

## **Multifaceted Linkage between Women Entrepreneurship and Sustainable Development Goals: A Bibliometric Exploration**

*Discipline: Commerce*

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### **Abstract**

Women entrepreneurs play a critical role in molding a sustainable future. It emerged as a key driver of sustainable development by blending innovation with economic empowerment to achieve goals such as gender equality and economic growth. The heightening emphasis on accomplishing sustainable development goals has highlighted the critical role of women entrepreneurs in driving social, sustainable, economic, and environmental progress. The study aims to present an all-inclusive bibliometric analysis of women entrepreneurship and sustainable development goals. It aims to identify the prominent themes and studies in this area. The Scopus database was chosen to extract the dataset from 2000 to 2025 due to its strong reputation and credibility. A string of appropriate keywords was employed to search the papers in the title, abstract or keywords yielding 232 initial records. The search was purified to include articles from the subject areas, 'Business Management and Accounting, Social Science, Economics, Econometrics and Finance, Arts and Humanities, and Multidisciplinary. Finally, a filter to include articles only in English was also applied, and the final dataset used for the analyses comprised 219 records. It was found that sustainability, women entrepreneurship and sustainable development goals, sustainable entrepreneurship, fintech, and agriculture are the most prominent themes in this area, and the studies by Grimes, Bastian, and Raman are the most influential studies based on the citation counts. Moreover, the study identified the major SDGs in connection with women entrepreneurship, SDG 8 and SDG 5, and the study concludes by suggesting future research directions.

**Keywords:** Sustainable development goals, Sustainability, SDG8, SDG 5, Bibliometric analysis, Women entrepreneurship

## 1. Introduction

Sustainable Development Goals were established by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development, which focuses on addressing global challenges and fostering sustainable development (Adefare et al., 2024; Raman et al., 2022). Entrepreneurship accelerates economic growth by enhancing novelty in creations and innovative activities, generating employment, mitigating poverty, and encouraging healthy competition at the national and international level (Agarwal et al., 2020). It is widely acknowledged and agreed upon that the presence of women entrepreneurs is crucial for achieving equitable economic and social progress (Muo et al., 2023). Despite the recognition of women's significant role in entrepreneurship and economic growth, there is a limited acknowledgment of their contributions to the SDGs. There is a notable gap in the literature regarding the specific contributions of women entrepreneurs to sustainable development outcomes. The study highlights the need for more focused research that examines how women-led enterprises can impact various SDGs. The research problem includes the need to investigate the direct and indirect impacts of women entrepreneurship on various facets of sustainable development.

The elementary purpose of this study is to understand the existing scenario of the interconnectedness between women entrepreneurship and sustainable development goals SDGs by conducting a comprehensive bibliometric analysis, integrating studies from 2000 to 2025.

## Research Questions

1. What are the prominent themes and studies associated with the research area?
2. What are the major SDGs in alignment with women entrepreneurship?
3. What are the future research trajectories?

The rest of this paper is structured as follows: the second section outlines the research methodology, which comprises database, keywords, and inclusion criteria. The third part encompasses the results and discussion. It consists of annual scientific production and citation of articles from the analysed collection. Then, the network and table showing the major clusters associated with the research area are shown. After that, the table showing the most influential studies depicting the major areas explored in the studies is being placed. Then, the conceptual structure showing the evolution of themes from 2006 to 2025 is presented. The fourth part entails the conclusion, and the fifth part suggests the future research directions.

