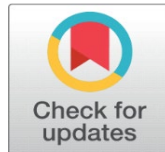
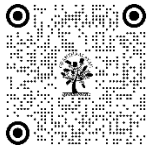


FORMAL AND INFORMAL WOMEN WORKERS: A SYSTEMATIC BIBLIOMETRIC EXPLORATION AND VISUALIZATION OF RESEARCH TRENDS AND THEMES

Tessymol George¹, Dr. Vipin Chandran K P²

¹Assistant Professor of Economics, EKNM Government College Elerithattu and Research Scholar in Economics, Dr Hermann Gundert Central Library, Kannur University, Kerala, India

²Associate Professor of Economics, Krishna Menon Memorial Government Women's College Kannur, Kerala, India.



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ABSTRACT

This bibliometric analysis explores the research landscape on formal and informal women workers, who engage in organized, regulated employment or unorganized, unregulated sectors, respectively, each characterized by differing levels of job security, social protection, and working conditions. The study employs Biblioshiny and VOSviewer software, using data from the Scopus bibliographic database, to map the academic progress in this domain. The analysis examines Annual Scientific Production, revealing trends in scholarly output over time, and identifies the most relevant authors and sources shaping this field. Geographical insights are provided through an evaluation of countries' scientific production and co-authorship networks, emphasizing the global distribution of research efforts. Trend topics showcase the evolution of thematic priorities, while the thematic map highlights central and emerging themes in the literature. Bibliographic coupling of documents uncovers intellectual connections between studies, and keyword co-occurrence analysis sheds light on the conceptual framework of the field. The study also investigates collaboration patterns, with a focus on co-authorship at the country level, offering insights into international partnerships. The findings provide a nuanced understanding of the research priorities and gaps in the study of formal and informal women workers. These insights aim to inform policymakers and researchers, facilitating targeted strategies for addressing issues faced by women in both employment sectors.

Keywords: Formal Women Workers, Informal Women Workers, Bibliometric Analysis, Biblioshiny, VOS viewer

1. INTRODUCTION

Women play a pivotal role in shaping the global workforce, contributing significantly to the economic and social fabric of societies (Boston & O'Grady, 2015; Pinchbeck, 2013; Ward, 1990). Despite their indispensable contributions, the nature of women's participation in the labor force often varies widely between formal and informal sectors (Pearson, 2007; Ward, 1990). This segmentation arises from socio-economic, cultural, and policy-related factors that influence access to education, skill development, and employment opportunities (Pinchbeck, 2013). Understanding the dynamics of formal and informal employment among women is essential to address existing inequalities and foster inclusive growth (Welle & Heilman, 2007; Williams & Gashi, 2022).

The formal workforce comprises women engaged in regulated and organized sectors, governed by legal frameworks that ensure contracts, social security, fixed wages, and benefits such as health insurance and maternity leave (Endo, 2005; Louzado et al., 2021). These women typically work in government agencies, corporate offices, or established industries with stable working conditions (Baig & Chang, 2020). However, despite the security and benefits, formal women workers often face challenges such as the gender pay gap, glass ceiling, and limited representation in leadership roles, reflecting persistent structural barriers to equality (Jubas & Butterwick, 2008).

Conversely, the informal workforce includes women working in unregulated and unorganized sectors such as domestic labor, street vending, agriculture, and small-scale industries (Birla, 2021; Bonner et al., 2018). Informal women workers are often excluded from labor laws and lack access to basic protections, making them vulnerable to exploitation, unsafe working conditions, and inconsistent incomes (Fourie, 2021; Kabeer et al., 2013; Rao, 1996). These workers play a critical role in supporting local economies and sustaining families, but their contributions are frequently undervalued and overlooked in national labor statistics and policy frameworks (Sivasubramanian et al., 2020; Wilson, 1998).

Addressing the disparity between formal and informal employment for women requires targeted policies and initiatives that promote skill development, financial inclusion, and access to social security (Endo, 2005; Ismail et al., 2022). Bridging the gap involves recognizing the value of informal work, formalizing sectors where feasible, and ensuring equitable treatment for all workers (Kabeer et al., 2013; Rao, 1996). A nuanced understanding of these sectors is crucial for empowering women to achieve economic independence and contribute fully to sustainable development (Wilson, 1998).

The division of the workforce into formal and informal sectors has long been a subject of socio-economic research, particularly concerning the participation of women (Bonner et al., 2018; Fourie, 2021). Women's roles in these sectors are influenced by various factors, including socio-cultural norms, educational attainment, and labor policies (Maziku et al., 2014). To deepen the understanding of this dynamic, bibliometric analysis offers a systematic approach to evaluating the academic literature on formal and informal women workers. By utilizing tools like Biblioshiny and VOSviewer, researchers can uncover trends, thematic structures, and collaboration networks in this domain, facilitating evidence-based policymaking and academic inquiry (Guleria & Kaur, 2021; Husain & Mustafa, 2023; Kumar et al., 2023).

Biblioshiny, a web-based application in the R programming environment, enables researchers to perform comprehensive bibliometric analyses, such as citation analysis, keyword trends, and thematic mapping (Fahamsyah et al., 2023; Komperda, 2017; Racine, 2012). Its user-friendly interface provides insights into the evolution of research on formal and informal women workers, highlighting the growth of publications, geographic distribution of studies, and influential authors and institutions (Huang et al., 2021; Thangavel & Chandra, 2023). By analyzing the bibliometric data, it becomes evident how the discourse has shifted over time to address emerging issues like wage disparities, social protection, and empowerment strategies (Waghmare, 2021).

VOSviewer, on the other hand, is particularly effective for creating visualization networks of co-authorship, citation relationships, and keyword co-occurrences (Abbas et al., 2021; Nandiyanto & Al Husaeni, 2022; Van Eck & Waltman, 2009). Through these visualizations, researchers can identify clusters of research themes and the interconnections between them (Gupta & Chakravarty, 2021; Husain & Mustafa, 2023). In the context of formal and informal women workers, VOSviewer reveals dominant research areas, such as labor rights, gender equity, and policy impacts, while also highlighting gaps in the literature that warrant further investigation. Together, Biblioshiny and VOSviewer offer complementary insights, advancing a holistic understanding of the challenges and opportunities faced by women workers in both sectors.

