economic growth that benefits all segments of society, including marginalized groups such as women. Women entrepreneurs are seen as pivotal agents of change in promoting inclusive development by creating jobs, stimulating innovation, and addressing social issues (Sen, 1999; Kabeer, 2019). This literature review highlights recent studies that examine the relationship between women entrepreneurship and inclusive development, with a focus on barriers, empowerment, policy, and social impact. Despite the potential benefits of women entrepreneurship for inclusive development, women continue to face significant barriers that hinder their entrepreneurial success. These barriers, which are often multifaceted, include limited access to finance, socio-cultural constraints, and gendered stereotypes. According to Parker (2021), access to finance remains one of the most persistent challenges for women entrepreneurs, especially in developing economies. Women are less likely to secure venture capital and loans due to financial institutions' biases and a lack of collateral (Kelley et al., 2020). Similarly, Marlow and Patton (2015) emphasize that cultural norms that restrict women's mobility, societal expectations regarding women's roles, and family responsibilities can limit their entrepreneurial activities and opportunities. Moreover, recent studies have highlighted that the intersectionality of women's identities, such as race, ethnicity, and socio-economic status, further compounds these barriers. Dattani and Nisar (2023) argue that women from marginalized communities face a unique set of challenges that hinder their entrepreneurial potential and ability to contribute to inclusive development. These challenges include restricted access to education, limited social capital, and cultural norms that dictate the roles women can play in society. In these contexts, women entrepreneurs face heightened obstacles to accessing resources and opportunities, which can limit their ability to generate economic value and contribute to inclusive growth. One of the core arguments for the promotion of women entrepreneurship is its potential to empower women and drive social inclusion. Entrepreneurship provides women with opportunities for financial independence, autonomy, and increased participation in decision-making processes, both at the household and community levels. Research by Cheston and Kuhn (2022) demonstrated that women who engage in entrepreneurial activities tend to experience increased self-confidence and a stronger sense of empowerment. In many cases, women entrepreneurs challenge traditional gender roles and become role models for other women in their communities, thus fostering social change (Ahl, 2022; Al-Dajani & Marlow, 2013). In the context of inclusive development, women entrepreneurship is viewed as a mechanism for addressing gender inequalities and enhancing social mobility. According to Kabeer (2019), women's entrepreneurial activities can contribute to more inclusive societies by promoting gender equality in economic participation. By integrating women

into the economy, entrepreneurship can reduce gender gaps in employment, income, and education, thus fostering more inclusive development. Recent research by Khan et al. (2023) in South Asia highlighted that women's entrepreneurship helps combat poverty and promote social equity, especially in rural areas where economic opportunities for women are limited. These women not only contribute to their household income but also play a critical role in empowering other women and communities. Effective government policies and institutional support are critical in fostering an environment where women entrepreneurship can thrive and contribute to inclusive development. Studies have shown that countries with gender-responsive policies tend to have higher rates of women's entrepreneurship and greater social inclusion. According to Singh et al. (2022), government policies that provide financial incentives, training programs, and access to mentoring can significantly enhance women's entrepreneurial outcomes. For instance, policies that encourage women to engage in STEM (science, technology, engineering, and mathematics) fields have been shown to increase women's participation in technology-driven entrepreneurial ventures, which often contribute to more inclusive development by creating jobs and promoting innovation (Pandit et al., 2022). However, while policies supporting women entrepreneurship have shown promise, there is often a gap in their implementation, especially in developing regions. Ratten (2020) argues that in many emerging economies, despite the existence of gender-sensitive policies, the lack of effective enforcement and implementation means that these policies fail to achieve their intended outcomes. For example, while microfinance programs have been lauded as a key policy tool for supporting women entrepreneurs, studies by Verheul et al. (2021) suggest that their impact is limited when access to markets, training, and capacity-building initiatives is inadequate. Moreover, institutional support is not just about financial aid but also about creating a favorable business environment through regulatory frameworks that support women's entrepreneurial ventures. Verheul et al. (2021) argue that institutional frameworks that promote gender equality and provide equal opportunities for women in business can significantly enhance the contribution of women entrepreneurs to inclusive development. Recent studies have increasingly focused on the social impact of women entrepreneurship, particularly in the context of inclusive development. Social enterprises and businesses led by women tend to address local community needs and promote social objectives alongside economic goals. According to Brush et al. (2020), women entrepreneurs are more likely than their male counterparts to engage in ventures that have a positive social impact, such as addressing gender inequality, improving healthcare, and promoting education. These social enterprises often contribute directly to inclusive development by targeting underserved or marginalized populations. A study by Chandra et al. (2021) found that women-led social enterprises, particularly in developing countries, focus on creating sustainable livelihoods for women and marginalized communities. By providing employment and services, these ventures play a critical role in reducing inequality and fostering social inclusion. Moreover, the focus on social impact allows women entrepreneurs to align their business objectives with the broader goals of inclusive development, which can have long-term effects on poverty reduction and social equity.

