

Empowering Women through Self-Help Groups: Analysing Academic Research Output and Trends on Women Empowerment in Multiple Nations (2006-2025)

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Abstract

This study analyzes 143 research documents from 116 sources between 2006 and 2025, revealing steady academic contributions despite a 0% annual growth rate. The documents, averaging 5.46 years in age with 6.217 citations per paper, indicate moderate scholarly influence. Authorship is collaborative, involving 330 researchers, averaging 2.66 co-authors per document. However, international collaboration remains limited at 9.79%, highlighting the predominance of domestic research networks. The dataset is dominated by journal articles (110), followed by book chapters (16), reviews (7), and conference papers (7). Scientific output has shown fluctuations, peaking in 2024 with 20 publications before dropping to 2 in 2025, reflecting the impact of external variables like funding, institutional backing, and shifting priorities. Geographically, India leads with 308 publications, significantly ahead of the USA (23) and Malaysia (5). This dominance is linked to expanding government support, institutional growth, and focus on socio-economic themes such as women's empowerment, rural development, and status enhancement. In conclusion, while the data reflects strong regional academic productivity, it also emphasizes the need for more international partnerships, stable funding, and policy support to sustain and globalize future research efforts.

Keywords: Self-Help Groups, Women Empowerment, Bibliometric Analysis

Introduction

The paper covers academic research output from 2006 to 2025, consisting of 143 documents sourced from 116 different journals, books, and conference proceedings. Notably, the dataset shows 0% annual growth, indicating a stable level of research production over time. Each document in the dataset has an average age of 5.46 years and receives approximately 6.217 citations, reflecting a moderate academic impact. Research collaboration is evident, with 330 authors contributing to the dataset, averaging 2.66 co-authors per document (Anand et al., 2020). However, international collaborations remain limited at just 9.79%, highlighting a predominantly domestic research focus. The dataset comprises various publication types, including 110 journal articles, 16 book chapters, 7 review papers, and 7 conference papers. The presence of 228 Keywords Plus and 327 Author's Keywords suggests a diverse range of research themes. The study of annual research production reveals an evolving trend over time, with an initial slow start, gaps in publication activity, and periods of growth leading to peaks in 2024 before experiencing a sharp decline in 2025. A country-wise analysis of research output reveals that India dominates the dataset, contributing 308 publications—far surpassing the USA (23) and other nations such as Malaysia, Nepal, and the Netherlands, which have only 5 publications each (Shukla, 2025). India's high research productivity may be attributed to its large academic

community, increased government funding, and strong institutional support. Conversely, the USA's relatively lower contribution in this dataset might indicate a specialized research focus or differences in journal representation.

An analysis of authorship trends shows a distributed research landscape, with no single researcher dominating the dataset (Shukla, 2020). Leading authors, including Aggarwal S, Das S, and Patel R, have contributed four documents each, while others, such as Agarwal P and Kumar A, have three publications each. The presence of recurring surnames suggests possible academic networks or collaborative research efforts among scholars from similar institutions or regions. Keyword analysis within the dataset highlights key themes, with "empowerment" being the most frequently used term, appearing 23 times. Other commonly used keywords include "India," "women's status," "self-help," and "rural," suggesting a strong research focus on gender issues, rural development, and community-based empowerment initiatives (Baily, 2014). The prominence of terms like "self-help groups" and "poultry" indicates a connection to socio-economic studies, particularly in rural and agricultural contexts. Institution-wise, the dataset reveals that the ICAR-Central Institute of Freshwater Aquaculture leads research contributions with 11 articles, followed by the International Food Policy Research Institute (9 articles) and the Central University of Haryana (8 articles). Other notable contributors include the International Institute for Population Sciences, Sastra University, and Bihar Technical Support Unit. The presence of multiple agricultural and policy research institutes underscores a focus on rural development and food security (Deshpande & Khanna, 2021).

Citation analysis provides insight into the impact of research across countries. India leads in total citations (364), followed by the USA (230), the Netherlands (90), and Poland (below 50). This ranking suggests that Indian research is not only high in volume but also significantly cited, reinforcing its academic influence within the dataset (Shukla et al., 2016). Other nations, including Malaysia, Nepal, Germany, and the UK, have lower citation counts, possibly due to smaller research networks or different publication priorities.

Important scholarly sources where research has been published are also identified by the dataset. With four published pieces each, the Indian Journal of Economics and Development and the Journal of Rural Development stand out as the most pertinent sources. Other notable journals include the *International Journal of Advanced Science and Technology* and the *Journal of Critical Reviews*, reflecting an interest in multidisciplinary and analytical research. A visual Three-Field Plot analysis further highlights the interconnections between authors, cited references, and research keywords (Shukla & Shukla, 2023). It reveals that research on self-help groups, women's empowerment, and rural development frequently cites foundational works in these fields. These interlinked themes underscore a cohesive research community focused on socio-economic progress. In conclusion, this dataset provides a comprehensive view of academic research trends from 2006 to 2025. While research output has remained relatively stable, fluctuations in publication activity highlight changing research priorities and external influences such as funding and institutional support (Dutta, 2015). India emerges as the dominant research contributor, both in terms of publication volume and citations, while international collaboration remains relatively low. The thematic focus on empowerment, rural development, and policy-driven research suggests an academic landscape shaped by social and economic concerns. Future research efforts may benefit from increased international collaborations and diversified research topics to maintain academic momentum (Shukla & Shukla, 2025).

Review of literature

Ghosh D. & Paul, S. (2021) The study investigates the impact of Self-Help Groups (SHGs) on the empowerment of women in the Akola district of Maharashtra, focusing on five key areas: psychological, cultural, social, economic, and political empowerment. It aims to assess the changes in empowerment levels before and after joining SHGs, using a structured questionnaire to gather data from 140 women. Findings indicate significant improvement in psychological empowerment, with increased confidence and ambition, alongside enhanced cultural freedoms and social decision-making participation. Economic empowerment also rose, with greater opportunities for financial involvement, while political empowerment saw improved awareness of rights. However, the study's limitations include its geographical focus, unspecified sample size, and potential self-reporting biases.

Jaiswal, J. K., Kumar, B., & Kumari, P. (2024) The research systematically reviews 101 studies on women's empowerment through self-help groups (SHGs) between 1998 and 2023, aiming to analyze trends, factors, and methodologies associated with SHGs' impact on women's empowerment. The objectives include identifying key dimensions of empowerment and antecedents influencing outcomes in various contexts. Employing a structured methodology based on the PRISMA framework, the study synthesizes existing literature and uses bibliometric analysis

to uncover publication trends and thematic patterns. Key findings reveal that SHGs significantly enhance women's social capital, decision-making abilities, and access to resources, with a predominant reliance on empirical quantitative studies. Limitations include a lack of qualitative and mixed method approaches and the underrepresentation of certain geographical regions, highlighting the need for further research on political, legal, and cultural antecedents affecting women's empowerment in SHGs.