2. MATERIALS AND METHODS

This study employs a bibliometric analysis approach to explore the academic literature on formal and informal women workers. Bibliographic data were collected from the Scopus database, known for its extensive coverage of scholarly publications (Archambault et al., 2009; Harzing & Alakangas, 2016; Kawuki et al., 2020). The query used for data retrieval was: TITLE-ABS-KEY (formal) OR TITLE-ABS-KEY (informal) AND TITLE-ABS-KEY ("Women Worker"). The search was conducted without restrictions on language, and the dataset included peer-reviewed journal articles, book chapters, and conference papers to ensure comprehensive coverage of the topic. A total of 545 records were retrieved, spanning from 1989 to 2023, representing contributions from 308 different sources. The retrieved data underwent a meticulous screening process to remove duplicates and ensure accuracy. The refined dataset was saved as a "CSV" file format, which was then imported into bibliometric analysis software for further processing using VOSviewer version, and Biblioshiny software.

3. RESULTS AND FINDINGS

3.1. MAIN INFORMATION OF THE INVESTIGATION

Table 1 presents a comprehensive overview of the bibliometric analysis on formal and informal women workers covering 52 years (1971–2023). It includes 231 documents sourced from 169 journals, books, and other platforms, with an annual growth rate of 5.48%. The dataset reflects a balance of historical and contemporary studies, with an average

document age of 11.9 years and 12.79 citations per document, highlighting the moderate impact of the research. The documents are supported by 7,624 references, demonstrating extensive scholarly input. Keywords Plus (636) and Author Keywords (535) indicate a rich diversity of topics explored. The 363 contributing authors include 123 single-authored publications, with 1.75 co-authors per document and 10.39% international co-authorship, showing moderate collaboration levels. Most documents are journal articles (192), with book chapters (35) and conference papers (4) representing smaller portions. This analysis reveals a steadily growing and diverse research landscape, with a mix of individual and collaborative efforts addressing formal and informal women workers' issues.

Table 1. Main information of the investigation

| Description | Results |
|---------------------------------|-----------|
| MAIN INFORMATION ABOUT DATA | |
| Timespan | 1971:2023 |
| Sources (Journals, Books, etc) | 169 |
| Documents | 231 |
| Annual Growth Rate % | 5.48 |
| Document Average Age | 11.9 |
| Average citations per doc | 12.79 |
| References | 7624 |
| DOCUMENT CONTENTS | |
| Keywords Plus (ID) | 636 |
| Author's Keywords (DE) | 535 |
| AUTHORS | |
| Authors | 363 |
| Authors of single-authored docs | 123 |
| AUTHORS COLLABORATION | |
| Single-authored docs | 133 |
| Co-Authors per Doc | 1.75 |
| International co-authorships % | 10.39 |
| DOCUMENT TYPES | |
| article | 192 |
| book chapter | 35 |
| conference paper | 4 |

3.2. ANNUAL SCIENTIFIC PRODUCTIONS

Figure 1 illustrates the annual scientific production, reflecting the evolution of research on formal and informal women workers from 1971 to 2023. Initially, the number of publications was sparse, with one article in 1971, 1977, 1981, and 1982, and minimal contributions in the subsequent years. From 1989 onward, there was a gradual but steady increase in publication frequency, with noticeable growth in the 1990s and early 2000s. For example, the year 1999 saw six publications, a significant jump compared to earlier years. A more consistent upward trend began in the 2010s, with the number of articles per year increasing steadily. Peaks were observed in 2011 (9 articles), 2014 (10 articles), and 2020 (12 articles), reflecting heightened interest and scholarly output. The most significant surge occurred in 2021, with a record 30 articles published, showcasing a sharp rise in academic focus on this topic. This increasing trend highlights the growing recognition of formal and informal women workers as a critical area of research. The consistent rise in recent years, especially after 2020, could be attributed to heightened awareness of gender disparities in the workforce, influenced by global socio-economic shifts and increased advocacy for women's rights in labor markets.

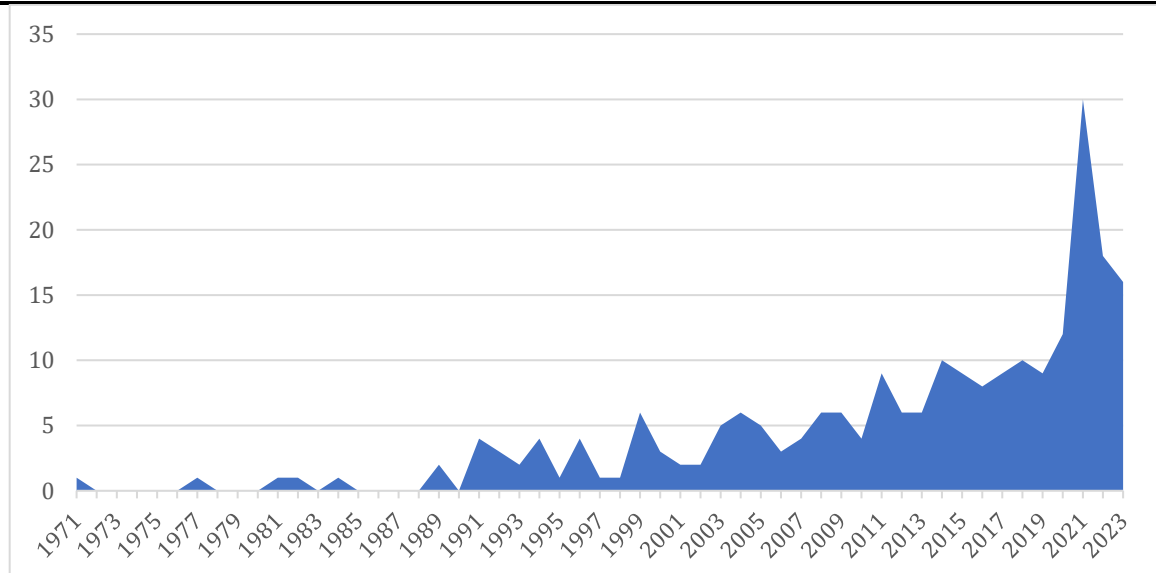


Figure 1. Annual scientific production

3.3. MOST RELEVANT AUTHORS

Figure 2 highlights the most relevant authors contributing to the research on formal and informal women workers based on the number of documents published. The authors Haskins, Lyn and Horwood, Christiane are the most prominent, each contributing five documents, signifying their substantial involvement and expertise in this field. Following them are Luthuli, Silondile and Rollins, Nigel, each with four documents, demonstrating consistent contributions to the research area. Other significant contributors include Hancock, Peter, Hinton, Rachael, and Khurana, Sakshi, each authoring three documents. Authors such as Ara, Shamim, Boris, E., and Chen, Martha have also made valuable contributions, with two documents each. This distribution reflects a mix of highly active researchers driving the discourse and a broader pool of contributors enriching the field. The presence of multiple authors with several publications indicates ongoing collaborative efforts and a growing interest in addressing issues related to formal and informal women workers.