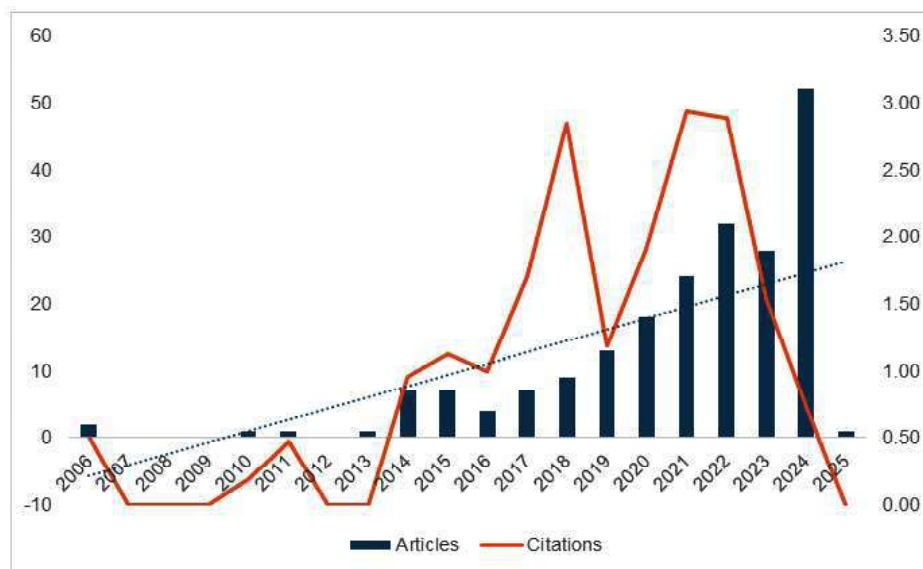
## 2. Research Methodology

### 2.1. Database and search strategy

The data that better reflects the information relevant to this study was retrieved from the Scopus database in January 2025. The Scopus database was chosen due to its strong reputation and credibility when compared to other databases like Google Scholar (Falagas et al., 2008). The Scopus repository has the power to exclude predatory journals (Paul et al., 2021). The data from the period 2000 to 2025 was analysed. This period recognises sustainable development goals as a major theme in academia. A string of appropriate search terms (“Women Entrepreneur\*” AND “Sustainable Development Goals” OR “SDG” OR Sustainability OR “Global network\*” OR “International Network\*”) were employed to search the papers in the title, abstract or keywords yielding 232 initial records. The search was purified to include articles from the subject areas, ‘Business Management and Accounting, Social Science, Economics, Econometrics and Finance, Arts and Humanities, and Multidisciplinary, which accumulated 219 records. Finally, a filter to include articles only in English was also applied, resulting in 219 documents. The final dataset used for the analyses comprised 219 records. The methodology adopted uses the Biblioshiny application of the Bibliometric package version 4.4.2 (Aria & Cuccurullo, 2017).

## 3. Results and Discussion

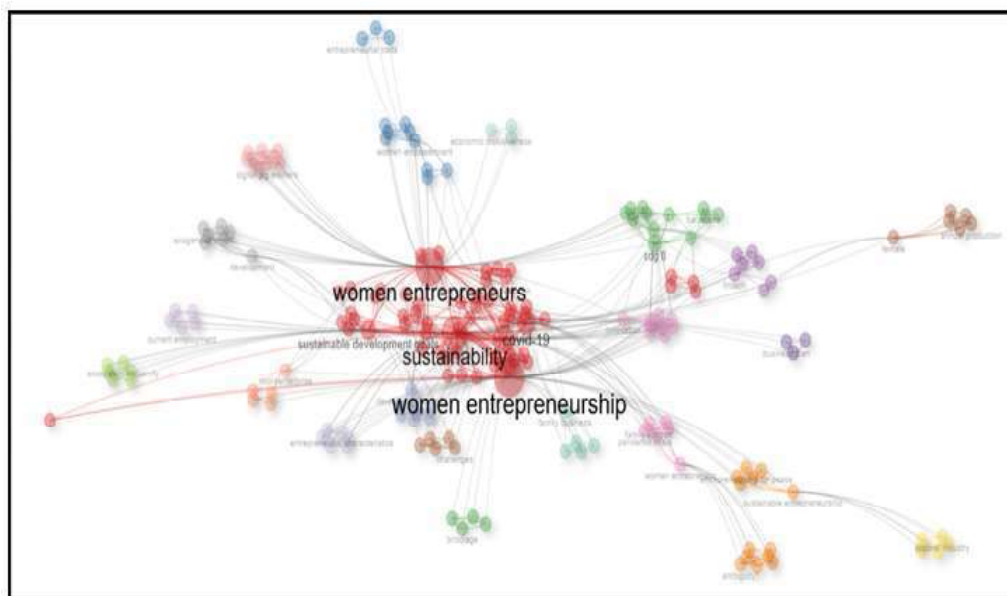
**Figure 1: Annual Scientific Production and Citation of Articles**



*Source: Created by the researchers*

Fig. 1 represents the scientific production and average citation of articles in a year from the analyzed collection of records. The annual scientific production shows an upward trend, with the greatest number of articles in 2024. The trendline is an indicator that the domain constantly gains scholarly focus and research interest. The average annual citations also show a zig-zag upward trend, which strengthens the domain's heightening significance. The overall growth of both parameters shows that interested academicians or scholars can explore this domain of research.

