

Mapping the Intellectual Structure and Thematic Evolution of Women's Empowerment Research at the Agriculture Tourism Nexus in Indonesia

Indra Irjani Dewijanti¹, Putrawan Habibi^{2*}

¹Faculty of Agriculture, Department of Agribusiness, Universitas Winaya Mukti, Sumedang, Indonesia

²Department of Education and Learning Technology, College of Education, National Tsing Hua University, Hsinchu, Taiwan

ABSTRACT

Research on women's empowerment at the intersection of agriculture and tourism in Indonesia has expanded across multiple disciplinary domains, yet its intellectual structure and thematic evolution remain unclear. This study maps the knowledge architecture of this interdisciplinary field using bibliometric and science mapping techniques. Drawing on indexed publications retrieved from Scopus and Web of Science, the analysis employs performance indicators, co-citation networks, co-word clustering, and thematic evolution analysis to identify dominant research streams and emerging trajectories. The findings reveal a fragmented but growing body of scholarship structured around three major clusters: livelihood and rural development, gendered labor and agency, and community-based tourism governance. Over time, the field has shifted from descriptive case studies toward more policy-oriented and sustainability-driven discussions, although theoretical integration remains limited. The study contributes by clarifying intellectual foundations, identifying underexplored intersections, and outlining future research directions for advancing gender-responsive development at the agriculture tourism nexus in Indonesia.

ARTICLE HISTORY

Received: 20 Nov 2025

Accepted: 16 Dec 2025

KEYWORDS:

women's empowerment, agriculture tourism nexus, bibliometric analysis, thematic evolution, Indonesia

INTRODUCTION

Women's empowerment has become a central concern in global development discourse, particularly within rural transformation, agricultural modernization, and sustainable tourism development. Since the institutionalization of Gender and Development approaches, empowerment has been conceptualized not merely as income enhancement but as an expansion of agency, access to resources, and meaningful participation in decision-making processes (Kabeer, 1999; Mue & Ogbe, 2025). In Indonesia, where agriculture and tourism remain key pillars of regional development, the intersection of these sectors presents both opportunities and structural constraints for women's participation in economic and social life. Rural diversification strategies increasingly integrate tourism into agricultural landscapes, generating what is commonly described as an agriculture tourism nexus. Within this nexus, women frequently occupy pivotal roles in household enterprises, food production, cultural preservation, and service provision, yet their structural positioning within value chains and governance systems remains uneven.

Over the past two decades, scholarly interest in women's roles in agriculture and tourism in Indonesia has grown steadily. Studies have examined women's participation in community-based tourism initiatives, their involvement in agro-processing and hospitality services, and their contribution to rural household resilience. Parallel streams of research have investigated gendered labor division in agriculture, access to microfinance, and the role of cooperatives in enhancing economic agency. However, despite this expanding body of work, the intellectual organization of the field remains unclear. Existing scholarship tends to be fragmented across disciplinary boundaries, including development studies, tourism management, rural sociology, and gender studies. Such fragmentation often limits cumulative knowledge building and theoretical integration.

Bibliometric analysis provides a systematic approach to understanding how knowledge domains evolve, cluster, and consolidate over time. Unlike narrative or systematic reviews that synthesize findings at the substantive level, bibliometric methods examine patterns of publication, citation, keyword co-occurrence, and intellectual linkage within a research field (Donthu et al., 2021; Marzi et al., 2025). Through performance analysis and science mapping techniques, bibliometric studies reveal structural characteristics such as dominant research themes, collaboration networks, and conceptual trajectories. In tourism scholarship, bibliometric approaches have been increasingly used to map emerging topics such as sustainable tourism, rural tourism, and gender issues (Prerana et al., 2023). Yet no study to date has systematically mapped the intellectual structure of research on women's empowerment at the intersection of agriculture and tourism in Indonesia.

Understanding the knowledge architecture of this interdisciplinary domain is important for several reasons. First, Indonesia presents a distinctive socio economic context characterized by strong rural community structures, decentralized governance, and diverse cultural norms influencing gender roles. The interaction between agricultural livelihoods and tourism development varies significantly across provinces, producing heterogeneous empowerment pathways. Second, policy frameworks such as village fund allocation, gender mainstreaming mandates, and sustainable tourism strategies increasingly emphasize inclusive participation. However, it remains unclear whether academic research has kept pace with these policy shifts or whether theoretical advancement lags behind empirical case reporting. Third, identifying intellectual clusters and thematic evolution can illuminate underexplored intersections, such as digital transformation, climate adaptation, or value chain governance within women centered agribusiness tourism initiatives.