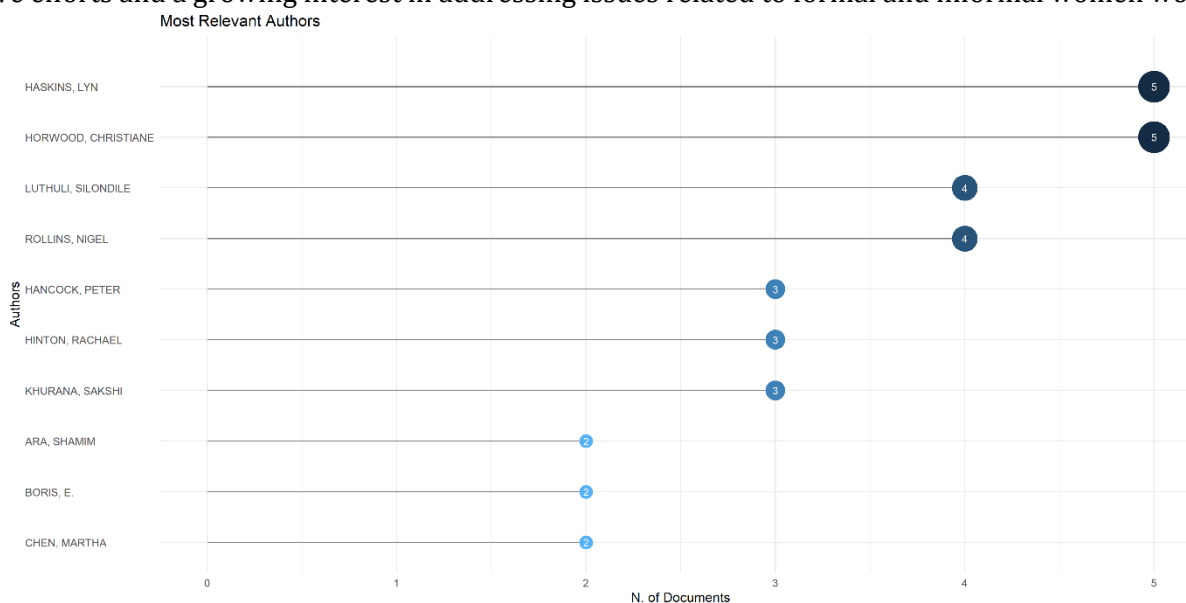


Figure 2. Most relevant authors

3.4. MOST RELEVANT SOURCES

The table highlights the academic journals that have significantly contributed to the literature on formal and informal women workers. The Indian Journal of Labour Economics emerges as the most prolific source, with 14 articles, underscoring its prominent role in disseminating research focused on labor economics and issues related to women

workers in both formal and informal sectors. Gender and Development, with 6 articles, emphasizes gender-focused development research, reflecting its contribution to understanding the intersection of gender and employment. Both the International Labour Review and World Development, each with 5 articles, provide insights into global labor policies and developmental aspects, showcasing the international relevance of the topic. Feminist Economics follows with 4 articles, offering critical feminist perspectives on economic systems and women's roles within them. Journals like the Asian Journal of Women's Studies, BMC Women's Health, Gender, Technology and Development, Gender, Work and Organization, and the Indian Journal of Gender Studies, each contributing 3 articles, highlight the diverse interdisciplinary approaches to studying women workers. These sources span topics from regional studies in Asia, gendered impacts of technology, organizational challenges, and broader gender issues, indicating the wide range of academic interest in the subject. This distribution underscores the multidimensional nature of research on women workers, bridging economics, development, health, technology, and organizational studies, with particular attention to regional and global perspectives.

Table 2. Most relevant sources

| Sources | Articles |
|------------------------------------|----------|
| INDIAN JOURNAL OF LABOUR ECONOMICS | 14 |
| GENDER AND DEVELOPMENT | 6 |
| INTERNATIONAL LABOUR REVIEW | 5 |
| WORLD DEVELOPMENT | 5 |
| FEMINIST ECONOMICS | 4 |
| ASIAN JOURNAL OF WOMEN'S STUDIES | 3 |
| BMC WOMEN'S HEALTH | 3 |
| GENDER, TECHNOLOGY AND DEVELOPMENT | 3 |
| GENDER, WORK AND ORGANIZATION | 3 |
| INDIAN JOURNAL OF GENDER STUDIES | 3 |

3.5. COUNTRIES' SCIENTIFIC PRODUCTION

Figure 3 illustrates the distribution of scientific production on formal and informal women workers by country. The global map visualization highlights the geographical concentration of research, with darker shades indicating higher contributions. India leads with 113 documents, demonstrating a dominant focus and significant scholarly contributions to the topic, likely driven by the prominence of informal labor in its economy. The USA ranks second with 48 documents, reflecting its advanced academic and policy focus on labor issues. South Africa (33 documents) and the UK (30 documents) follow, underscoring the relevance of this research in countries with unique labor challenges and robust academic frameworks. Other notable contributors include Australia (19 documents), Colombia (13 documents), Canada (11 documents), Bangladesh (10 documents), Brazil (9 documents), and China (9 documents). These countries represent diverse socio-economic and cultural contexts where the formal and informal labor dynamics of women workers are crucially examined. This pattern emphasizes that research is heavily concentrated in specific regions, particularly in Asia, North America, and Africa, while being comparatively sparse in other parts of the world.