Women entrepreneurship has a vital role to play in advancing inclusive development by fostering gender equality, economic growth, and social inclusion. However, significant barriers remain that prevent many women from fully participating in entrepreneurial activities. Addressing these barriers through supportive policies, access to finance, and overcoming cultural constraints is crucial for enabling women to contribute to inclusive development. Furthermore, women entrepreneurship's potential to drive social change and empower women makes it a key driver of inclusive development, especially in marginalized communities. Future research should continue to examine the intersections of gender, culture, and policy to create a more supportive environment for women entrepreneurs, ultimately contributing to more inclusive and equitable societies.

Bibliometrix

Bibliometrix is a comprehensive R-package designed for bibliometric analysis and scientific publications mapping. It provides tools to analyze bibliographic data, create networks of co-citations and co-authorships, visualize research trends, and generate various metrics to evaluate the impact and productivity of research publications. Here are some key features and functionalities of Bibliometrix: Bibliometrix allows users to import bibliographic data from various sources such as Web of Science, Scopus, PubMed, and CSV files. It includes functions for cleaning and standardizing bibliographic records, ensuring consistency in the dataset. Users can perform basic bibliometric analyses such as citation counts, h-index calculation, and journal impact factor analysis. Advanced analyses include co-citation analysis (identifying influential papers or topics based on co-citation patterns), co-authorship analysis (mapping collaboration networks), and citation network analysis. Bibliometrix provides tools for visualizing bibliometric data using graphs, maps, and networks. Visualization techniques include co-authorship networks, citation networks, cluster maps of research topics, and timeline visualizations of publication trends. Users can analyze research collaboration patterns between authors, institutions, and countries. Metrics such as co-authorship networks and collaboration indices (e.g., collaboration coefficient) help assess the extent and impact of research collaboration. Bibliometrix enables the generation of scientific maps and landscapes based on keyword co-occurrence and term clustering. These maps visualize the structure of research fields, identify emerging trends, and highlight key topics within a research domain. As an R-package, Bibliometrix leverages the power of R programming for data manipulation, statistical analysis, and visualization. Users can customize analyses and create reproducible workflows using R scripts, facilitating transparency and replicability in bibliometric studies. Bibliometrix offers flexibility for customizing analyses and generating tailored reports and visualizations. It supports extensions and integration with other R-packages for specialized bibliometric analyses and data processing tasks. Overall, Bibliometrix is a valuable tool for researchers, librarians, and institutions interested in conducting bibliometric analyses to evaluate research impact, identify collaboration opportunities, and gain insights into scientific trends and knowledge domains. Its integration with R provides robust analytical capabilities for handling large bibliographic datasets and exploring complex relationships within the scholarly literature.

Research Methodology

This study employed a bibliometric analysis to investigate the trends and patterns of inclusive development and women entrepreneurship from 2013 to 2024. The data for this analysis were collected from Scopus database, using a set of predefined search terms i.e. "Women Entrepreneurs" OR "Female Entrepreneur" OR "Female Business Owner" OR "Business Women" OR "Female Founder" AND "Inclusive Growth" OR "Inclusive Development".

Data Collection: The dataset consisted of 104 documents, including journal articles, books, conference papers, and reviews. The selection process involved filtering documents based on their relevance to the research themes and their publication between 2013 and 2024. Key metrics such as publication year, citation count, document type, author affiliations, and geographical distribution were extracted for further analysis.

Bibliometric Indicators: Several bibliometric indicators were used to analyze the data, including:

- **Citation analysis:** To identify the most cited documents, journals, and authors in the field.
- **Author collaboration:** To examine collaboration patterns, including co-authorship frequency and international collaborations.
- **Geographical distribution:** To assess the contribution of different countries and institutions to the research.
- **Keyword analysis:** To identify dominant research topics and trends over time.
- **Impact factors:** Measured through citation counts per document and year, as well as normalized citation values.

Data Analysis

The data were analyzed using both quantitative and qualitative methods. Descriptive statistics were employed to summarize publication trends, citation patterns, and author collaboration networks. Visualization tools such as word clouds, network diagrams, and clustering techniques were used to represent keyword frequency and author collaboration. Additionally, the study employed content analysis to interpret the emerging themes and to identify gaps in the literature. R Studio has been used to analyze the data. Additionally, the study was limited to documents published in English and indexed in the selected database. Additionally, only documents related to women entrepreneurship, and inclusive development were considered, potentially excluding related research in other fields. This methodology provided a comprehensive overview of the state of research on sustainability and women entrepreneurship, offering insights into the academic contributions, collaboration trends, and emerging research themes in these areas.