**Figure 2: Network Visualization of the most Prominent Clusters**



*Source: Extracted from RStudio Version 4.4.2*

Figure 2 represents the network visualisation of the most proficient clusters. The network clearly shows that women's entrepreneurship, sustainability, and sustainable development goals are the profound themes in the dataset.

**Table 1: Major themes as per Betweenness, Closeness, and Page Rank Centrality**

<b>Words</b>	<b>Cluster Label</b>	<b>Betweenness Centrality</b>	<b>Closeness Centrality</b>	<b>Pagerank Centrality</b>
Women Entrepreneurs	Women Entrepreneurs	5335.76	0.002	0.032
Sustainability	Women Entrepreneurs	4508.22	0.002	0.035
Women Entrepreneurship	Women Entrepreneurs	5694.26	0.002	36
Sustainable Development Goals	Women Entrepreneurs	1539.91	0.002	0.015
Emerging Economies	Women Entrepreneurs	515.926	0.002	0.007
Gender	Women Entrepreneurs	686.425	0.002	0.007
Agriculture	Women Entrepreneurs	30.639	0.002	0.004
Economic growth	Women Entrepreneurs	0.667	0.002	0.004
Entrepreneurial Orientation	Women Entrepreneurs	850.243	0.002	0.006
Sdgs	Women Entrepreneurs	243.287	0.002	0.005
Tourism	Women Entrepreneurs	148.192	0.002	0.006
SDG 8	SDG 8	1206.684	0.002	0.011
SDG 5	SDG 8	162.9	0.002	0.006
Fintech	Fintech	316.119	0.002	0.006
Sustainable Entrepreneurship	Sustainable Entrepreneurship	945	0.002	0.007

Source: Created by the researchers based on the information from RStudio Version 4.4.2

The popularity of an article is measured by its citation count, but its prominence is calculated by page rank centrality (Goyal & Kumar, 2021). Page rank centrality means the influence of a cluster based on its intellectual and structural connections with other eminent clusters. The higher the page rank, the greater the density and relevance of a cluster. In the same way, betweenness and closeness centrality also indicate the relevance of the clusters.

Figure 2 shows the major themes in the network, which are women entrepreneurs, sustainability, women entrepreneurship, and sustainable development goals. Considering the page rank, betweenness, and closeness centrality, the clusters that highlight the importance of SDGs in the context of women entrepreneurship are: (1) Women entrepreneurs; this cluster has high page rank values for key terms such as women entrepreneurship (0.036), women entrepreneurs (0.035), and sustainability (0.032). (2) SDG 8; this cluster includes themes like SDG 8 (0.011) and SDG 5 (0.006). (3) Sustainability; SDGs and sustainable entrepreneurship (0.007) are the related themes.