Country Scientific Production

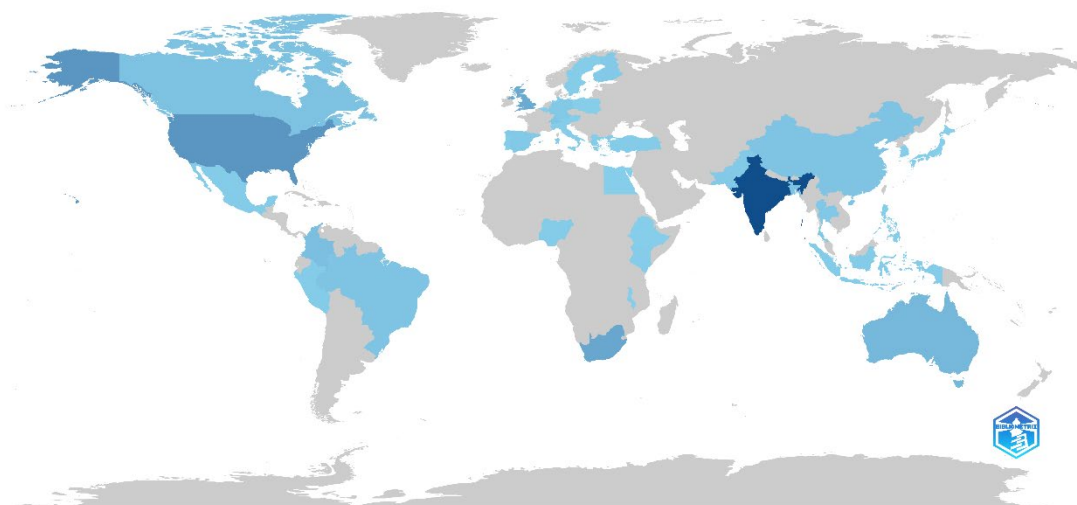


Figure 3. Countries' Scientific Production

3.6. TREND TOPICS

Figure 4 presents the trending topics, highlighting key themes and their frequency over time. The prominence of COVID-19 as a recent and significant topic underscores the pandemic's profound impact on women workers, especially in informal sectors. Persistent themes such as working women, employment, informal economy, and gender demonstrate their foundational relevance to the discourse. Geographical terms like South Africa, India, and Africa reflect region-specific research focusing on informal economies and gendered labor challenges. Topics like social reproduction, domestic work, and migration emphasize critical areas of study, including unpaid labor, household dynamics, and mobility patterns affecting women workers. Broader concepts like globalization and work remain steady, illustrating their continued importance in contextualizing labor trends. Over time, the research landscape has diversified, addressing emerging issues like the pandemic while sustaining focus on traditional labor and gender-related challenges.

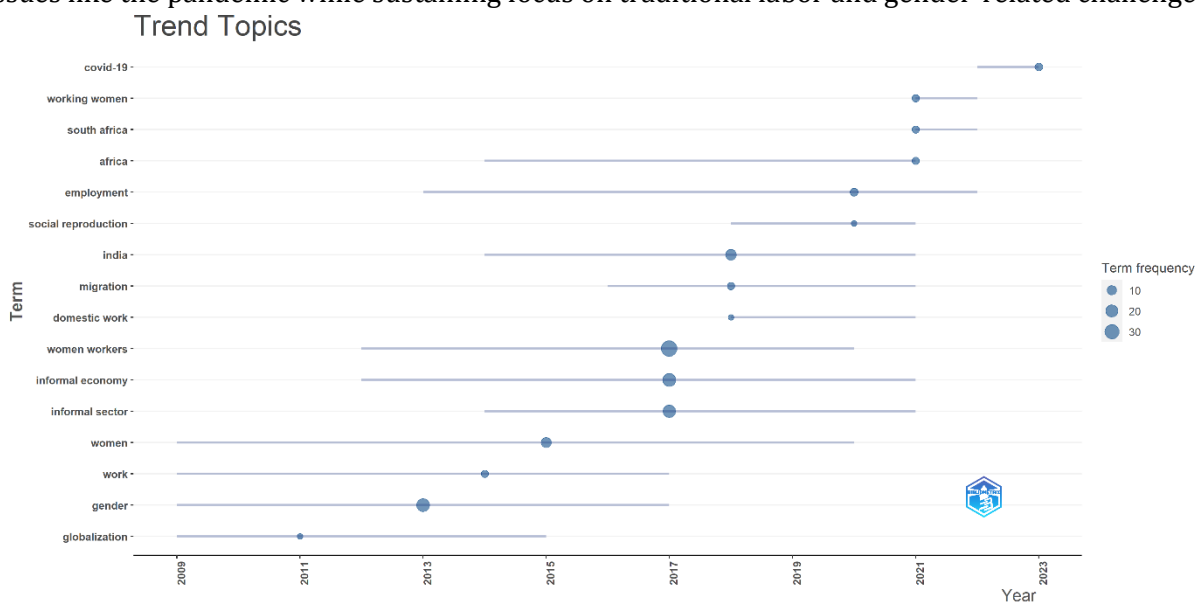


Figure 4. Trending topics in the realm of research

3.7. THEMATIC MAP

Figure 5 presents a thematic map categorizing into four quadrants based on development degree (density) and relevance degree (centrality). The Motor Themes, located in the top-right quadrant, include topics like informal economy, Africa,

South Africa, domestic work, social reproduction, and patriarchy. These themes are both well-developed and highly relevant, indicating their critical role in advancing research on women workers. They represent areas with significant academic interest and robust frameworks that drive scholarly discourse, making them pivotal to the field.

The Basic Themes quadrant, situated in the bottom-right, comprises foundational topics such as women workers, informal sector, India, employment, codes of conduct, and equal opportunities. These themes are highly relevant but less developed compared to Motor Themes. Their centrality highlights their importance as the core framework for understanding women's labor in both formal and informal sectors. However, their relatively low density suggests opportunities for deeper exploration and further development to strengthen their academic and practical contributions. In the Niche Themes quadrant, located in the top-left, topics like child care, data collecting, and labor force participation are identified. These themes are highly developed but have low centrality, indicating their specialized nature and narrower focus. While these themes do not have a broad impact on the field, they address specific, critical aspects of women's labor dynamics and could serve as valuable components in interdisciplinary studies or niche applications. Finally, the Emerging or Declining Themes quadrant in the bottom-left includes topics like export processing zones and Sri Lanka, which have low density and centrality. These themes may represent areas of declining academic interest or underexplored emerging topics. Their positioning suggests they require further investigation to determine their potential relevance and significance. This thematic map provides a comprehensive view of the research landscape, showcasing established areas of strength while also identifying gaps and opportunities for future studies in the field of formal and informal women workers.