Kamra, L. (2020). This article examines how state-directed self-help groups (SHGs) in West Bengal, India, function as a mechanism for rural women to engage with the state during counterinsurgency periods. Through ethnographic research, it reveals that participation in SHGs enables women to aspire to new identities and assert agency by accessing state-sponsored public spaces and resources. Women like Sumana, an SHG leader, leverage these collectives to become visible in their communities, gain new leadership roles, and navigate the complexities of gender relations and empowerment. While SHGs create opportunities for social transformation and dialogue, they also highlight the ambiguities of empowerment, as women's journeys are shaped by both the possibilities offered by state initiatives and the traditional gender roles they seek to challenge.

Panda, I. et.al (2024). The paper "Women Empowerment through Self Help Groups: A Bibliometric Analysis" investigates the link between Self Help Groups (SHGs) and women's empowerment, focusing on their potential to enhance socio-economic conditions and promote gender equality among rural women. The study's objectives include identifying key contributors and trends in the field, employing bibliometric analysis using the Scopus database to collect relevant literature published from 1990 to 2022. The findings reveal a growing global interest in the subject, with significant connections between SHGs and women's socio-economic empowerment, health, and gender equality, as indicated by popular keywords such as "women empowerment" and "Self Help Groups." However, the study's limitations include its restriction to English-language publications and reliance on the Scopus database, which may overlook valuable research from other sources.

Kumar, A., Reddy, K. G., & S. V. P. (2020) The study examines the evolution of Women Empowerment (WE) research from 1985 to 2018 using scientometric analysis. It aims to explore trends, shifts in focus, and methodological gaps in the literature. Data was collected from the Web of Science Core Collection, employing techniques like co-citation analysis, topic co-occurrence, and bibliographic coupling. The findings highlight 15 topic clusters, an increase in author-based and journal-based clusters, and five emerging hot topics, including microfinance and ICT education. However, limitations include the exclusion of certain fields, reliance on journal articles, and lack of comprehensive geographical analysis. The study contributes to understanding WE research trends while identifying areas for further exploration.

Maldonado-Castro, J., et.al (2024). The article explores the link between microfinance and women's empowerment through bibliometric analysis, mapping the evolution of research on this topic. It assesses academic productivity, intellectual structure, thematic organization, and key research trends. Using VOS viewer, the study analyses 470 articles from the Web of Science, following a rigorous PRISMA methodology. Findings highlight the historical growth of publications, influential papers, leading authors, and emerging trends in microfinance's role in empowering women. However, limitations include the exclusion of grey literature, reliance on WoS, and a lack of qualitative insights or case studies. The study contributes to understanding how microfinance influences women's socio-economic status while identifying gaps for further research.

Devi, S., et.al (2024). The study employs bibliometric methods to analyse women's empowerment research in Malaysia from 1995 to 2023, focusing on publication trends, influential authors, institutions, and key themes. Using the Scopus database and tools like VOS viewer and Bibliometric, it examines 97 articles, highlighting Malaysia's progress and challenges in gender equality. Findings indicate growing academic interest, with University Sains Malaysia leading in research output. Journals dominate publication sources, with English being the primary language. Key themes include financial independence, decision-making, and political participation. The study underscores interdisciplinary collaboration and intersectionality as future research directions. Policymakers are encouraged to adopt evidence-based strategies and foster institutional partnerships to enhance empowerment initiatives. However, limitations include reliance on Scopus and a Malaysia-centric focus. The research contributes to the literature by mapping the field's evolution and providing insights for policy enhancement, advocacy, and further studies on gender equality in Malaysia and beyond.

Gupta, S., et.al. (2023). This study conducts a bibliometric analysis of research on women's empowerment through self-employment from 1989 to 2022, using data from SCOPUS. It categorizes existing research, identifies theoretical

perspectives, and highlights emerging trends and gaps. The analysis spans 194 publications from 177 sources, with an annual growth rate of 7.39% and 1,198 total citations. Key themes include economic development, self-employment, and women's participation in entrepreneurship. A conceptual structure analysis identifies two major research clusters: economic factors and women's self-employment. Citation analysis reveals influential authors like K. McKee and E. Bhatt. The most cited work examines women's empowerment through social entrepreneurship in India. Findings indicate that self-employment serves as a critical pathway for economic independence despite persistent gender barriers. The study underscores the importance of entrepreneurship policies tailored to women's needs and suggests future research directions for fostering gender-inclusive economic development.

Adeleye, O. R., et.al (2024) This study conducts a bibliometric analysis of research on Sustainable Development Goal (SDG) 5, which focuses on gender equality and women's empowerment. Using Web of Science, 1095 publications were analysed, showing a significant rise in research since 2015, with the highest number recorded in 2021 (n = 227). The analysis, performed using R-studio and VOS viewer, highlights key countries, research areas, and journals contributing to the field. A 2.6-fold increase in publications in 2017 reflects growing interest in women's empowerment studies. The findings establish strong connections between gender, education, impact, and autonomy, emphasizing the importance of research in this area. The study demonstrates global engagement, with both developed and developing countries increasingly focusing on women's empowerment. Ultimately, this research provides valuable insights into publication trends, reinforcing the strong link between women's empowerment and SDG 5.

Ramamurthy, B., & Pradhan, S. K. (2023). This study conducts a bibliometric analysis of microfinance and women's empowerment literature from 1996 to 2022, examining its evolution from economic aspects to broader social impacts. Using Scopus data and VOS viewer, it analyzes 816 publications, tracking citation trends, author contributions, and influential research areas. The study highlights the growth in microfinance research, with the US and UK leading in publications after 2011. Key themes include gender equality, economic empowerment, and poverty alleviation, with the UK's Department of International Development among the top funding agencies. Cluster analysis identifies strong links between microfinance, gender, and empowerment, while citation network analysis highlights top authors like Morduch and Kabeer. The research underscores microfinance's role in improving financial independence, social status, and access to resources for women. It also suggests future research directions, emphasizing policy advancements, funding support, and interdisciplinary approaches to further women's empowerment through microfinance.

MAIN INFORMATION ABOUT DATA

Table 1

Description	Results
Timespan	2006:2025
Sources (Journals, Books, etc)	116
Documents	143
Annual Growth Rate %	0
Document Average Age	5.46
Average citations per doc	6.217
References	4676
DOCUMENT CONTENTS	
Keywords Plus (ID)	228
Author's Keywords (DE)	327
AUTHORS	
Authors	330
Authors of single-authored docs	32
AUTHORS COLLABORATION	

Single-authored docs	33
Co-Authors per Doc	2.66
International co-authorships %	9.79
DOCUMENT TYPES	
article	110
book	2
book chapter	16
conference paper	7
note	1
review	7

The dataset (2006–2025) includes **143 documents** from **116 sources**, with **0% annual growth**, indicating stable research output. The **average document age is 5.46 years**, and each document receives **6.217 citations** on average, showing moderate academic impact. Research is **collaborative**, with **330 authors** contributing and an average of **2.66 co-authors per document**. However, **international collaborations are only 9.79%**, suggesting most research is conducted domestically. The majority of publications are **journal articles (110)**, followed by **book chapters (16)**, **reviews (7)**, and **conference papers (7)**. The dataset also contains **228 Keywords Plus** and **327 Author's Keywords**, reflecting diverse research themes. Overall, the data highlights **consistent academic contributions**, moderate citation influence, and **limited global collaboration**.