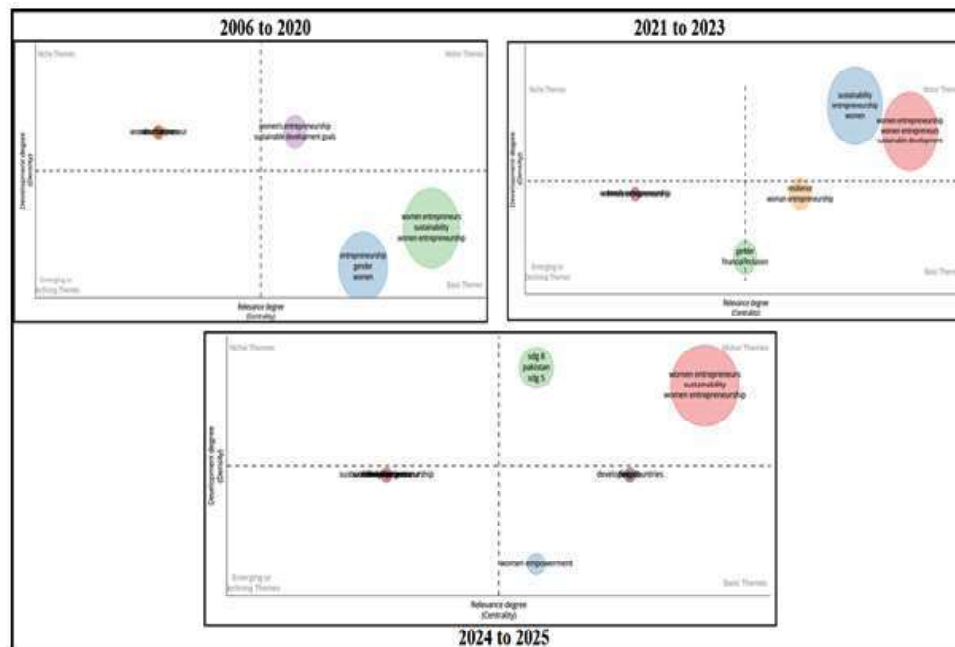
Table 2: Most Influential Studies

SL. NO	Title	Author	Central Focus	Year	TC	CPY
1	Positively deviant: Identity work through B Corporation certification	(Grimes et al., 2018)	The study develops an identity-based framework for describing heterogeneity in adopting sustainability certification among social entrepreneurs	2018	106	13.25
2	Gender Inequality: Entrepreneurship Development in the MENA Region	(Bastian et al., 2019)	The study crucially determines how country measures of gender inequality shape men's and women's entrepreneurial intentions, which were shown in the literature as excellent predictors of the establishment of new ventures.	2018	57	8.14
3	Women Entrepreneurship and Sustainable Development: Bibliometric Analysis and Emerging Research Trends	(Raman et al., 2022)	The study provides insights into the development of women's entrepreneurship research, including a new analysis through the sustainable development and the impact of the COVID 19 pandemic. Bibliometric	2022	56	14
4	Funding Challenges of Latin American Women Start-up Founders in the Technology Industry	(Kuschel et al., 2017)	This paper analyses challenges women startup founders face to secure funding in the technology industry.	2017	54	6
5	Gaining legitimacy through proactive stakeholder management: The experiences of high-tech women entrepreneurs in Russia	(Vershina et al., 2020)	This paper offers insights into the critical role played by stakeholder relationships for female-owned high-technology firms in their pursuit of the legitimacy they need to acquire	2017	9	4.72

6	Rural Women Entrepreneurs in Oman: Problems and Opportunities	(Ghouse et al., 2021)	the resources that, in turn, will lead to sustainable innovation and firm growth.	2021	52	10.40
7	Women-owned family businesses in transitional economies: Key Influences on Firm Innovativeness and Sustainability	(Gundry et al., 2014)	Challenges encountered by rural women entrepreneurs in Oman	2014	45	3.75
8	Technological Adaption and Open Innovation in SMEs: A Strategic Assessment of Women-owned SMEs Sustainability in Bangladesh	(Lingyan et al., 2021)	The study develops a model of the influences on innovativeness and sustainability in family firms	2021	43	8.60
9	Formalizing Women Entrepreneurs in Kathmandu, Nepal: Pathway towards Empowerment	(Karki & Mirda Xheneti, 2018)	The study explores the impact of technology adoption and open innovation in SMEs run by women entrepreneurs	2018	40	5
10	Impact of Artificial Intelligence and Industry 4.0-based products on Consumer Behavior Characteristics: A Meta-analysis Review	(Khan et al., 2022)	This paper investigates whether the formalisation of the entrepreneurial activities by women supports <u>Sdgs</u> through ensuring women empowerment and equality in the informal economy	2022	39	9.75

*TC - Total Citation, CPY - Citation Per Year*

*Source: Created by the researchers*

**Figure 3: Conceptual Structure from 2006 to 2025 (Thematic evolution)**

*Source: Created by the researchers*

The figure shows the thematic evolution of the research on women entrepreneurship and sustainable development goals. To add more granularity to the data, the themes have been divided into three time periods, keeping the author's keywords as the unit of analysis: 2006 to 2020, 2021 to 2023, and 2024 to 2025. The thematic evolution is represented in four groups in a two-dimensional space (i) motor theme: the most prominent theme which is superior in both density and centrality; (ii) basic theme: a relevant but not yet developed theme; (iii) niche theme: developed, but non-central themes; (iv) emerging or declining theme: themes that are neither relevant nor developed (Akarsu et al., 2023; Moral-Munoz et al., 2018).

While hovering over the three time periods, it can be seen that 'women's entrepreneurship, sustainability, sustainable development goals, and gender are some of the relevant themes that evolved year after year. In the first time slice from 2006 to 2020, sustainable development goals is present in the motor theme where the density and centrality are high. Sustainability and gender occupy the basic theme where there is relevance but no commendable development. Sustainability has been moved to the motor theme from the basic theme, which signifies its increased prominence. In the third time slice, the sustainable development goals have been evolved specifically as "SDG 5



(achieve gender equality and empower all women and girls) and SDG 8 (promote sustained, inclusive and sustainable growth”, full and productive employment and decent work for all). The thematic evolution derives the most connected sustainable development goals with women entrepreneurship.