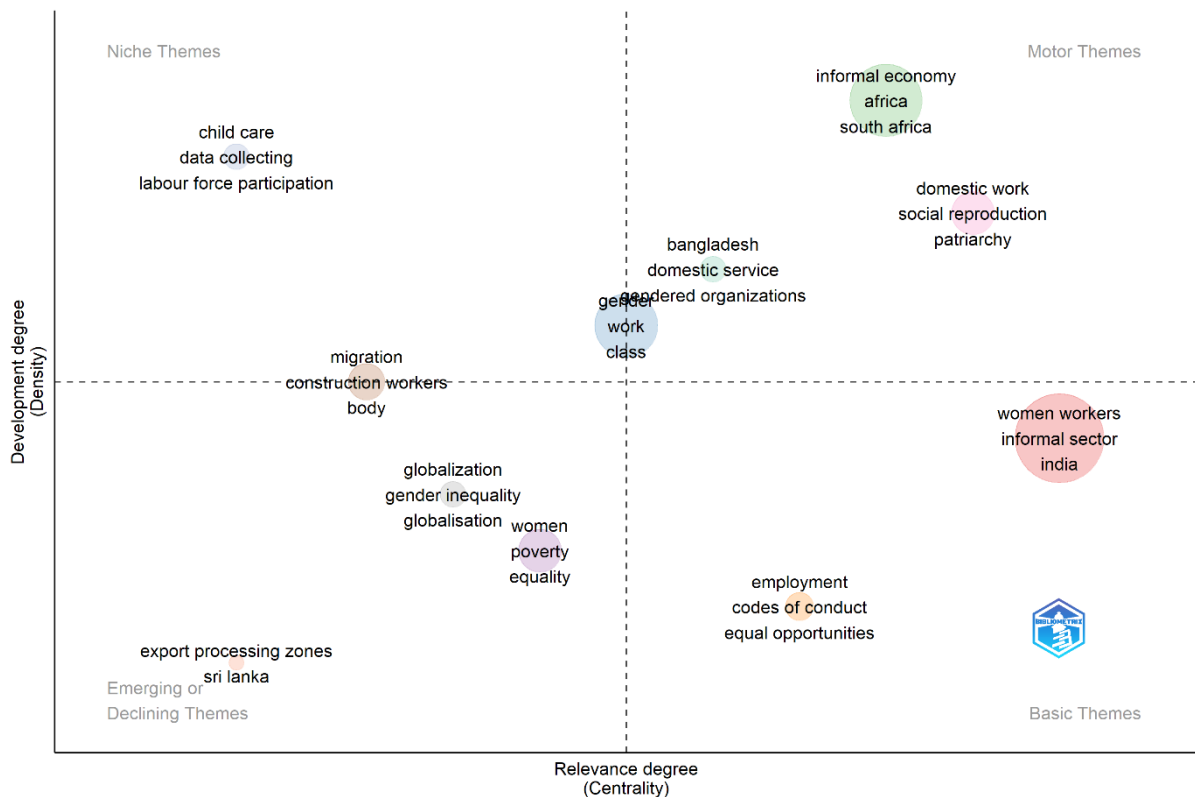


Figure 5. Thematic visualisation of author keywords

3.8. BIBLIOGRAPHIC COUPLING OF DOCUMENTS

Figure 6 presents the bibliographic coupling network of documents, highlighting a robust scholarly discourse in research on formal and informal women workers. The analysis applies a minimum citation threshold of five, which allows for identifying influential works. Out of 231 documents, 112 meet the threshold, and the resulting network consists of 66 items grouped into 10 clusters. These clusters represent groups of documents with overlapping references, indicating shared research themes or methodological approaches. The central position and larger size of nodes such as Barrientos (2003) and Chen (1999) signify their high influence and strong coupling with other documents in the network. These works likely serve as foundational studies or key references for subsequent research. The presence of other notable

nodes, such as Hite (2005), Anjali Anwar (2021), and Singh (2022), indicates recent contributions that are beginning to influence the discourse significantly, suggesting evolving perspectives and expanding areas of focus within the field. The interconnected nature of the clusters demonstrates the multidimensionality of research topics, including themes such as labor dynamics, gender inequality, domestic work, and informal economies. For instance, nodes such as Ali (2016) and Kamath (2017) suggest a focus on regional or sectoral studies, while the coupling of Schneider (1991) with more recent works like Perry (2020) reflects continuity in addressing long-standing issues alongside contemporary developments. Overall, the network highlights both the foundational works that anchor the field and emerging studies that expand its scope. This bibliographic coupling analysis underscores the vibrant and interconnected nature of scholarly research on formal and informal women workers, while also identifying key studies that can guide future exploration.