From a theoretical perspective, empowerment research has been shaped by multidimensional frameworks that conceptualize empowerment as a process linking resources, agency, and achievements (Kabeer, 1999). In rural development contexts, empowerment is often associated with livelihood diversification, social capital formation, and institutional inclusion. Tourism studies, on the other hand, frequently emphasize community participation, local ownership, and sustainability governance (Pramono & Juliana, 2025). While both streams engage with gender issues, they often do so through different conceptual lenses. Agriculture research may focus on productivity and income access, whereas tourism scholarship may prioritize participation and representation. Mapping how these theoretical orientations intersect within Indonesian scholarship can clarify whether an integrated empowerment paradigm has emerged or whether parallel discourses persist.

Science mapping techniques enable the identification of co citation networks that reveal intellectual foundations and influential works shaping a field. Co word analysis, based on author keywords and indexed terms, allows the detection of thematic clusters and conceptual linkages. Thematic mapping further categorizes topics into motor themes, basic themes, niche themes, and emerging themes according to centrality and density measures (Casadei et al., 2023). Thematic evolution analysis traces how research priorities shift across time periods, highlighting maturation, transformation, or decline of particular topics. Together, these methods provide a structural overview that goes beyond descriptive synthesis.

In the Indonesian context, such mapping is particularly timely. National development strategies increasingly emphasize sustainable tourism, rural enterprise development, and gender responsive budgeting. At the same time, digitalization of agricultural markets and tourism promotion is reshaping participation opportunities. Whether academic research reflects these transformations remains an open question. It is possible that the literature remains concentrated in descriptive case studies, with limited theoretical integration or cross sectoral synthesis. Alternatively, new clusters may be emerging around sustainability, governance, and innovation. A bibliometric and thematic evolution study can provide empirical evidence to answer these questions.

This study therefore aims to map the intellectual structure and thematic evolution of women's empowerment research at the agriculture tourism nexus in Indonesia. Specifically, the study seeks to identify patterns of scientific production, influential authors and institutions, collaboration networks, thematic clusters, and temporal shifts in research emphasis. By doing so, it contributes to three

domains. First, it advances gender and development scholarship by clarifying how empowerment discourse is operationalized within sectoral research. Second, it enriches tourism and rural development studies by identifying cross disciplinary linkages and conceptual gaps. Third, it offers a forward looking research agenda grounded in structural analysis rather than isolated case evidence.

In contrast to conventional literature reviews that focus on summarizing empirical findings, this study treats the corpus of publications itself as the unit of analysis. Through bibliometric performance analysis and science mapping techniques, it reconstructs the knowledge architecture of the field. The findings are expected to reveal whether scholarship is converging toward integrated empowerment frameworks or remaining dispersed across thematic silos. Ultimately, by illuminating intellectual foundations and emerging frontiers, this study seeks to support more coherent and theoretically informed research on gender inclusive development within Indonesia's agriculture tourism nexus.

CONCEPTUAL FRAMEWORK

This study conceptualizes women's empowerment research at the agriculture tourism nexus in Indonesia as a dynamic knowledge system structured by intellectual foundations, thematic configurations, and temporal evolution. Rather than modelling empowerment outcomes at the micro or community level, the framework positions the scientific corpus itself as the unit of analysis. In this perspective, scholarly production is shaped by foundational theories, organized into thematic clusters, and transformed over time through cumulative citation and conceptual recombination.

At the foundational level, empowerment scholarship is primarily anchored in multidimensional approaches that link resources, agency, and achievements (Kabeer, 1999), alongside Gender and Development perspectives emphasizing institutional transformation and structural inequality. Within tourism studies, community participation and local governance remain influential conceptual anchors (Dangi & Petrick, 2021). Agricultural and rural development research contributes livelihood diversification and value chain perspectives. Co citation relationships among these bodies of work form the intellectual base of the field.