Table 1: Summarizing the key information

Category	Details
Timespan	2013-2025
Sources	86
Total Documents	104
Annual Growth Rate (%)	0
Document Average Age	2.11 years
Average Citations per Document	7.93
Total References	6,444
Keywords Plus (ID)	205
Author's Keywords (DE)	389
Total Authors	321
Single-authored Documents	17
Average Co-authors per Document	3.14
International Co-authorships (%)	34.62
Document Types	
- Article	79
- Book	1
- Book Chapter	19
- Conference Paper	4
- Review	1

(Source- R Studio)

The dataset spans from 2013 to 2024, containing 104 academic documents sourced from 86 publications, with an average age of 2.11 years. These documents include 79 articles, 19 book chapters, 4 conference papers, 1 book, and 1 review. The average citation count per document is 7.93, and the total references across all documents is 6,444. There are 321 authors, with 17 single-authored documents, and an average of 3.14 co-authors per document. About 34.62% of the documents involve international collaborations. The dataset is marked by stable growth, with no increase in the number of documents per year, and it showcases a strong trend of scholarly collaboration, both domestically and internationally.

Table 2- Average Citations per Year

Year	MeanTC per Year	MeanTC per Article	N	Citable Years
2013	2.08	25.00	1	12
2015	0.00	0.00	1	10
2016	0.33	3.00	2	9
2017	1.08	8.67	3	8
2018	2.00	14.00	4	7
2019	3.62	21.75	4	6
2020	5.18	25.90	10	5
2021	3.60	14.38	13	4
2022	2.17	6.50	14	3
2023	1.58	3.17	12	2

2024	1.28	1.28	39	1
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(Source- R Studio)

The table provides citation data for academic documents published between 2013 and 2024. It shows the average total citations per year (**MeanTC per Year**) and the average total citations per article (**MeanTC per Article**) for each year. The number of documents published in each year (**N**) and the number of years they remain citable (**Citable Years**) are also listed. The citation trends reveal varying impacts over time, with the highest citation counts occurring in 2020, which saw 10 documents published with an average of 25.90 citations per article. In contrast, documents from 2024 are still in their early stages of citation, with an average of 1.28 citations per article and only 1 year remaining for citation eligibility. The data reflects the evolving influence of the publications over time, with newer works typically having fewer citations due to their recency.

Table 3- Data for Articles Published Each Year

Year	Articles
2013	1
2014	0
2015	1
2016	2
2017	3
2018	4
2019	4
2020	10
2021	13
2022	14
2023	12
2024	39
2025	1

(Source- R- Studio)

The table shows the number of articles published each year from 2013 to 2024. There was no article published in 2014, but the number gradually increased over the years, peaking in 2024 with **39 articles**. After 2020, there was a notable rise in publication volume, with 2021 and 2022 also seeing high counts of **13** and **14 articles** respectively. The year 2025 has **1 article**, indicating it might be the beginning of a new trend or data for that year is still being collected. This data shows a clear increase in the number of articles published over time, especially in the later years.

Table 4- Summarizing the sources and the number of articles published in each

Source	Articles
SUSTAINABILITY (SWITZERLAND)	9
JOURNAL OF INTERNATIONAL WOMEN'S STUDIES	3
COGENT BUSINESS AND MANAGEMENT	2
ECONOMIES	2
GENDER IN MANAGEMENT	2
JOURNAL OF ENTERPRISING COMMUNITIES	2
JOURNAL OF SUSTAINABLE TOURISM	2
PROBLEMS AND PERSPECTIVES IN MANAGEMENT	2
REVISTA DE GESTAO SOCIAL E AMBIENTAL	2
WOMEN ENTREPRENEURS IN THE MIDDLE EAST: CONTEXT, ECOSYSTEMS, AND FUTURE PERSPECTIVES FOR THE REGION	2

(Source- R Studio)

The graph depicts the academic sources and the number of articles published in each of them. **SUSTAINABILITY (SWITZERLAND)** stands out as the leading journal, with **9 articles**. Several other journals have published **2 articles** each, including **COGENT BUSINESS AND MANAGEMENT**, **ECONOMIES**, **GENDER IN MANAGEMENT**, **JOURNAL OF ENTERPRISING COMMUNITIES**, **JOURNAL OF SUSTAINABLE TOURISM**, **PROBLEMS AND PERSPECTIVES IN MANAGEMENT**, **REVISTA DE GESTAO SOCIAL E AMBIENTAL**, and the book **WOMEN ENTREPRENEURS IN THE MIDDLE EAST: CONTEXT, ECOSYSTEMS, AND FUTURE PERSPECTIVES FOR THE REGION**. This distribution highlights a concentration of research in a few key publications, particularly in the fields of sustainability, gender, and entrepreneurship, reflecting the main thematic focus of the articles.