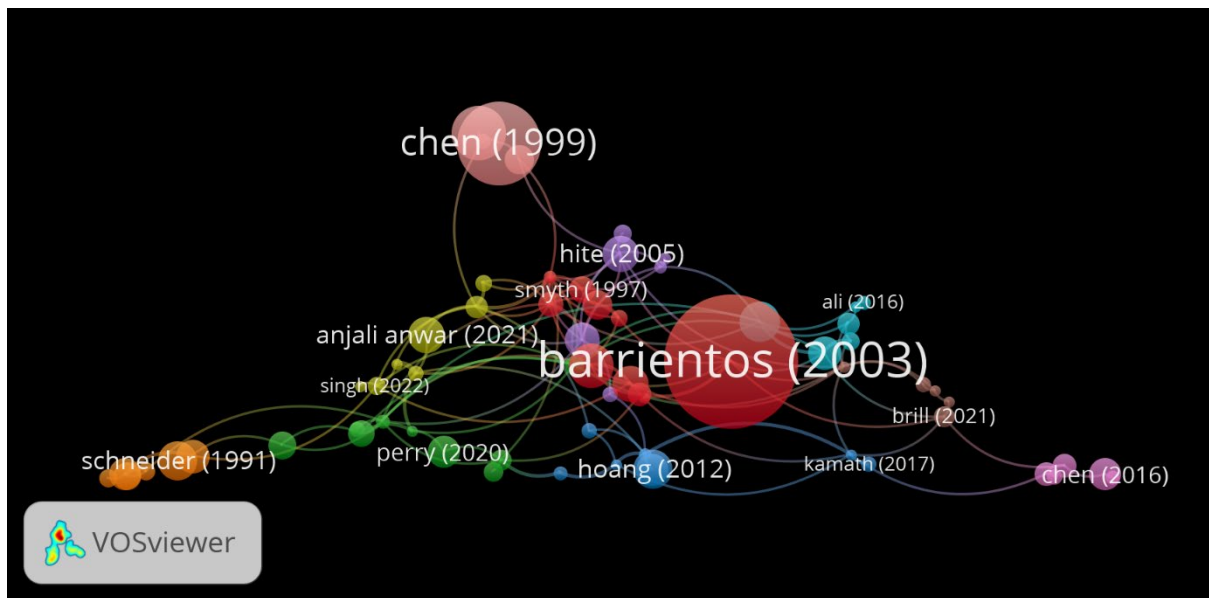


Figure 6. Bibliographic coupling of documents

3.9. CO-OCCURRENCE OF AUTHOR KEYWORDS

Figure 7 illustrates the co-occurrence network of author keywords in research on formal and informal women workers, providing a detailed visualization of the interrelation between thematic areas. Using a minimum occurrence threshold of two, the network includes 91 out of 535 keywords grouped into 12 clusters of varying sizes and colors. The largest cluster, Cluster 1, comprises 16 keywords, indicating a dominant thematic focus on broad topics such as "informal economy," "women workers," and "gender." These foundational themes highlight the centrality of gendered labor dynamics and informal employment within the discourse, forming the backbone of scholarly research in this field.

The mid-sized clusters, such as Cluster 2 (13 keywords) and Clusters 3 to 5 (10-12 keywords each), delve into more specific areas of focus. These clusters likely cover themes such as "domestic work," "social reproduction," "migration," and "globalization." These interconnected topics demonstrate the research community's interest in exploring how socio-economic factors, global trends, and regional differences shape the experiences of women workers. These clusters provide depth to the overarching narrative, reflecting a balance between broad thematic coverage and detailed examinations of specific issues.

Smaller clusters, such as Clusters 6 to 8 (5-9 keywords) and the niche Clusters 9 to 12 (2-3 keywords each), point to emerging or highly specialized themes. These might include keywords related to policy impacts, childcare, labor participation, or region-specific studies (e.g., South Asia or Africa). These clusters signify areas that are either underexplored or are gaining traction in academic research. Together, the network showcases a well-distributed and interconnected set of keywords, reflecting the diversity and richness of the field while identifying both well-established and evolving areas of focus. This analysis provides a roadmap for future research by highlighting key trends and gaps in the literature.

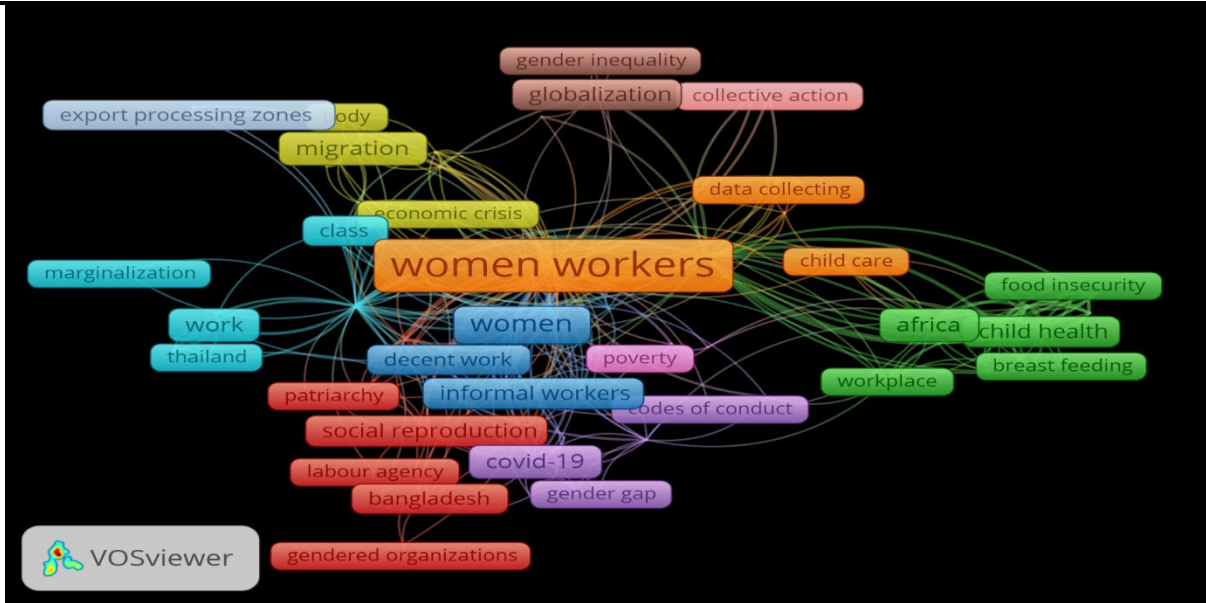


Figure 7. Co-occurrence of author keywords

3.10. COUNTRIES COLLABORATIONS

Figure 8 visualizes the co-authorship network among countries contributing to research on formal and informal women workers, highlighting collaborative relationships. The United States emerges as a central hub with strong connections to countries like India, Canada, and Australia, reflecting its pivotal role in global research partnerships. India also features prominently, underscoring its significant contributions, particularly on issues related to informal labor, which are highly relevant to its socio-economic context. Regional collaborations, such as those between Thailand and Belgium or China and Greece, indicate specific shared research interests or localized focuses. This network demonstrates the international nature of the research field, with both broad and niche collaborations enriching the global academic discourse on formal and informal women workers.