Annual Production bibliometrix

The annual scientific production from 2006 to 2015 reveals a modest yet evolving trend in research outputs over the decade. In 2006, the production started with 2 articles, indicating the early stages of scholarly activity in this field ([Shukla, et al., 2020](#)). However, the subsequent three-year period (2007–2009) shows a complete gap with no recorded articles, which might reflect an initial phase of data collection, a period of lower research activity, or a possible shift in focus within the academic community. From 2010 onward, there is a noticeable re-emergence of publication activity. The year 2010 marked the return with 3 articles, suggesting a renewed interest or re-establishment of research momentum. Despite a dip in 2011, where only 1 article was published, the trend began to recover in the following years. By 2012, the output returned to 3 articles, and 2013 experienced a further increase to 5 articles (Gupta et al., 2019). This period of rising output could be indicative of growing recognition of the field's importance, increased research funding, or the maturation of research methodologies and collaborations. Interestingly, 2014 saw a slight reduction to 3 articles, possibly pointing to variability in publication cycles or temporary shifts in research focus. The trend reached a positive peak in 2015 with 6 articles, suggesting that the research community had not only stabilized but was also expanding its scholarly contributions ([Shukla et al., 2022](#)). This increase in 2015 may reflect successful research initiatives, better collaboration among scholars, or an overall strengthening of academic infrastructure. Overall, the trajectory depicted in the data underscores an initial period of limited activity followed by a gradual build-up and eventual peak in research outputs. The fluctuations throughout the decade illustrate the dynamic nature of academic production, influenced by external factors such as funding, institutional support, and evolving research interests.

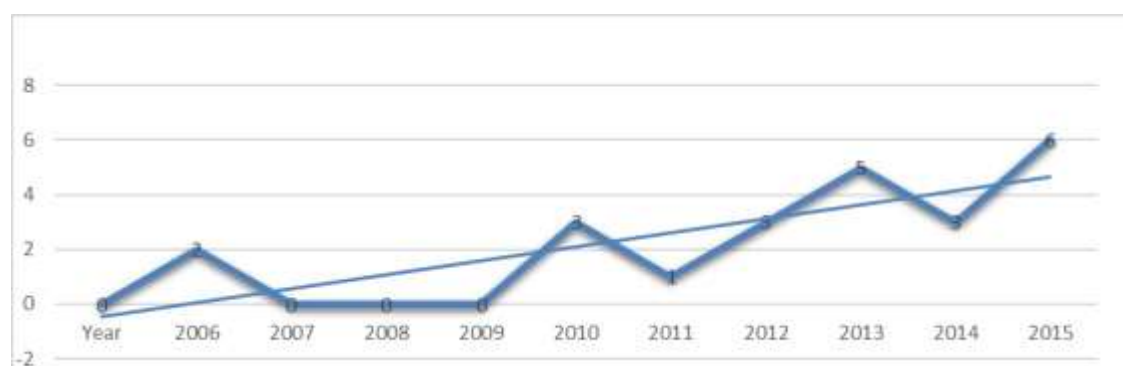
Annual Production bibliometrix

Table 2

Year	Articles
2006	2
2007	0
2008	0

2009	0
2010	3
2011	1
2012	3
2013	5
2014	3
2015	6

Figure 1



Annual Scientific Production

The data from 2006 to 2025 shows fluctuating scientific production. In 2006, only 2 articles were published, followed by a dry spell in 2007-2009 with no publications. A resurgence began in 2010 with 3 articles, followed by slight dips and increases over the years, such as a low point in 2011 (1 article) and a peak in 2017 (10 articles). By 2019 and 2020, the output surged to 15 articles each year, and 2021 saw 14 publications (Hussain et al., 2014). The highest point occurred in 2024 with 20 articles, reflecting improved research momentum and resources. However, 2025 experienced a sharp drop back to 2 articles, reminding us of the volatility in academic output. This sudden decline could be due to changing research priorities or external factors like funding or socio-economic conditions (Kocher et al., 2022). Overall, the data illustrates a general rise in productivity from 2010 to 2024, interrupted by occasional setbacks. It underscores the influence of both internal and external factors on research output, leaving room for further analysis of what's driving these trends. The sharp downturn in 2025 highlights the importance of continued academic support and sustaining collaborations to prevent such declines for 29 seconds

The data on annual scientific production from 2006 to 2025 reveals a fluctuating but generally upward trend until a notable drop in 2025. Initially, from 2006 to 2009, output remained minimal, with only two articles published in 2006 and none from 2007 to 2009 (Singh & Shukla, 2024). A resurgence began in 2010, though 2011 showed a dip to a single publication. Steady growth continued through 2013, fluctuated slightly in 2014, and rebounded in 2015. After another slight drop in 2016, productivity rose significantly by 2017, followed by small variations in 2018 and 2019. The production then stabilized at higher levels through 2020 and 2021, with minor fluctuations in 2022. The field reached a peak in 2024 with 20 articles, signifying robust research momentum or improved resources. However, 2025 recorded a sharp decline back to 2 articles, echoing the initial low levels (Kumar, 2007). This sudden drop might reflect changing research priorities, funding constraints, or external factors such as socio-economic shifts. Overall, the data underscores the dynamic nature of academic output, highlighting the importance of consistent support, collaboration, and resource allocation to maintain growth. Observing these patterns over time can offer insights into the factors driving or impeding scientific production. Long-term tracking remains critically important indeed.

Figure 2

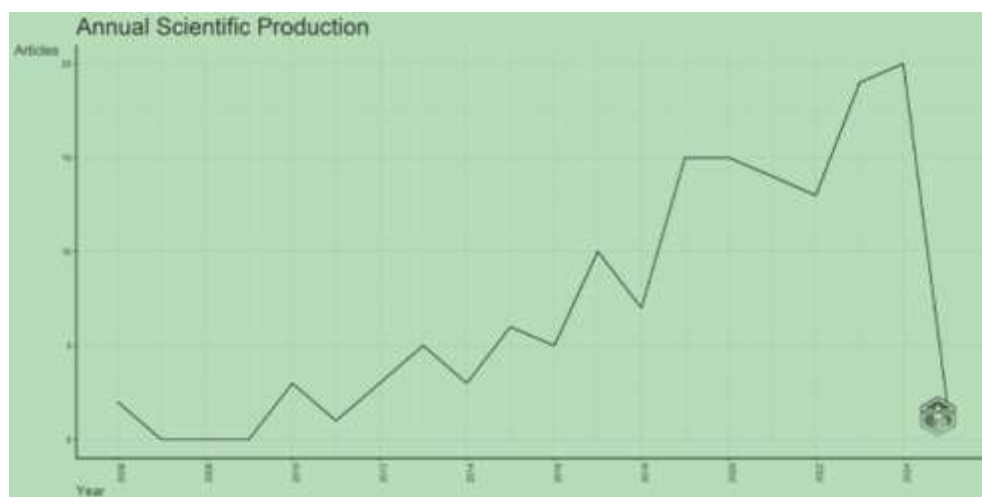


Table 4

Annual Scientific Production	
Year	Articles
2006	2
2007	0
2008	0
2009	0
2010	3
2011	1
2012	3
2013	5
2014	3
2015	6
2016	5
2017	10
2018	7
2019	15
2020	15
2021	14
2022	13
2023	19
2024	20
2025	2

Countries Production Over Time bibliometrix

The data shows a clear upward trajectory in India's article production from 2006 to 2018. Initially, there were 3 articles in 2006, marking a relatively modest research output. By 2010 and 2011, the figure increased to 6 articles each year, reflecting a slow but steady growth. However, from 2012 onward, there is a more pronounced rise, with 10 articles in 2012 and a subsequent jump to 16 in 2013 ([Shukla et al., 2023](#)). This trend continues in 2014 and 2015, where the output reaches 17 and 25 articles, respectively, suggesting an increasingly robust research environment.