Table 5- Summarizing the sources, their ranks, frequencies, cumulative frequencies, and zones:

Rank	Source	Freq	Cumulative Frequency (cumFreq)	Zone
1	SUSTAINABILITY (SWITZERLAND)	9	9	Zone 1
2	JOURNAL OF INTERNATIONAL WOMEN'S STUDIES	3	12	Zone 1
3	COGENT BUSINESS AND MANAGEMENT	2	14	Zone 1
4	ECONOMIES	2	16	Zone 1
5	GENDER IN MANAGEMENT	2	18	Zone 1
6	JOURNAL OF ENTERPRISING COMMUNITIES	2	20	Zone 1
7	JOURNAL OF SUSTAINABLE TOURISM	2	22	Zone 1
8	PROBLEMS AND PERSPECTIVES IN MANAGEMENT	2	24	Zone 1
9	REVISTA DE GESTAO SOCIAL E AMBIENTAL	2	26	Zone 1
10	WOMEN ENTREPRENEURS IN THE MIDDLE EAST: CONTEXT, ECOSYSTEMS, AND FUTURE PERSPECTIVES FOR THE REGION	2	28	Zone 1

11	2020 2ND INTERNATIONAL SUSTAINABILITY AND RESILIENCE CONFERENCE: TECHNOLOGY AND INNOVATION IN BUILDING DESIGNS	1	29	Zone 1
12	ACCOUNTING, FINANCE, SUSTAINABILITY, GOVERNANCE AND FRAUD	1	30	Zone 1
13	ARAB GULF JOURNAL OF SCIENTIFIC RESEARCH	1	31	Zone 1
14	BUSINESS PERSPECTIVES AND RESEARCH	1	32	Zone 1
15	BUSINESS STRATEGY AND THE ENVIRONMENT	1	33	Zone 1
16	CASE JOURNAL	1	34	Zone 1
17	CENTRAL EUROPEAN MANAGEMENT JOURNAL	1	35	Zone 1
18	COGENT EDUCATION	1	36	Zone 2
19	CSR, SUSTAINABILITY, ETHICS AND GOVERNANCE	1	37	Zone 2
20	DISCOVER SUSTAINABILITY	1	38	Zone 2

(Source- R Studio)

This table shows the ranking of various sources based on the number of articles published. Zone 1 includes the top 17 sources, with SUSTAINABILITY (SWITZERLAND) leading with 9 articles, followed by JOURNAL OF INTERNATIONAL WOMEN'S STUDIES with 3 articles. The cumulative frequency (cumFreq) reflects the total number of articles published up to that source. Zone 2 includes the sources ranked 18 to 20, such as COGENT EDUCATION and DISCOVER SUSTAINABILITY, each with 1 article. Zone 1 sources are more prominent in terms of the number of articles published, while Zone 2 contains less frequently represented sources. The data provides insight into the concentration of publications in certain journals and the overall distribution of articles across different sources.

Table 6- Summarizing the source-specific metrics, including h-index, g-index, m-index, total citations (TC), number of publications (NP), and the starting year of publication (PY_start)

Source	h-index	g-index	m-index	TC	NP	PY_start
SUSTAINABILITY (SWITZERLAND)	7	9	1.167	178	9	2019
GENDER IN MANAGEMENT	2	2	0.250	60	2	2017
JOURNAL OF INTERNATIONAL WOMEN'S STUDIES	2	3	0.286	25	3	2018
JOURNAL OF SUSTAINABLE TOURISM	2	2	2.000	10	2	2024
PROBLEMS AND PERSPECTIVES IN MANAGEMENT	2	2	0.222	10	2	2016
2020 2ND INTERNATIONAL SUSTAINABILITY AND RESILIENCE CONFERENCE: TECHNOLOGY AND INNOVATION IN BUILDING DESIGNS	1	1	0.200	1	1	2020
ACCOUNTING, FINANCE, SUSTAINABILITY, GOVERNANCE AND FRAUD	1	1	0.200	2	1	2020
ARAB GULF JOURNAL OF SCIENTIFIC RESEARCH	1	1	0.500	12	1	2023
BUSINESS STRATEGY AND THE ENVIRONMENT	1	1	1.000	1	1	2024
CASE JOURNAL	1	1	0.500	1	1	2023

(Source- R Studio)

The table provides key metrics for various academic sources. The h-index indicates the number of articles that have received at least as many citations as their position in the ranking (e.g., an h-index of 7 means 7 articles with 7 or more citations each). The g-index is similar but accounts for the cumulative number of citations. The m-index is the h-index divided by the number of years the journal has been active, which helps to evaluate the impact over time. TC represents the total number of citations, NP is the number of published articles, and PY_start shows the year when the journal began publishing. Journals like SUSTAINABILITY (SWITZERLAND), starting in 2019, have higher h-indices and citations, while newer publications like JOURNAL OF SUSTAINABLE TOURISM and BUSINESS STRATEGY AND THE ENVIRONMENT, starting in 2024, have more limited citation metrics. This dataset reveals a mix of established and newer journals, with varying citation impacts depending on the publication period and output.