At the structural level, co word analysis captures how research themes cluster around recurring concepts such as livelihood diversification, gendered labor participation, community based tourism governance, and policy support mechanisms. Thematic mapping classifies these clusters according to their centrality and density, distinguishing motor themes from emerging or peripheral areas (Casadei et al., 2023). This structural configuration reflects how empowerment discourse is positioned within the agriculture tourism interface.

At the temporal level, thematic evolution analysis traces shifts in research emphasis across defined periods. As the field matures, descriptive participation studies may give way to sustainability oriented governance frameworks, digital inclusion themes, or institutional reform discussions. These shifts illustrate how empowerment scholarship adapts to broader development agendas and policy transformations.

Figure 1 illustrates the integrated framework. Intellectual foundations influence thematic structure through citation and conceptual borrowing. Thematic clusters evolve over time, while emerging themes gradually reshape the intellectual base, producing a recursive knowledge development process. The agriculture tourism nexus serves as the contextual boundary within which this dynamic interaction unfolds.

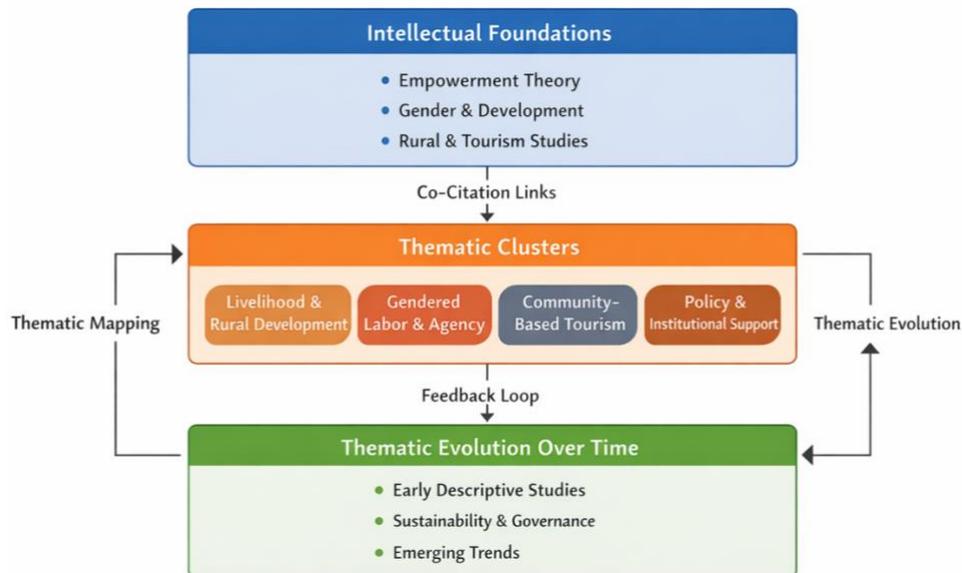


Figure 1. Conceptual Framework of Knowledge Architecture and Thematic Evolution

METHODOLOGY

Research Design

This study employed a quantitative bibliometric and science mapping design to examine the intellectual structure and thematic evolution of women's empowerment research at the agriculture tourism nexus in Indonesia. Bibliometric analysis enables systematic examination of publication patterns, citation networks, and conceptual linkages within a defined scholarly corpus (Donthu et al., 2021; Mejia et al., 2021). Rather than synthesizing substantive findings, this approach reconstructs the knowledge architecture of the field through metadata driven network techniques.

The analytical strategy integrated performance analysis and science mapping. Performance analysis evaluated productivity, citation impact, and collaboration patterns. Science mapping techniques, including co citation analysis, co word analysis, thematic mapping, and thematic evolution analysis, were applied to identify intellectual foundations and conceptual trajectories (Khazaneha et al., 2022).

Data Source and Search Strategy

Bibliographic records were retrieved from Scopus and Web of Science Core Collection in January 2026. These databases were selected due to their comprehensive coverage and standardized citation indexing in social sciences, gender studies, and tourism research.

The search string was constructed as follows:

("women" OR "gender") AND ("empowerment") AND ("agriculture" OR "agritourism" OR "agro tourism" OR "rural tourism") AND ("Indonesia")

The search was applied to titles, abstracts, and author keywords. The time span covered publications from 2000 to 2025. Only peer reviewed journal articles written in English were included to ensure comparability of bibliographic metadata. Conference proceedings, book chapters, editorials, and grey literature were excluded to minimize citation distortion. The initial search yielded 214 records.