A significant surge is observed from 2015 to 2016, with the number of articles growing from 25 to 38, indicating potential boosts in funding, collaboration, or academic infrastructure. The momentum intensifies further in 2017, reaching 61 articles, and peaks at 76 articles in 2018. These figures highlight an accelerating pace of scholarly activity, possibly driven by expanded research initiatives and greater global engagement (Kumar et al., 2021). The absence of data for some years (e.g., 2007–2009) makes it challenging to assess annual consistency. Nevertheless, the available statistics point to a rapid overall expansion of India's research output, underlining its emerging role as a significant contributor to the global academic landscape.

Table 5

Country	Year	Articles
INDIA	2006	3
INDIA	2010	6
INDIA	2011	6
INDIA	2012	10
INDIA	2013	16
INDIA	2014	17
INDIA	2015	25
INDIA	2016	38
INDIA	2017	61
INDIA	2018	76

Country Production bibliometrix

This dataset highlights a stark disparity in scientific production among listed countries, with **India** accounting for **308** publications—far surpassing the other nations. The **USA**, at **23** publications, ranks a distant second, indicating that India's research output within this dataset is exceptionally high compared to global peers (Masset, 2015). Following the USA, countries such as **Malaysia**, **Nepal**, and the **Netherlands** each have **5** publications, while **Ethiopia** accounts for **4**. Meanwhile, **Ireland**, **Poland**, **Portugal**, and the **UK** each contribute **3**.

Several factors could explain India's leading position ([Tripathi & Shukla, 2017](#)). First, India's sheer population size and growing emphasis on higher education may result in a larger pool of researchers and publications. Second, increased government funding and policy support in recent years could be driving more research outputs. Furthermore, the presence of numerous academic institutions and research hubs may collectively boost publication volume (Nichols, 2020). The USA's relatively modest count in this dataset may reflect either a more specialized scope of topics or the exclusion of certain American journals. Similarly, countries with lower frequencies might have smaller research communities or different publication patterns. Overall, this table underscores the uneven global distribution of scientific production, with India standing out as a primary driver in this dataset.

Table 6

Country Production bibliometrix	
Country	Frequency

INDIA	308
USA	23
MALAYSIA	5
NEPAL	5
NETHERLANDS	5
ETHIOPIA	4
IRELAND	3
POLAND	3
PORTUGAL	3
UK	3

Country Scientific Production



Figure 1

Country Over Time

It seems like there's a reference to an image, but I cannot access or view images in this text-based format. If you can provide me with the data or describe the information shown in the image, I'll be happy to provide a 200-word analysis based on that! for 22 seconds. The line graph illustrates scholarly output from 2006 to 2025 across five countries—India, Malaysia, Nepal, the Netherlands, and the USA—and reveals a marked disparity in publication volume. India starts modestly but experiences a dramatic surge from around 2015 onward, ultimately surpassing 300 articles by 2025 (Nichols, 2021). This growth far exceeds that of the other nations, which remain comparatively low throughout the period. The USA, while emerging as the second-highest contributor, still lags significantly behind India. Meanwhile, Malaysia, Nepal, and the Netherlands each hover at fewer than 10 articles, reflecting either smaller research communities or more specialized publication practices.

Such a pronounced gap points to multiple factors that could be driving India's dominance, including a larger pool of researchers, increased government funding, and heightened institutional support for academic endeavours. India's

broadening research landscape may also reflect diverse fields of study and a growing emphasis on publishing. By contrast, the lower outputs of the other countries might indicate limited resources, narrower research scopes, or different publication norms within this dataset (Niyonsenga et al., 2020). Overall, the chart highlights India's meteoric rise in scientific production and underscores the importance of examining local contexts, funding mechanisms, and collaborative networks to fully understand global variations in research output.

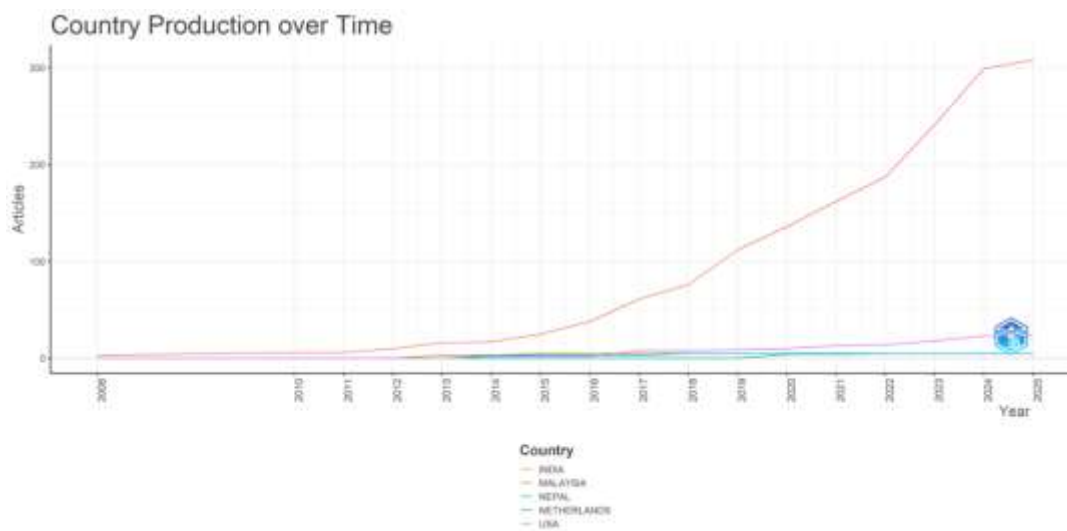


Figure 2

Most Cited Countries

This chart, labelled “Most Relevant Sources,” highlights the top ten journals and conferences where authors in the dataset have published, based on the number of documents contributed to each venue. Two outlets—**Indian Journal of Economics and Development** and **Journal of Rural Development**—stand out with **4 documents each**, indicating their prominence in hosting research within the scope of this collection.