### 3. Concluding remarks and limitations

Women entrepreneurship shows a multifaceted linkage with SDGs and is characterized by a synergistic relationship where empowering women entrepreneurs not only advances gender equality but also contributes to broader economic, social, and environmental goals. Women entrepreneurs predominantly contribute to the achievement of SDG 5 (Gender equality). Their participation in entrepreneurship not only contributes to SDG 5 but also accelerates social and economic growth and generates employment opportunities, thereby achieving SDG 8 (Decent work and Economic growth). The growing academic focus on this field, especially since 2017, highlights the increasing recognition of the role women entrepreneurs play in sustainable development through digitalisation, social entrepreneurship, and resilience.

The study undertook a comprehensive bibliometric analysis of women entrepreneurship and sustainable development goals. It identified the prominent themes and studies in this area. It was found that sustainability, women entrepreneurship and sustainable development goals, sustainable entrepreneurship, resilience, fintech, and agriculture are the most prominent themes in this area. The major themes were identified by analysing the Betweenness, Closeness, and Page Rank Centrality. Conceptual structure (thematic evolution) was also employed to find out the same. The studies by Grimes, Bastian, and Raman are the most influential studies based on the citation counts. Moreover, the study identified the major SDGs in connection with women entrepreneurship, SDG 8 and SDG 5, which were identified from the thematic evolution from 2006 to 2025. Finally, the study suggests future research directions.

Besides all these, the data was downloaded only from the Scopus database. There are many other repositories like Web of Science, Google Scholar, JSTOR, EBSCO, ScienceDirect, etc., wherein data would have been taken for much more comprehensive analysis. Moreover, the data about Keywords Plus was critical, and the cited references were completely missing. Therefore, the analysis employing such parameters was unable to be performed. An in-depth analysis of every individual document was not possible as there were plenty of missing values in the extracted files. The use of different parameters as the unit of analysis and different drawing methods shall affect the uniformity of the result.

#### 4. Future research directions

The review of the literature shows that there has been limited focus on the exploration of women entrepreneurship within the context of emerging countries regarding how infrastructural and cultural constraints jive with sustainable development goals (Fauzi et al., 2023). During the time slice of 2021-2023, the themes of gender and financial inclusion were present at the midst of emerging and basic themes, which signifies its relevance though underdeveloped. However, these themes disappeared in the next time slice 2024-2025 which indicates a lack of academic interest in this domain. This demands the need for more penetrating works to integrate these themes into women entrepreneurship models (Rizvi et al., 2024).

SDG 8 (Gender equality) and SDG 5 (Decent work and Economic growth) evolved as a theme during 2024-2025. Scholars need to drill deeper into the nuances of cross-sectoral linkages with SDGs. Research connecting women entrepreneurs to SDG progress in sectors like agriculture, education, and technology remain sparse (de las Heras-Pedrosa et al., 2024).

How collaborations between women entrepreneurs and other stakeholders, such as governments, NGOs, and private sector entities can add to sustainable development can be studied. Research should explore how women entrepreneurs are integrating sustainability into their business models by incorporating eco-friendly innovations and practices. Additionally, researchers can explore the role of social entrepreneurship in achieving sustainable development, as it is an emerging theme in this context.

Technology-driven research are always in the first place. Assessing how fintech and digital transformation can scale-up sustainable women-led enterprises in developing countries can gather scholarly focus (Cardella et al., 2020). Research should also explore how digital competence among women entrepreneurs can be further enhanced to foster innovation and contribute to sustainable business practices. In particular, how digital skills influence the scaling of sustainable business practices has not been deeply explored. On a broader perspective, digitalization can act as a catalyst for achieving SDGs. Hence, it is crucial to implement policies to enhance women's access to digital education and resources. This can be achieved by providing training and skill development programs, and by creating an environment that addresses the unique challenges faced by women entrepreneurs.

The future scope calls for more interdisciplinary research that integrates insights from various fields, such as economics, sociology, and environmental studies, to provide a holistic understanding of the role of women entrepreneurs in achieving sustainable development.

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### **Conflict of Interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this chapter.

### **Data Availability Statement**

Data is available from the corresponding author on reasonable request.

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