Table 7- Summarizing the author data, including year, frequency of publications (freq), total citations (TC), and total citations per year (TCpY)

Author	Year	Freq	TC	TCpY
ABBAS A	2022	1	8	2.667
ABDELWAHED NAA	2024	1	2	2.000
ADAMS S	2021	1	23	5.750
ADEBAYO O	2024	1	4	4.000
BEUTELL NJ	2021	2	32	8.000
CUKIER W	2020	1	35	7.000
CUKIER W	2021	1	1	0.250
DUTTA S	2022	1	9	3.000
DUTTA S	2023	1	1	0.500
MUHAMMAD S	2021	2	32	8.000

(Source- R Studio)

The table shows the citation impact of various authors across different years, with some authors achieving high citation counts while others have limited impact. **BEUTELL NJ** and **MUHAMMAD S**, both publishing in 2021, exhibit the highest citation performance, each with **32 citations** and a **TCpY** of **8.000**, indicating significant academic influence. **ADAMS S** also stands out in 2021 with **23 citations** and a **5.750 TCpY**. On the other hand, **CUKIER W** has a strong citation count in **2020 (35 citations, 7.000 TCpY)** but a much lower impact in **2021** with only **1 citation**. Authors such as **DUTTA S** and **ABDELWAHED NAA** have more modest citation counts, with **DUTTA S** receiving a higher citation rate in 2022 (**9 citations, 3.000 TCpY**) but dropping in 2023. The varying citation counts

suggest differences in the research focus, timing of publication, and the visibility of the authors' works in their respective academic communities.

Table 8- Affiliations and the number of articles published

Affiliation	Articles
ALIGARH MUSLIM UNIVERSITY	9
GEORGE EMIL PALADE UNIVERSITY OF MEDICINE	8
COVENANT UNIVERSITY	7
UNIVERSITI MALAYSIA TERENGGANU	6
BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE	5
UNIVERSITY OF STRATHCLYDE	5
GLA UNIVERSITY	4
HAMAD BIN KHALIFA UNIVERSITY	4
MARONDERA UNIVERSITY OF AGRICULTURAL SCIENCES AND TECHNOLOGY	4
RAMON LLULL UNIVERSITY	4

(Source- R Studio)

The table highlights the number of articles published by various universities, with ALIGARH MUSLIM UNIVERSITY leading with 9 articles, followed closely by GEORGE EMIL PALADE UNIVERSITY OF MEDICINE (8 articles) and COVENANT UNIVERSITY (7 articles). Institutions like UNIVERSITI MALAYSIA TERENGGANU and BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE also show notable contributions, each publishing 5 or more articles. The remaining universities, including GLA UNIVERSITY, HAMAD BIN KHALIFA UNIVERSITY, MARONDERA UNIVERSITY OF AGRICULTURAL SCIENCES AND TECHNOLOGY, and RAMON LLULL UNIVERSITY, have each published 4 articles. This distribution suggests that these institutions are actively contributing to the body of research, with some universities having a more significant output, possibly reflecting their research focus, resources, or institutional priorities.

Table 9- Corresponding authors countries

Country	Articles	Articles %	SCP	MCP	MCP %
AUSTRALIA	3	2.9	1	2	66.7
BRAZIL	1	1.0	1	0	0.0
CANADA	1	1.0	1	0	0.0
CHINA	4	3.8	1	3	75.0
COLOMBIA	1	1.0	1	0	0.0
ECUADOR	1	1.0	1	0	0.0
FINLAND	1	1.0	0	1	100.0
GERMANY	2	1.9	1	1	50.0
GHANA	1	1.0	1	0	0.0
GREECE	1	1.0	1	0	0.0

(Source- R Studio)

The table shows the distribution of articles by country, focusing on the number of single-country publications (SCP) and multi-country publications (MCP). CHINA has the highest number of articles (4), with a significant portion (75%) in multi-country collaborations. AUSTRALIA also has notable multi-country collaboration, with 66.7% of its articles being co-authored internationally. FINLAND stands out for having all its articles in multi-country collaborations (100% MCP). BRAZIL, CANADA, COLOMBIA, ECUADOR, GHANA, and GREECE all have one article each, primarily single-country publications (SCP), with no or minimal international collaboration. GERMANY has a balanced mix, with 50% of its articles in multi-country collaborations. This distribution suggests that while some countries like China and Australia have strong international research ties, other countries tend to publish more locally-focused research.

Table 10- Most Cited Countries

Country	TC	Average Article Citations
INDIA	171	13.20
GREECE	98	98.00
UNITED KINGDOM	80	10.00
LEBANON	57	28.50
CHINA	40	10.00
ROMANIA	39	19.50
CANADA	35	35.00
QATAR	33	33.00
ITALY	25	12.50

(Source- R Studio)

The table highlights the total citations (TC) and the average article citations for various countries. **GREECE** stands out with the highest average article citations of **98.00**, despite having a total of **98 citations**, which suggests that its publications are highly impactful. **CANADA** and **QATAR** also have strong citation averages, with **35.00** and **33.00** respectively, indicating that their articles receive considerable attention despite having lower total citations (35 and 33). **LEBANON** has a notable average of **28.50**, indicating impactful research, even though it has fewer total citations (**57**). In contrast, **CHINA**, with **40 total citations**, has a much lower average of **10.00**, indicating that its articles might be less frequently cited on average. **INDIA** has the highest total citations (**171**) but a moderate average of **13.20**, suggesting a larger number of articles with less citation concentration.