Close behind are journals like **International Journal of Advanced Science and Tech** and **Journal of Critical Reviews**, each with **3 documents**. Their focus on multidisciplinary scientific developments and critical analyses may account for their relatively high representation. Next, **Journal of Enterprising Communities** and **Prabandhan: Indian Journal of Management** each have **2 documents**, reflecting interest in entrepreneurship, community development, and management studies. Meanwhile, the **World Review of Entrepreneurship, Management, and Sustainable Development** also appears, further underscoring the dataset’s inclination toward business, innovation, and sustainability topics.

Additionally, the **2024 5th International Conference for Emerging Technologies** suggests that at least one conference proceeding has been a notable publishing venue, aligning with the growing trend of researchers sharing novel findings at international events. The presence of the **Indian Journal of Extension Education** and **Indian Journal of Finance** with **1 document each** rounds out the list, indicating that while these sources have fewer publications, they remain part of the broader research network (Raghunathan et al., 2023). Taken together, the prominence of India-focused journals covering economics, rural development, management, and extension education points to a strong emphasis on socioeconomic and development-oriented research. It also suggests that the dataset leans heavily toward Indian academic publications. Still, the inclusion of internationally recognized journals and conferences highlights the global dimension of scholarly discourse. Overall, these sources reflect a diverse yet thematically coherent set of publications, showcasing the multifaceted nature of the research captured in this dataset.

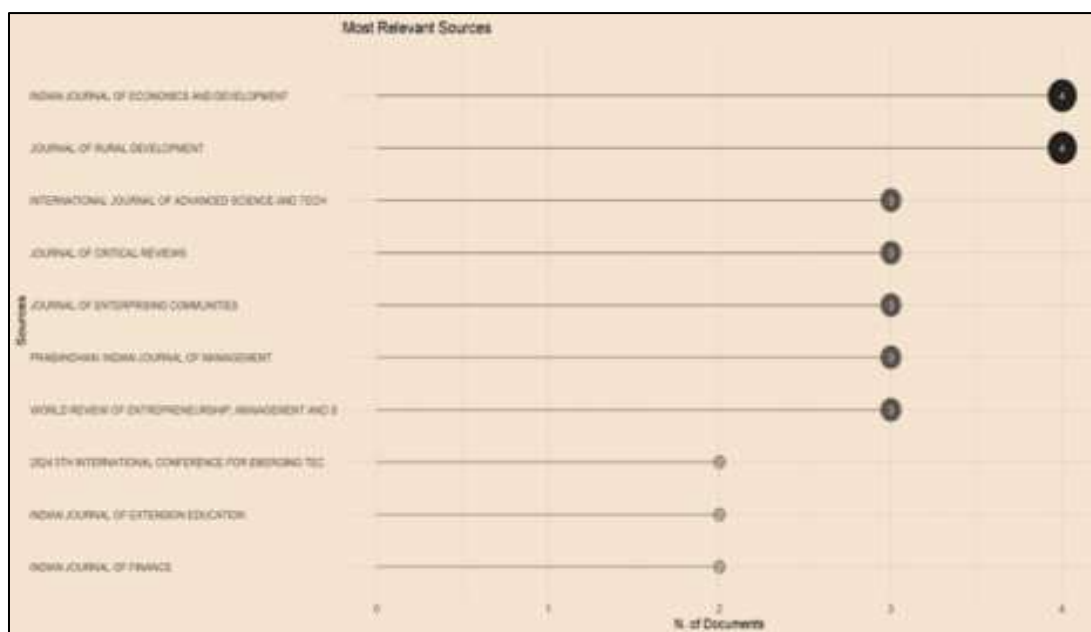


Figure 3

Most Relevant Affiliations

This chart, labelled “Most Relevant Affiliations,” highlights the top institutions contributing research within the dataset, as measured by the number of articles associated with each organization. Leading the list is **ICAR-Central Institute of Freshwater Aquaculture**, with 11 articles. This prominence suggests a strong focus on agricultural and aquaculture-related studies, aligning with broader themes of rural development and food security observed elsewhere in the dataset. Next in line is the **International Food Policy Research Institute** at 9 articles, emphasizing policy-oriented research and the global nature of food systems.

Close behind is the **Central University of Haryana**, credited with 8 articles, indicating an active research community in this Indian university. The **International Institute for Population Sciences** follows at 6 articles, reflecting a demographic and social science research dimension. At 5 articles each, **Sastra University** and **Bihar Technical Support Unit** highlight varied academic and applied research focuses, potentially spanning technology, health, and development sectors. Meanwhile, **JECRC University** and **Centurion University of Technology and Management** appear at 3 articles each, suggesting growing contributions in engineering, technology, or management fields. Rounding out the list is **ICAR - National Dairy Research Institute**, reflecting India’s emphasis on agriculture and livestock-based research. The presence of multiple **ICAR** institutes points to a strong representation of agricultural and food-related studies, possibly driven by government-supported initiatives aimed at enhancing productivity, sustainability, and rural livelihoods.

Overall, this distribution underscores the importance of higher education and specialized research centres in driving scholarly output. Many of these institutions are based in India, consistent with the broader data showing India’s dominant position in publication frequency (Reshmi et al., 2019). Additionally, the mix of policy, technology, and management-focused affiliations highlights the interdisciplinary nature of the dataset. By combining agricultural, policy, demographic, and technological perspectives, these institutions collectively shape the evolving research landscape, contributing diverse insights and practical applications for both regional and global challenges.