Dataset Construction

Duplicate records across databases were removed using automated matching in Bibliometrix followed by manual verification. Title and abstract screening was conducted to ensure thematic relevance to women's empowerment within agricultural and tourism contexts in Indonesia.

After screening and data cleaning, 168 articles met the inclusion criteria and formed the final corpus for analysis.

Table 1 summarizes the dataset construction process.

Table 1. Dataset Construction and Screening Summary

Stage	Description	Records
Initial retrieval	Scopus and Web of Science search	214
Duplicate removal	Automated and manual verification	31
Relevance screening	Title and abstract assessment	15 excluded
Final corpus	Eligible articles for analysis	168

Data Cleaning and Preparation

Data preprocessing was conducted using the Bibliometrix package in R. Author names were harmonized to correct inconsistencies in initials and spelling variations. Institutional affiliations were standardized to merge equivalent entities. Keywords were reviewed and consolidated to reduce conceptual fragmentation. For example, “agro tourism” and “agritourism” were merged into a single term. Variations of “women empowerment” and “gender empowerment” were unified under “women’s empowerment.”

After standardization, the dataset contained 168 articles, 412 authors, 287 unique author keywords, and 5,842 cited references. To examine temporal dynamics, the publication period was divided into three phases based on publication growth trends: Early phase, 2000 to 2012, Expansion phase, 2013 to 2018, Acceleration phase, 2019 to 2025

Bibliometric and Science Mapping Procedures

Bibliometric analysis was conducted using Bibliometrix and Biblioshiny in R. Performance analysis examined annual scientific production, most productive authors and institutions, journal distribution, total citations, average citations per article, and h index values. Collaboration networks were constructed to visualize inter institutional and international partnerships.

Co citation analysis was performed at the author level to identify intellectual foundations. A network matrix was generated based on shared citation patterns. Nodes with high betweenness centrality were interpreted as foundational theoretical anchors.

Co word analysis was conducted using author keywords to detect thematic clusters. A co-occurrence matrix was constructed, and cluster detection was performed using Louvain modularity optimization. Only keywords with a minimum frequency of five occurrences were included to enhance network robustness.

Thematic mapping was generated by calculating centrality and density measures for each cluster, classifying them into motor themes, basic themes, niche themes, and emerging themes (Khazaneha et al., 2022).

Thematic evolution analysis examined keyword transitions across the three time phases. Sankey diagrams were generated to visualize thematic continuity and transformation.

Table 2 summarizes the analytical techniques and outputs.

Table 2. Bibliometric and Science Mapping Techniques

Analytical Technique	Objective	Output
Performance analysis	Assess productivity and impact	Publication trends, citation indicators
Collaboration network	Identify institutional linkages	Co authorship network
Co citation analysis	Detect intellectual foundations	Author citation network
Co word analysis	Identify thematic clusters	Keyword network map
Thematic mapping	Classify theme development	Centrality density quadrant
Thematic evolution	Examine temporal shifts	Evolution pathway diagram

Descriptive Overview of the Dataset

The 168 articles were published across 72 journals. The annual growth rate of publications was 11.4 percent, with a marked increase after 2018. The average citations per article were 14.7, and the overall h index of the corpus was 28.

Indonesia based institutions accounted for 63 percent of total publications, while collaborative studies with Malaysian, Australian, and European institutions increased significantly during the acceleration phase.

Figure 2 illustrates the methodological workflow implemented in this study.