ROMANIA and **ITALY** have more modest citation totals and averages, with **19.50** and **12.50** respectively, showing that their publications are somewhat cited but not as frequently as those from countries with higher averages. Overall, while **India** has the highest total citations, countries like **Greece**, **Canada**, and **Qatar** demonstrate higher per-article impact.

Table 11- Global Cited Articles

Paper	DOI	Total Citations	TC per Year	Normalized TC
KAMBERIDOU I, 2020, J INNOV ENTREPRENEURSHIP	10.1186/s13731-020-0114-y	98	19.60	3.78
AGARWAL S, 2020, J CLEAN PROD	10.1016/j.jclepro.2020.123135	87	17.40	3.36
BASTIAN BL, 2019, SUSTAINABILITY	10.3390/su11226472	57	9.50	2.62
THAPA KARKI S, 2018, INT J SOCIOL SOC POLICY	10.1108/IJSSP-12-2017-0166	40	5.71	2.86
CUKIER W, 2020, GENDER MANAGE	10.1108/GM-11-2019-0204	35	7.00	1.35
AL-QAHTANI M, 2022, SUSTAINABILITY	10.3390/su14074091	33	11.00	5.08
STEFAN D, 2021, SUSTAINABILITY	10.3390/su13095298	29	7.25	2.02
NZIKU DM, 2021, J ENTERPR PUB POL	10.1108/JEPP-09-2020-0073	27	6.75	1.88
MAHAJAN R, 2021, J ENTERPRISING COMMUNITIES	10.1108/JEC-11-2020-0184	25	6.25	1.74
SAVIANO M, 2017, GENDER MANAGE	10.1108/GM-07-2016-0138	25	3.13	2.88

(Source- R Studio)

The table shows a variety of research papers with varying citation performance across different metrics. KAMBERIDOU I (2020) leads with 98 total citations and a 19.60 TC per year, indicating significant impact and attention in its field, with a relatively high normalized TC of 3.78. Similarly, AGARWAL S (2020) also performs well with 87 citations, a 17.40 TC per year, and a 3.36 normalized TC. AL-QAHTANI M (2022) has an impressive normalized TC of 5.08, despite fewer total citations (33), indicating efficient citation accrual over time. BASTIAN BL (2019) and THAPA KARKI S (2018)

show moderate success, with 57 and 40 citations, respectively, but their TC per year values are lower compared to the top performers. On the lower end, CUKIER W (2020), NZIKU DM (2021), MAHAJAN R (2021), and SAVIANO M (2017) have fewer citations and lower TC per year values, with CUKIER W showing a particularly low normalized TC of 1.35. Overall, the data reveals a wide range of citation impacts, with some papers achieving high sustained visibility and others receiving more modest recognition.

Table 12- Local Cited Documents

Document	DOI	Year	Local Citations	Global Citations	LC/GC Ratio (%)	Normalized Local Citations	Normalized Global Citations
CHAKRABORTY U, 2022, MANAGE RES REV	10.1108/MRR-01-2021-0046	2022	3	11	27.27	10.50	1.69
OKEKE-UZODIKE OE, 2018, J INT WOMEN'S STUD	-	2018	3	14	21.43	4.00	1.00
QUAGRAINIE FA, 2021, J ENTERPR EMERG ECON	10.1108/JEEE-11-2019-0174	2021	2	23	8.70	8.67	1.60
OKEKE-UZODIKE OUE, 2019, J INT WOMEN'S STUD	-	2019	1	10	10.00	4.00	0.46
SAVIANO M, 2017, GENDER MANAGE	10.1108/GM-07-2016-0138	2017	1	25	4.00	3.00	2.88
CUKIER W, 2020, GENDER MANAGE	10.1108/GM-11-2019-0204	2020	1	35	2.86	10.00	1.35
NZIKU DM, 2021, J ENTERPR PUB POL	10.1108/JEPP-09-2020-0073	2021	1	27	3.70	4.33	1.88
MAZHAR S, 2022, SUSTAINABLE DEV	10.1002/sd.2313	2022	1	8	12.50	3.50	1.23
HENDRATMI A, 2024, WORLD DEV SUSTAIN	10.1016/j.wds.2024.100175	2024	0	0	0.00	0.00	0.00
SÁNCHEZ-RIOFRÍO A-M, 2024, ECONOMIES	10.3390/economies12090225	2024	0	0	0.00	0.00	0.00

(Source- R Studio)

The table provides an overview of local and global citation performance for various documents. CHAKRABORTY U (2022) leads with a 27.27% LC/GC ratio, indicating that a significant portion of its citations is local. It also has the highest normalized local citations (10.50) compared to others, suggesting its high local impact. On the other hand, OKEKE-UZODIKE OE (2018) and OKEKE-UZODIKE OUE (2019) have a relatively smaller LC/GC ratio of 21.43% and 10.00%, respectively, but still maintain decent citation performance. SAVIANO M (2017) has a higher normalized global citation (2.88), despite only receiving 1 local citation, showing that the document has substantial global visibility. QUAGRAINIE FA (2021) has a good balance between local and global citations, with an LC/GC ratio of 8.70%, and both local and global citation values above average. The most recent documents, HENDRATMI A (2024) and SÁNCHEZ-RIOFRÍO A-M (2024), have yet to accumulate any citations, indicating their early stage or limited impact in the field. In summary, the documents with

the highest citation counts and ratios, such as CHAKRABORTY U and SAVIANO M, demonstrate strong influence within their respective regions and globally.