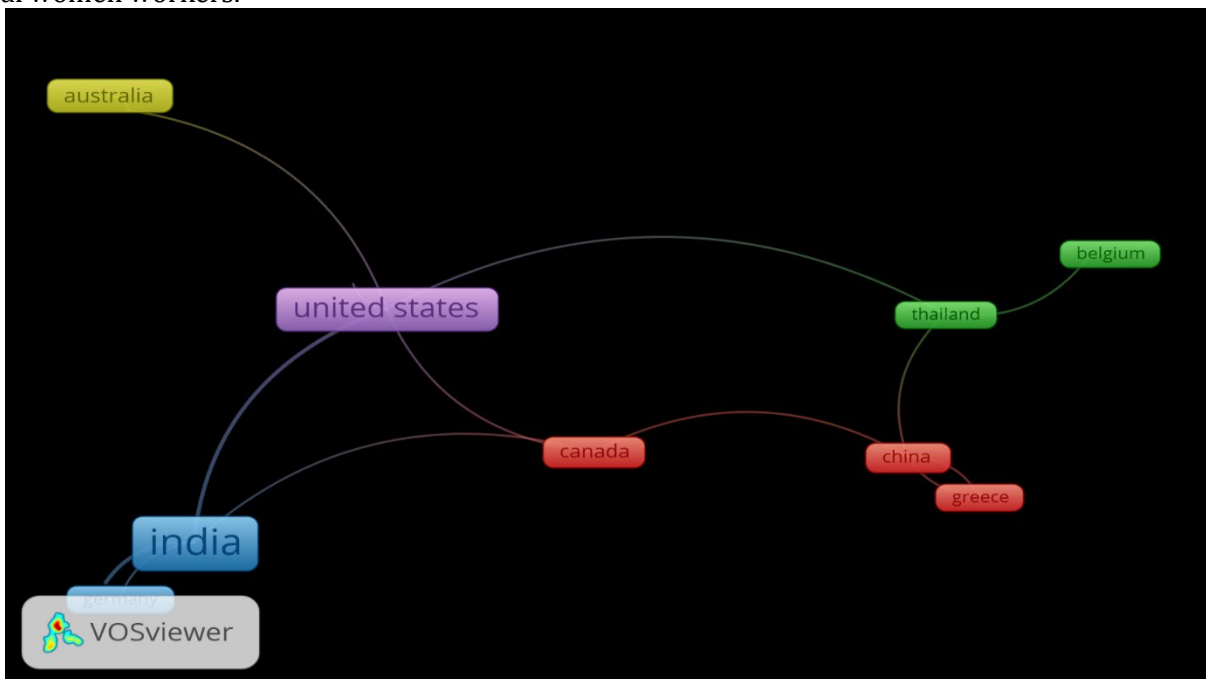


Figure 7. Countries collaborations

4. DISCUSSIONS

The bibliometric analysis of formal and informal women workers reveals several significant findings that reflect the research trends, thematic developments, and international collaborations in this field. The annual scientific production has shown a steady increase, with a notable surge in recent years, particularly post-2020. This growth highlights the increasing recognition of gendered labor issues, influenced by global socio-economic changes and events like the COVID-19 pandemic. Research remains diverse, with contributions spanning regions like India, the United States, and South Africa, and covering broad themes such as informal economies, employment, and gender equity.

Key authors and journals have been pivotal in advancing this discourse. Authors like Barrientos (2003) and Chen (1999) are central to the bibliographic coupling network, serving as foundational references for further studies. Journals such as the *Indian Journal of Labour Economics and Gender and Development* indicate the interdisciplinary nature of this field, addressing economic, gendered, and developmental perspectives. However, despite these strong contributions, collaboration among authors and institutions is moderate, with international co-authorship at only 10.39%, suggesting potential for greater global engagement.

Thematic analysis reveals well-established topics such as informal economies and domestic work as motor themes driving the research field. Basic themes like women workers and equal opportunities remain foundational yet underdeveloped, presenting opportunities for deeper exploration. Niche themes, including childcare and labor participation, and emerging or declining themes like export processing zones, indicate specialized or underexplored areas. These findings point to gaps in literature that require targeted research, particularly in policy development, regional studies, and intersectional analyses of women's labor experiences.

Practical implications from these findings suggest a need for policy interventions addressing gender disparities in labor, especially in informal sectors. The prominence of topics like social reproduction and migration highlights the importance of creating inclusive labor policies that consider unpaid work and mobility challenges. Additionally, the international collaboration map underscores the need for stronger partnerships between developing and developed countries to exchange knowledge and address global gendered labor issues effectively. Future research should aim to bridge gaps by exploring underdeveloped themes, fostering international collaboration, and integrating interdisciplinary approaches to tackle the complexities of formal and informal women workers.

5. CONCLUSION

The bibliometric analysis of formal and informal women workers highlights a steadily growing research landscape, with significant contributions from regions like India, the United States, and South Africa. Key themes such as informal economies, gender dynamics, and domestic work dominate the discourse, while niche areas like childcare and emerging topics like export processing zones remain underexplored. The findings reveal moderate levels of international collaboration, indicating potential for stronger global partnerships to address shared challenges. To advance research and practice in this field, three recommendations are proposed: first, foster greater interdisciplinary research to explore underdeveloped themes such as migration and social reproduction; second, encourage international collaborations between developed and developing countries to exchange best practices and insights; and third, integrate findings into policy frameworks to address gender disparities, particularly in informal sectors where protections are lacking. Emphasizing these areas can contribute to a more inclusive understanding of women's labor experiences and inform actionable solutions for equitable workforce development. By addressing gaps and leveraging global partnerships, the field can advance toward fostering economic empowerment and social equity for women workers worldwide.

CONFLICT OF INTERESTS

None.