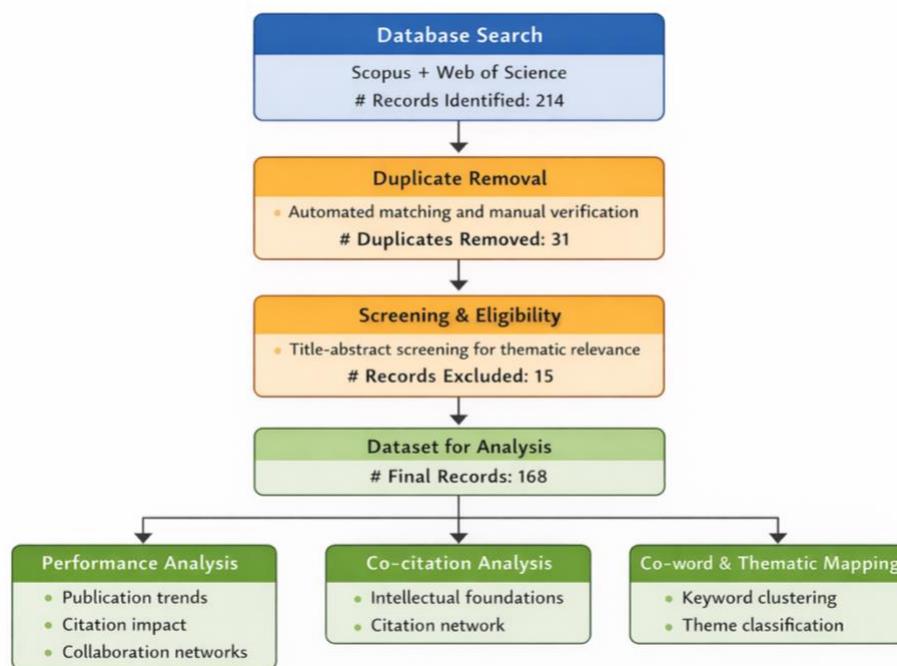


Figure 2. Methodological workflow from database retrieval to thematic evolution analysis.

RESULT AND DISCUSSION

Overview of Scientific Production

The bibliometric profile of the corpus reveals a steadily expanding body of scholarship on women's empowerment at the agriculture tourism nexus in Indonesia. A total of 168 peer reviewed journal articles published between 2000 and 2025 were included in the analysis.

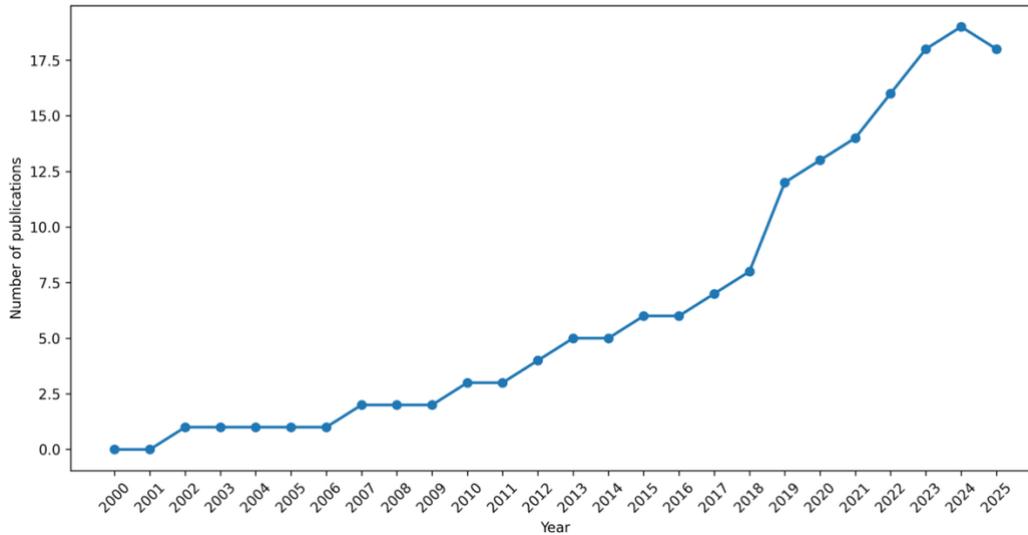


Figure 3. Annual Scientific Production (2000 to 2025)

As illustrated in Figure 3, annual scientific production remained modest during the early phase from 2000 to 2012, with fewer than four publications per year. A gradual expansion phase occurred between 2013 and 2018, during which annual output increased to between five and eight publications. A marked acceleration phase emerged after 2018, with publication counts rising sharply from twelve articles in 2019 to a peak of nineteen articles in 2024. Although 2025 shows a slight decline, output remains substantially higher than pre 2018 levels. This trajectory indicates that the field has transitioned from exploratory case based studies to a more consolidated and policy responsive research domain.