Table 13- Frequency of Keywords

Word	Occurrences
entrepreneur	15
sustainable development	15
womens status	11
sustainable development goal	9
sustainability	7
business	5
pakistan	5
women entrepreneurs	5

(Source- R Studio)

The table highlights the frequency of key terms related to gender, entrepreneurship, and sustainability. "Entrepreneur" and "sustainable development" appear most frequently (15 times each), underscoring their central role in the discourse of this field. The term "women's status" also shows a significant presence (11 occurrences), suggesting a focus on the position and empowerment of women within entrepreneurial and sustainable development contexts. "Sustainable development goal" (9 occurrences) is closely tied to global initiatives aimed at fostering social, economic, and environmental sustainability, indicating its relevance in discussions. The terms "sustainability", "business", "Pakistan", and "women entrepreneurs" each appear five times, pointing to a nuanced focus on women-led businesses in specific regions, such as Pakistan, and their alignment with broader sustainability objectives. This pattern of word usage reflects the ongoing discourse at the intersection of gender, entrepreneurship, and sustainable development.

Table 14- Trendy Topics

Term	Frequency	Year (Q1)	Year (Median)	Year (Q3)
women entrepreneurs	5	2017	2020	2021
sustainable development	15	2020	2021	2023
Business	5	2021	2021	2022
pakistan	5	2021	2021	2022
entrepreneur	15	2021	2022	2024
sustainable development goal	9	2021	2022	2024
sustainability	7	2022	2022	2024
womens status	11	2022	2024	2024

(Source- R Studio)

The table reveals the distribution of terms over the years. "Sustainable development" and "entrepreneur" appear as prominent topics, with both having high frequencies (15 occurrences). "Sustainable development" emerged in 2020 (Q1), peaked in 2021 (Median), and continued to be discussed heavily into 2023 (Q3). Similarly, "entrepreneur" gained traction in 2021 (Q1), remained relevant in 2022 (Median), and continued into 2024 (Q3). The terms "women entrepreneurs" and "business" appear less frequently (5 times each), with "women entrepreneurs" first appearing in 2017 (Q1) and gaining prominence by 2020-2021. "Sustainable development goal" and "sustainability" both became increasingly discussed starting around 2021 and are expected to continue through 2024. The term "womens status" began to be more prominent by 2022 and peaked in 2024, indicating a growing focus on gender issues within entrepreneurship and sustainability. Overall, the data highlights the increasing relevance of sustainable development, entrepreneurship, and gender-focused discussions in recent years.

Table 15- Co- Citation Network

Node	Cluster	Betweenness	Closeness	PageRank
jennings j.e.	1	187.500	0.007	0.077
brush c. 2019	1	71.000	0.005	0.050
byrne j. 2019	1	0.000	0.004	0.029
ahl h. 2012-1	1	0.000	0.003	0.014
bardasi e. 2011	1	22.000	0.003	0.026
de vita l. 2014	1	2.000	0.003	0.021
langowitz n. 2007	1	9.000	0.004	0.028
shane s. 2000	1	0.000	0.004	0.029
carranza e. 2018	1	0.000	0.003	0.013
foss l. 2019	1	0.000	0.004	0.019

(Source- R Studio)

The table displays the network metrics (Betweenness, Closeness, and PageRank) for various authors and their works. Jennings J.E. stands out with the highest betweenness (187.500) and PageRank (0.077), indicating a central role in the network and likely significant influence in the field. Brush C. (2019) follows with betweenness of 71.000 and PageRank of 0.050, suggesting notable but slightly less centrality compared to Jennings. In contrast, authors like Byrne J. (2019), Ahl H. (2012-1), and Carranza E. (2018) have low betweenness and PageRank values, indicating that their works are less influential in terms of connecting other works or citations. Langowitz N. (2007) and Bardasi E. (2011) show moderate influence, with Bardasi having a reasonable betweenness score (22.000). The Closeness values across the authors are relatively low, which may suggest that the network is sparse or that these authors are not in direct proximity to a highly dense set of citations. Overall, the data suggests that Jennings J.E. and Brush C. (2019) have the most influence in terms of citation and

centrality within this group of authors, with the other authors appearing less central or influential within the network.

Discussion

The analysis of the provided data from various perspectives, including author collaboration, publication trends, citation metrics, and keyword analysis, offers a comprehensive view of the research landscape within the field. The results highlight key patterns in terms of collaboration, citation impact, and thematic trends, allowing for a deeper understanding of how research evolves over time and what areas are emerging as significant.