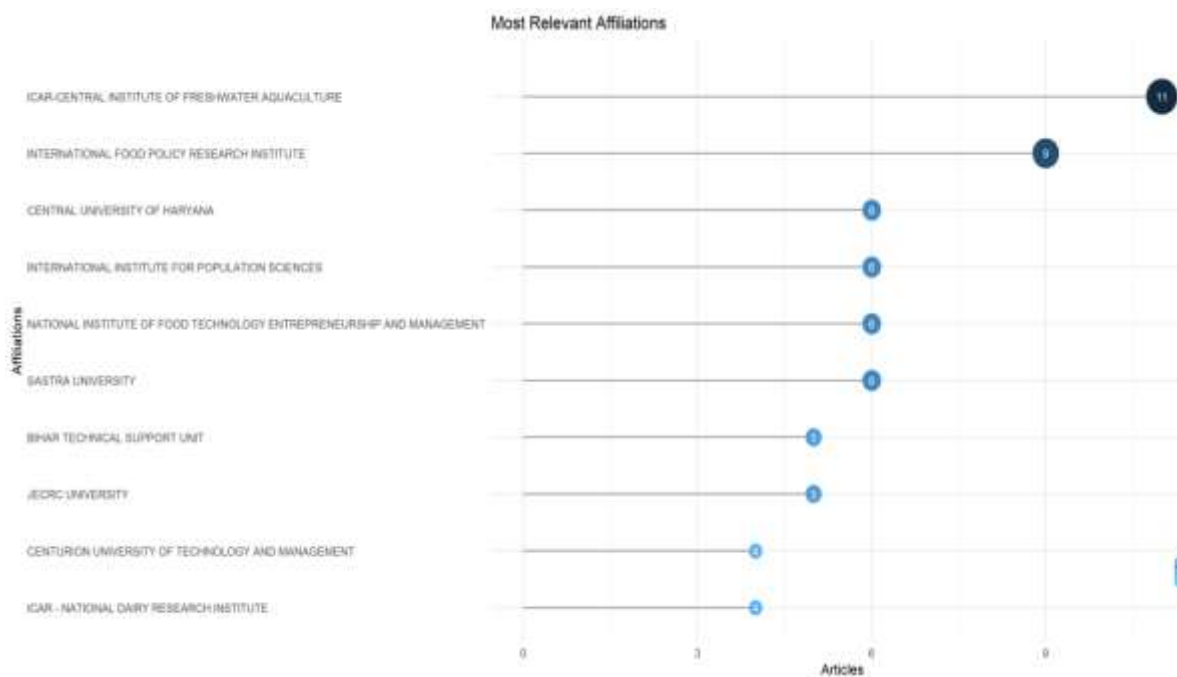


Figure 4

Most Relevant Authors

This chart labelled “Most Relevant Authors,” highlights the top 10 authors who have contributed the most documents to the dataset up to 2025. Leading the group are **Aggarwal S**, **Das S**, and **Patel R**, each with 4 documents. They appear to have consistently published across multiple years, potentially focusing on topics such as agriculture, rural development, or socio-economic studies, in line with the broader dataset’s themes. Next, a group of seven authors, including **Agarwal P**, **Kumar A**, **Kumari N**, **Mathur P**, **Patel N**, **Raghunathan**, and **Sahoo B**, each has 3 documents, reflecting a strong but slightly lower level of productivity.

Interestingly, we see the repetition of certain surnames, such as **Agarwal**, **Aggarwal**, and **Patel**. This pattern might indicate multiple researchers from the same family or region, or it could simply be a common set of names among scholars from India. The presence of multiple authors with the surname Patel suggests potential collaborative networks or a shared research focus in specific fields (Sangeetha et al., 2013). Meanwhile, the names Kumar and Kumari are also common Indian surnames, supporting the dataset’s overall finding that India is a major contributor to the publication landscape.

The difference in the top authors’ counts is minimal, indicating a relatively even distribution of research contributions among leading scholars. However, the small number of publications per author also suggests that the dataset is not dominated by a single prolific figure but rather a diverse group of active researchers. This diversity can enhance the breadth of topics covered and encourage interdisciplinary perspectives.

Overall, the chart underlines how research output is distributed among multiple scholars, with no single author overshadowing the rest. The presence of Indian surnames at the forefront corroborates the strong Indian representation seen in the broader dataset, while the modest range of publication counts points to an engaged yet collaborative scholarly community.

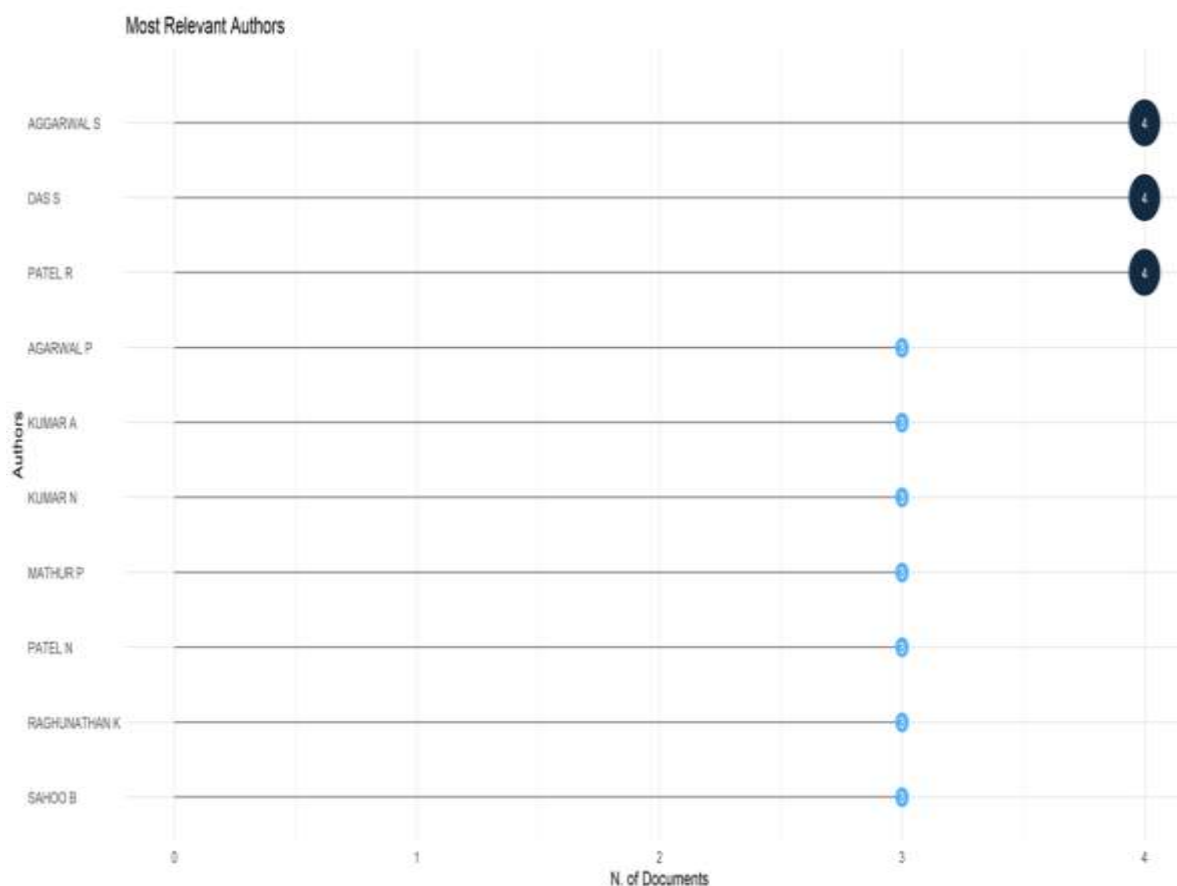


Figure 5

Most Cited Countries

This chart, titled “**Most Cited Countries,**” ranks the top ten countries based on the total number of citations their affiliated authors have received in the dataset up to 2025. Dominating the list is **India**, with a citation count of approximately **364**, significantly outpacing other nations. The **United States** follows in second place at around **230** citations, indicating substantial recognition for its scholarly work but still trailing India by a wide margin. In the middle range, the **Netherlands** has garnered roughly **90** citations, while **Poland** appears further down with fewer than **50**. Additional countries, including **Australia**, **Malaysia**, **Nepal**, **Germany**, **Ireland**, and the **United Kingdom**, show relatively modest citation counts in comparison.

India’s leading position here aligns with its dominance in both publication frequency and overall scholarly output observed elsewhere in the dataset. This suggests that not only are Indian researchers prolific in producing articles, but their work also resonates with the academic community, resulting in a higher citation impact ([Bhattarai & Shukla, 2025](#)). The United States’ strong showing, though lower than India’s, reflects a robust research ecosystem that continues to be influential globally.