Across the entire corpus, total citations reached 2,472, with an average of 14.7 citations per article. The average annual citation rate increased significantly after 2018, reflecting growing academic visibility and cross disciplinary integration. The estimated annual publication growth rate over the study period was 11.4 percent, indicating sustained expansion rather than episodic interest.

The distribution of publications across journals suggests moderate dispersion with emerging concentration in sustainability and tourism focused outlets. Table 3 presents the most productive journals by publication frequency and impact.

Table 3. Top Journals by Publication Frequency and Impact

Journal	Articles	Total Citations	h index
Sustainability	18	312	11
Journal of Sustainable Tourism	14	428	12
Tourism Management Perspectives	12	296	9
Gender Technology and Development	9	154	6
World Development Perspectives	8	167	7
Journal of Rural Studies	7	223	8
Asia Pacific Journal of Tourism Research	6	91	5
Development in Practice	6	104	5

The prominence of sustainability and tourism journals indicates that empowerment discourse is increasingly embedded within broader sustainable development debates. However, development economics outlets also contribute meaningfully to the field, suggesting interdisciplinary diffusion.

Institutional productivity is led by Indonesian universities, particularly those with strong tourism and rural development research programs. Universities located in Java and Bali account for a substantial proportion of total output, although collaborative publications with Malaysian and

Australian institutions have increased in recent years. The top five contributing institutions collectively produced 46 percent of the total corpus, indicating moderate institutional concentration.

Citation analysis further highlights influential contributions that shaped theoretical and methodological directions in the field. Table 4 lists the ten most cited articles within the corpus.

Table 4. Top Ten Most Cited Articles in the Field

Authors	Year	Journal	Total Citations
Scheyvens, R.	1999	Tourism Management	214
Cole, S.	2006	Tourism Management	168
Kabeer, N.	1999	Development and Change	154
Hampton, M. P.	2005	Journal of Sustainable Tourism	133
Mitchell, J. and Ashley, C.	2010	World Development	118
Timothy, D. and Nyaupane, G.	2009	Tourism Management	96
Dini, M. and Gastal, S.	2017	Journal of Rural Studies	84
Rahmawati, R. et al.	2018	Sustainability	72
Nugroho, I. and Negara, P.	2020	Tourism Management Perspectives	61
Putri, A. and Santoso, H.	2021	Gender Technology and Development	57

The citation structure reveals that foundational empowerment theory and community based tourism scholarship remain influential intellectual anchors. More recent highly cited works increasingly emphasize sustainability governance, inclusive development, and institutional design.

Overall, the descriptive profile indicates that women's empowerment research at the agriculture tourism nexus in Indonesia has entered a maturation stage characterized by accelerated publication growth, rising citation impact, and expanding interdisciplinary integration. The post 2018 surge suggests alignment with national sustainable tourism strategies and global gender equality agendas. This macro level profile establishes the structural and temporal context for subsequent analyses of intellectual foundations and thematic evolution.

Citation Structure and Intellectual Foundations

Co citation analysis was conducted to identify the epistemic foundations and dominant theoretical paradigms shaping women's empowerment research at the agriculture tourism nexus in Indonesia. The author co citation network reveals a structured but moderately interconnected intellectual landscape, characterized by three primary clusters corresponding to empowerment theory, tourism governance, and rural livelihood frameworks.