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REFERENCES

- Abbas, A. F., Jusoh, A., Masod, A., & Ali, J. (2021). A Bibliometric Analysis of Publications on Social Media Influencers Using Vosviewer. *Journal of Theoretical and Applied Information Technology*, 99(23), 5662–5676.
- Archambault, É., Campbell, D., Gingras, Y., & Larivière, V. (2009). Comparing bibliometric statistics obtained from the Web of Science and Scopus. *Journal of the American Society for Information Science and Technology*, 60(7), 1320–1326.
- Baig, R. B., & Chang, C.-W. (2020). Formal and informal social support systems for migrant domestic workers. *American Behavioral Scientist*, 64(6), 784–801.
- Birla, B. (2021). Women Workers in Informal Economy and Aging Concerns. In *Older Women and Well-Being: A Global Perspective* (pp. 359–377). Scopus. https://doi.org/10.1007/978-981-16-4605-8_19
- Bonner, C., Horn, P., & Jhabvala, R. (2018). Informal Women Workers Open ilo Doors through Transnational Organizing, 1980s-2010s. In *Studies in Global Social History* (Vol. 32, pp. 176–201). Scopus. https://doi.org/10.1163/9789004360433_009
- Boston, S., & O'Grady, F. (2015). *Women workers and the trade unions*. Lawrence & Wishart.
- Endo, T. (2005). From Formal to Informal? Global Restructuring and the Life Course of Women Workers in Thailand. *Gender, Technology and Development*, 9(3), 347–372. Scopus. <https://doi.org/10.1177/097185240500900302>
- Fahamsyah, M. H., Mawardi, I., Laila, N., & Shabbir, M. S. (2023). Global Islamic Banking Development: A Review and Bibliometric Analysis Using R-Biblioshiny Application. *Muqtasid: Jurnal Ekonomi Dan Perbankan Syariah*, 14(1), 69–92.
- Fourie, E. (2021). Social protection instruments and women workers in the informal economy: A Southern African perspective. *Potchefstroom Electronic Law Journal*, 24, 1–41. Scopus. <https://doi.org/10.17159/1727-3781/2021/V24I0A8890>
- Guleria, D., & Kaur, G. (2021). Bibliometric analysis of ecopreneurship using VOSviewer and RStudio Bibliometrix, 1989–2019. *Library Hi Tech*, 39(4), 1001–1024. <https://doi.org/10.1108/LHT-09-2020-0218>
- Gupta, N., & Chakravarty, R. (2021). Research visualization of Indian LIS research using VOSviewer and Bibliometrix. *Library Hi Tech News*, 38(8), 6–8.
- Harzing, A.-W., & Alakangas, S. (2016). Google Scholar, Scopus and the Web of Science: A longitudinal and cross-disciplinary comparison. *Scientometrics*, 106, 787–804.
- Huang, J.-H., Duan, X.-Y., He, F.-F., Wang, G.-J., & Hu, X.-Y. (2021). A historical review and Bibliometric analysis of research on Weak measurement research over the past decades based on Biblioshiny. *arXiv Preprint arXiv:2108.11375*.
- Husain, F., & Mustafa, M. S. (2023). A Decade of Islamic Banking Research: Bibliometric Review with Biblioshiny and Vosviewer. *Jambura Science of Management*, 5(2), 67–85.
- Ismail, G., Valdivia, M., & Orleans Reed, S. (2022). COVID-19 impact and recovery for women informal workers—a view from 2021. *Gender and Development*, 30(1–2), 115–143. Scopus. <https://doi.org/10.1080/13552074.2022.2066809>
- Jubas, K., & Butterwick, S. (2008). Hard/soft, formal/informal, work/learning: Tenuous/persistent binaries in the knowledge-based society. *Journal of Workplace Learning*, 20(7/8), 514–525.
- Kabeer, N., Milward, K., & Sudarshan, R. (2013). Organising women workers in the informal economy. *Gender and Development*, 21(2), 249–263. Scopus. <https://doi.org/10.1080/13552074.2013.802145>
- Kawuki, J., Yu, X., & Musa, T. H. (2020). Bibliometric Analysis of Ebola Research Indexed in Web of Science and Scopus (2010-2020). In *BioMed Research International* (Vol. 2020). <https://doi.org/10.1155/2020/5476567>
- Komperda, R. (2017). Likert-type survey data analysis with R and RStudio. In *ACS Symposium Series* (Vol. 1260, pp. 91–116). <https://doi.org/10.1021/bk-2017-1260.ch007>
- Kumar, D., Shandilya, A. K., & Choudhuri, S. (2023). Artificial Intelligence-Enabled Bibliometric Analysis in Tourism and Hospitality Using Biblioshiny and VOSviewer Software. In *AI-Centric Modeling and Analytics* (pp. 260–291). CRC Press.
- Louzado, J. A., Lopes Cortes, M., Galvão Oliveira, M., Moraes Bezerra, V., Mistro, S., Souto de Medeiros, D., Arruda Soares, D., Oliveira Silva, K., Nicolaevna Kochergin, C., & Honorato dos Santos de Carvalho, V. C. (2021). Gender differences in the quality of life of formal workers. *International Journal of Environmental Research and Public Health*, 18(11), 5951.
- Maziku, P., Majenga, A., & Mashenene, G. R. (2014). *The effects of socio-cultural factors on the performance of women small and medium enterprises in Tanzania*.
- Nandiyanto, A. B. D., & Al Husaeni, D. F. (2022). Bibliometric analysis of engineering research using vosviewer indexed by google scholar. *Journal of Engineering Science and Technology*, 17(2), 883–894.

- Pearson, R. (2007). Beyond women workers: Gendering CSR. *Third World Quarterly*, 28(4), 731–749.
- Pinchbeck, I. (2013). *Women workers in the Industrial Revolution*. Routledge.
- Racine, J. S. (2012). *RStudio: A platform-independent IDE for R and Sweave*. JSTOR.
- Rao, N. (1996). Empowerment through organisation: Women workers in the informal sector. *Indian Journal of Gender Studies*, 3(2), 171–197. Scopus. <https://doi.org/10.1177/097152159600300203>
- Sivasubramanian, K., Pushpa, A., Raju, V., & Kumar, M. D. (2020). Women and informal employment: An analysis of socio-economic and health conditions of women home-based workers in Chennai, India. *Journal of International Women's Studies*, 21(5), 97–106. Scopus.
- Thangavel, P., & Chandra, B. (2023). Two Decades of M-Commerce Consumer Research: A Bibliometric Analysis Using R Biblioshiny. *Sustainability*, 15(15), 11835. <https://doi.org/10.3390/su151511835>
- Van Eck, N. J., & Waltman, L. (2009). VOSviewer: A computer program for bibliometric mapping. In *12th International Conference on Scientometrics and Informetrics, ISSI 2009* (pp. 886–897). <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84901992309&partnerID=40&md5=2b19eafa3759e96b197c3ec7535a731f>
- Waghmare, P. (2021). Bibliometric Analysis of Global Research Trends on E-Waste Management from Scopus Database seen through Biblioshiny. In *Library Philosophy and Practice* (Vol. 2021, pp. 1–16).
- Ward, K. B. (1990). *Women workers and global restructuring*. Cornell University Press.
- Welle, B., & Heilman, M. E. (2007). Formal and informal discrimination against women at work. *Research in Social Issues in Management: Managing Social and Ethical Issues in Organizations*, 229–252.
- Williams, C., & Gashi, A. (2022). Evaluating the wage differential between the formal and informal economy: A gender perspective. *Journal of Economic Studies*, 49(4), 735–750.
- Wilson, T. D. (1998). Approaches to understanding the position of women workers in the informal sector. *Latin American Perspectives*, 25(2), 105–119. Scopus. <https://doi.org/10.1177/0094582X9802500206>