For countries like the Netherlands, Poland, and Australia, their appearance on this chart underscores the recognition their research has received, despite having lower publication volumes compared to India and the USA. Smaller citation totals for nations such as Nepal and Malaysia may be attributed to more limited research infrastructure, smaller academic communities, or specialized niches. Nevertheless, their presence indicates ongoing efforts to engage with global scholarly dialogues.

Overall, the chart highlights a significant citation gap between India and the rest of the field, demonstrating India’s prominent role in the dataset’s thematic areas (Shambharkar et al., 2020). At the same time, it underscores the broader

international dimension of scientific collaboration, with multiple countries contributing to and influencing the citation landscape, albeit on a more modest scale than the clear frontrunners.

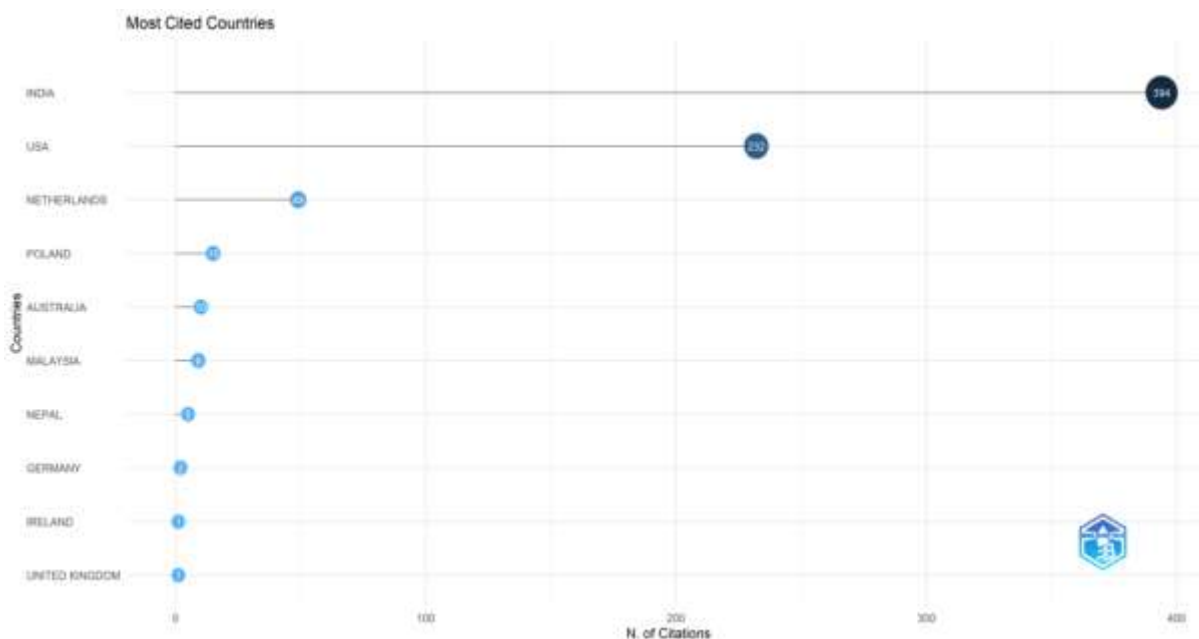


Figure 6

Most Relevant Words

This chart, titled “**Most Relevant Words**,” displays the top keywords identified in the dataset, measured by the frequency of their appearances. Topping the list is “**empowerment**,” occurring **23** times, suggesting a strong thematic focus on enabling individuals—particularly women or marginalized groups—to gain greater agency and resources. Next is “**India**,” with **18** occurrences, which aligns with the broader dataset’s findings that Indian research outputs dominate both in publication volume and citation impact. The recurring emphasis on India likely reflects a significant number of region-specific studies or contexts where empowerment initiatives are analysed.

In third place is “**women’s status**,” noted **14** times, indicating sustained attention to gender-related issues, possibly spanning economic, social, and cultural dimensions. Meanwhile, “**self-help**” appears **10** times, hinting at a body of literature focusing on self-improvement, community-based programs, or collective action models—often prominent in rural development schemes and microfinance initiatives. The appearance of “**poultry**” (8 times) and “**rural**” (6 times) further reinforces a research focus on agricultural livelihoods and community-based interventions in less urbanized settings.

Further down, “**female**” (4 occurrences), “**human**” (3), “**adult**” (2), and “**self-help group**” (1) add more context to the population demographics and thematic areas studied. The presence of “female,” “women’s status,” and “empowerment” together underscores a sustained interest in exploring women’s roles, rights, and developmental challenges, possibly within agricultural, economic, or societal frameworks (Bhattarai & Shukla, 2025). Likewise, “self-help group” complements “self-help” by indicating a collective aspect of personal or communal advancement, often tied to microfinance models or rural empowerment programs.

Overall, this chart paints a cohesive picture of a dataset heavily oriented toward gender issues, empowerment initiatives, and rural development in India. By highlighting terms like “empowerment,” “women’s status,” and “rural,” the keywords collectively point to an academic community invested in understanding and improving social conditions through both individual and collective strategies.