Author Collaboration and Productivity

The data indicates a diverse set of authors and institutions contributing to the body of research. With a total of 321 authors, a high proportion of documents were co-authored, as reflected in the average number of co-authors per document (3.14). This suggests a collaborative nature in the research community, where scholars from different backgrounds and expertise work together to address complex problems. The number of single-authored documents is relatively low (17), indicating that most researchers prefer collaboration. Moreover, international co-authorship is notable, comprising 34.62% of all documents. This international collaboration points to a global effort in advancing knowledge and tackling global issues, such as sustainability and women's entrepreneurship.

Publication Trends

The year-wise publication data reveals an upward trajectory in the number of publications over the years, especially from 2020 onwards, with a notable peak in 2024. This surge in publications could be attributed to the increasing importance of the topics addressed, such as sustainability, women entrepreneurship, and sustainable development, which have gained significant attention globally. The year 2020 marks a period of accelerated research activity, which aligns with the global focus on sustainability amid growing environmental concerns. Similarly, the increase in publications from 2021-2024 shows that these topics remain pertinent, with a growing number of researchers contributing to this field.

Citation Metrics and Impact

Citation analysis reveals varying levels of academic impact across the years, with a few highly cited papers standing out. For example, **Jennings J.E. (2020)** and **Brush C. (2019)** are identified as highly influential, with exceptional betweenness and PageRank scores, suggesting their centrality in the research network. These authors have made significant contributions, influencing the direction of the research and shaping the discourse in their respective areas. The **Normalized Citations** also highlight that some documents, such as **Kamberidou I. (2020)**, **Agarwal S. (2020)**, and **Bastian BL**

(2019), have achieved global visibility and scholarly recognition. Conversely, several recent papers, particularly those published in 2024, show limited citation impact so far, which may reflect their recency and the time needed for their influence to grow.

Thematic Trends and Keywords

The keywords analysis offers insights into the focal points of the research. Terms like "entrepreneurship," "sustainable development," "women's status," and "sustainability" dominate the keyword list, underscoring the importance of addressing environmental, social, and economic dimensions in contemporary research. "Women entrepreneurs" and "sustainable development goals" are particularly prominent, reflecting ongoing efforts to empower women in business while ensuring that sustainable practices are incorporated into entrepreneurship. The frequent appearance of terms like "Pakistan" and "business" further suggests a focus on regional studies, with some papers concentrating on specific geographical areas or business practices.

The emergence of "sustainability" and "entrepreneurship" as key themes indicates an increasing recognition of the need for integrating sustainability into business practices and entrepreneurship. This trend is consistent with global sustainability goals and the growing importance of sustainable business practices, as highlighted by the United Nations Sustainable Development Goals (SDGs). As such, research in this field is becoming not only a tool for academic inquiry but also a source of practical solutions for contemporary global challenges.

Institutional Contributions

The institutional analysis identifies key contributors to this field, with **Aligarh Muslim University** and **George Emil Palade University of Medicine** being among the top institutions in terms of article production. This suggests that these institutions are at the forefront of research in sustainability and women's entrepreneurship, potentially due to strong research programs, funding, and collaborations. The presence of institutions from diverse geographical regions also indicates that the field is globally distributed, with contributions from both established and emerging research hubs.

International Collaborations and Geographic Distribution

The international dimension of the research is further emphasized by the distribution of articles across countries. Countries like **Australia**, **China**, **United Kingdom**, and **India** are prominent contributors to the literature. This global spread reflects the universal relevance of the research themes, such as sustainability and women's entrepreneurship, which are not limited by geographic boundaries. Additionally, the analysis of local versus global citations shows that researchers from some countries, like **India** and **Greece**, have achieved significant local impact, whereas others, such as **Canada** and **Qatar**, exhibit more global reach. These patterns suggest that while some countries

are developing strong domestic research networks, others have managed to position themselves within the international academic discourse.

Conceptual and Intellectual Structure

The network analysis, based on metrics such as **betweenness**, **closeness**, and **PageRank**, provides a picture of the conceptual and intellectual structure within the field. High betweenness scores for key authors such as **Jennings J.E.** and **Brush C. (2019)** indicate their pivotal role in bridging different research areas and fostering interdisciplinary collaboration. These authors are central to the knowledge flow in the field, shaping its trajectory. Conversely, authors with lower centrality scores may be contributing valuable insights but are less involved in cross-disciplinary research networks.

Conclusion

In conclusion, the analysis of the research landscape reveals a significant upward trend in publications and citations in areas such as sustainability, women entrepreneurship, and sustainable development, with a notable rise in global collaboration and institutional contributions. Key authors and institutions have emerged as central figures in advancing these fields, with a few highly influential works shaping the discourse. The growing focus on sustainable business practices, particularly women's entrepreneurship, highlights the increasing relevance of these topics in addressing global challenges. As the field continues to evolve, ongoing collaboration, coupled with emerging trends, will play a crucial role in furthering academic inquiry and offering practical solutions for sustainable development.

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