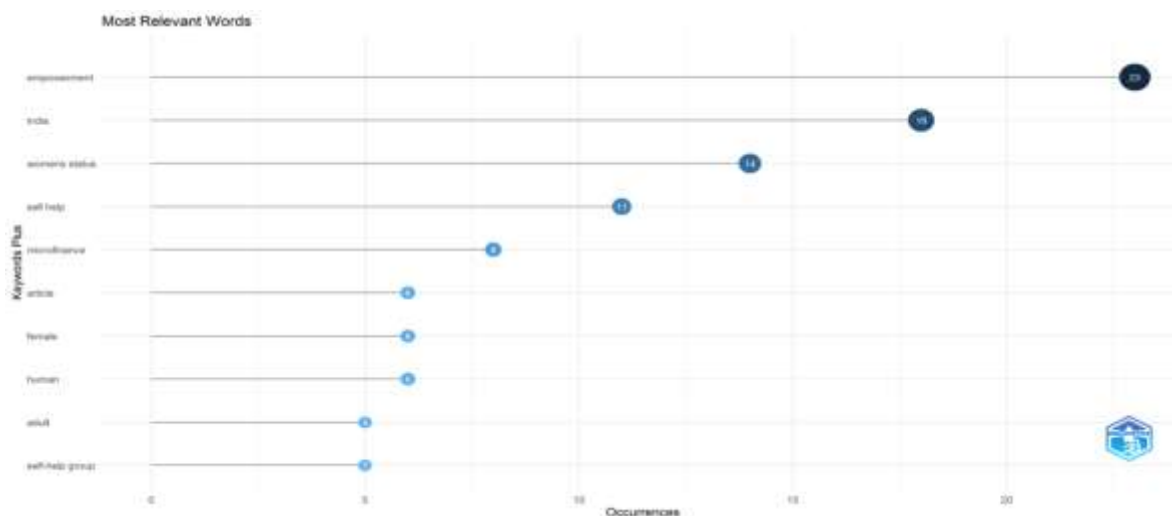


Figure 7

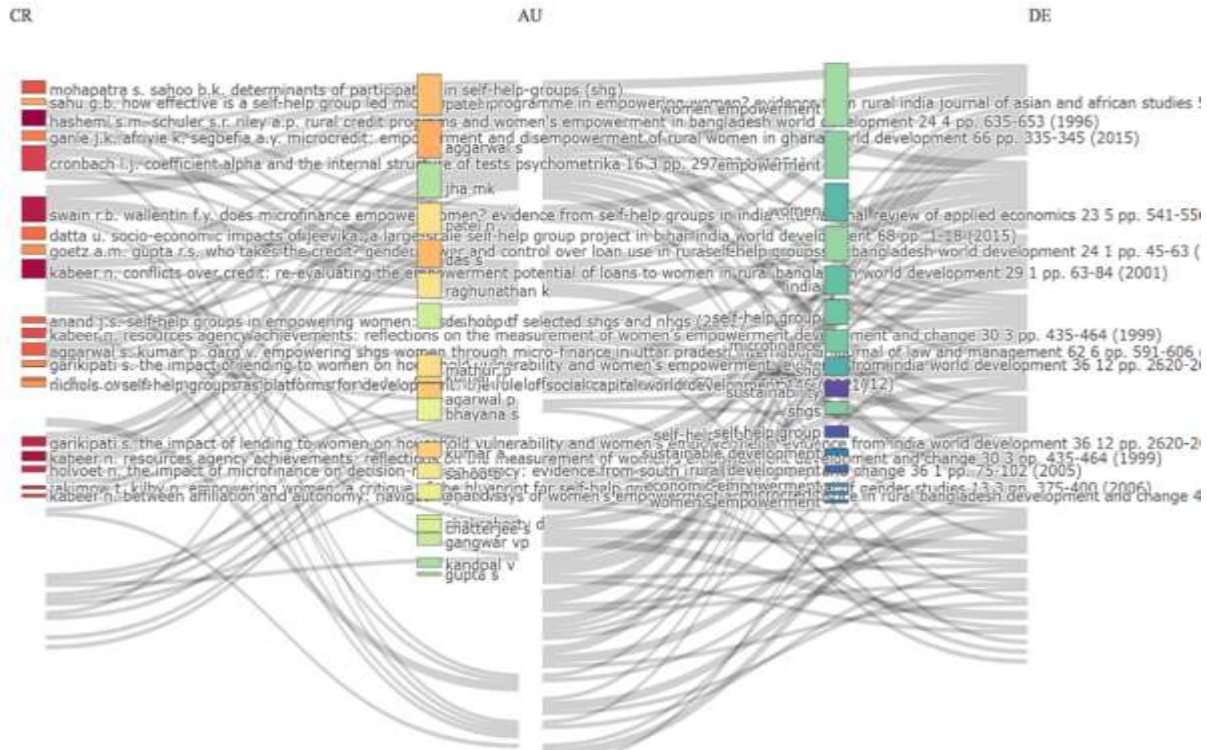
Three Field Plot

This **Three Field Plot** visualizes connections across three distinct fields in the dataset—commonly **Cited References (CR)**, **Authors (AU)**, and **Keywords/Descriptors (DE)**—revealing how publications, authors, and thematic focuses interrelate. Each colored rectangle in the diagram represents a specific item (e.g., a particular reference, author, or keyword), and the lines linking them illustrate the frequency or strength of their co-occurrence within the analyzed corpus.

In the **left column (CR)**, we see frequently cited works, such as studies examining self-help groups, women's empowerment, and rural development. These references appear multiple times across various publications, suggesting that foundational research on community-based initiatives and microfinance underpins much of the discourse. The **middle column (AU)** displays the authors contributing to these topics (Sud, 2013). Authors who frequently cite similar references cluster together, reflecting shared research interests. This indicates that a core group of researchers is driving the conversation on empowerment and self-help mechanisms, often building upon similar foundational literature.

On the **right column (DE)**, keywords or descriptors such as “rural India,” “empowering women,” and “self-help groups” stand out. Their strong links to multiple authors and cited references highlight the centrality of these themes. The recurring emphasis on empowerment, women's status, and rural contexts suggests a cohesive research focus, where social and economic development intersect. Lines connecting these descriptors back to references and authors illustrate the comprehensive network of scholarship, demonstrating how particular authors repeatedly employ specific keywords and cite the same foundational studies.

Overall, this plot paints a picture of a closely knit research community where authors, references, and topics reinforce one another. Studies on self-help groups, women's empowerment, and rural socio-economic development are especially prominent, with key authors repeatedly citing seminal works. By tracing these links, the Three Field Plot underscores the dataset's thematic core and reveals the collaborative nature of ongoing scholarly endeavours.



Discussion

Collaboration is evident, with 330 authors contributing and an average of 2.66 co-authors per document. However, international collaborations remain low at 9.79%, suggesting that most research efforts are confined to domestic institutions. The distribution of publication types—dominated by journal articles (110), followed by book chapters (16) and reviews (7)—demonstrates a preference for peer-reviewed journal dissemination over other formats.

The most common research themes revolve around empowerment, women's status, self-help groups, and rural development, particularly in India. The keyword analysis suggests a sustained focus on socio-economic issues and community-based interventions, which aligns with the prominent role of agricultural and development-focused institutions in the dataset.

The dataset underscores a stable yet uneven research trajectory, with significant contributions from Indian institutions. The findings highlight the need for enhanced international collaboration to diversify perspectives and increase global

research impact. While research production peaked in 2024, the sharp decline in 2025 raises concerns about sustainability and resource allocation. The emphasis on empowerment, rural development, and women's status suggests that research in this domain is addressing critical societal issues. Moving forward, strategic interventions, such as increased funding, stronger international networks, and institutional support, will be essential to maintaining and expanding the momentum of academic research.

Suggestions

- **Enhancing International Collaboration** – With only 9.79% of research being internationally co-authored, efforts should be made to increase global partnerships.
- **Boosting Citation Impact** – While the dataset shows moderate citations (6.217 per document), strategies like publishing in high-impact journals and cross-referencing can help improve academic reach.
- **Sustaining Research Output** – The sharp drop in publications in 2025 (from 20 in 2024 to 2) highlights the need for stable funding and institutional support.
- **Diversifying Research Topics** – The dominant themes revolve around rural development, empowerment, and agriculture. Expanding into interdisciplinary studies can enhance research impact.
- **Encouraging More Single-Authored Publications** – Since most papers are collaborative, more single-authored studies could foster individual contributions to the field.

Limitations

- **Lack of Annual Growth** – A 0% annual growth rate suggests stagnation in research output over the years.
- **Limited International Influence** – Despite India leading in publications, the research's global reach might be limited due to lower international collaboration.
- **Fluctuating Research Output** – The inconsistent number of publications over time shows instability in research production.
- **Dataset Scope** – The dataset covers only 143 documents from 116 sources, which may not comprehensively represent the field.
- **Skewed Geographical Representation** – India dominates the dataset, with 308 publications, while other countries like the USA (23) and Malaysia (5) lag significantly.

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Author Contribution

This manuscript was mutually authored by the authors.

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