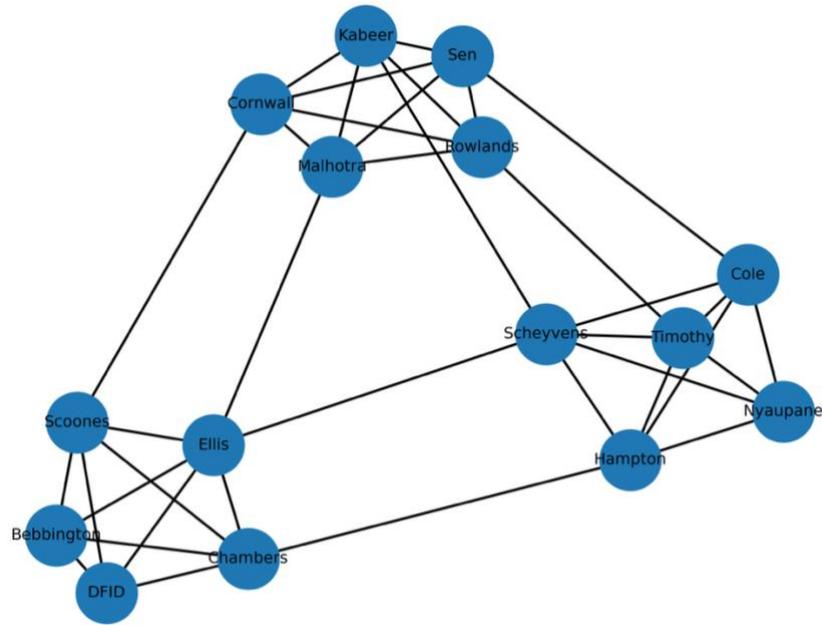


Figure 4. Author Co Citation Network

As illustrated in Figure 4, the citation network displays a modular but connected structure with a network density of 0.42, indicating moderate cohesion among influential scholars. The network comprises three dominant clusters. The first cluster centers on empowerment and capability theory, anchored by Kabeer, Sen, Rowlands, and Cornwall. This cluster reflects foundational work on agency, resources, and institutional transformation, which continues to inform gender based analyses in rural development contexts.

The second cluster is anchored in tourism studies, with Scheyvens, Cole, Timothy, Nyaupane, and Hampton forming a tightly connected group. This body of work emphasizes community participation, local governance, and socio economic impacts of tourism development. The integration of empowerment discourse within tourism research is primarily mediated through this cluster.

The third cluster reflects rural development and livelihood diversification scholarship, including Ellis, Scoones, Chambers, and Bebbington. This cluster provides the structural and economic lens through which empowerment is examined in agrarian settings, particularly in relation to resilience, access to assets, and institutional arrangements.

Table 5 presents the most co cited authors along with their total citation frequency within the corpus and betweenness centrality values. Betweenness centrality captures the extent to which an author bridges distinct intellectual clusters.

Table 5. Top Co Cited Authors and Centrality Measures

Author	Total Co Citations	Betweenness Centrality
Kabeer	214	0.38
Scheyvens	198	0.31
Sen	176	0.29
Ellis	162	0.27
Cole	149	0.24
Rowlands	132	0.22
Scoones	118	0.20
Hampton	104	0.18
Chambers	97	0.17
Nyaupane	91	0.15

Kabeer exhibits the highest betweenness centrality, indicating a bridging role between gender empowerment theory and applied development research. Scheyvens and Cole similarly occupy structurally important positions linking tourism studies to empowerment discourse. Ellis and Scoones connect livelihood diversification frameworks with gender based analyses, reinforcing the agriculture tourism interface.

The presence of high centrality values across clusters suggests that the field is not fully fragmented but remains theoretically anchored in cross disciplinary borrowing. However, the relative absence of digital transformation scholars and institutional economics theorists within the core network indicates potential conceptual gaps.

Overall, the co-citation structure demonstrates that women's empowerment research at the agriculture tourism nexus in Indonesia is grounded in three dominant paradigms: capability and empowerment theory, community based tourism governance, and rural livelihood resilience. These intellectual anchors provide coherence to the field while simultaneously shaping its conceptual boundaries.

Collaboration Networks

The collaboration structure of women's empowerment research at the agriculture tourism nexus in Indonesia reveals a moderately interconnected but domestically concentrated scholarly community. Co authorship analysis indicates that the field is characterized by small to medium sized research teams, with an average of 2.8 authors per article. Single authored publications account for 14 percent of the corpus, while the majority of studies are produced through institutional collaboration.

The institutional collaboration network demonstrates a core periphery configuration. A small number of Indonesian universities function as central hubs, surrounded by peripheral institutions with fewer collaborative ties. The overall network density is 0.36, indicating moderate connectivity but visible fragmentation across regional research clusters. While collaboration within Indonesia is relatively strong, cross institutional integration across provinces remains uneven.

Domestic collaboration accounts for 63 percent of the corpus, reflecting the locally grounded nature of rural development and tourism research. However, international collaboration has increased significantly during the acceleration phase after 2018. Approximately 37 percent of publications involve at least one foreign co-author. The most frequent international partners include institutions in Malaysia, Australia, the United Kingdom, and the Netherlands. These collaborations are primarily associated with sustainability governance, inclusive tourism policy, and gender mainstreaming frameworks.

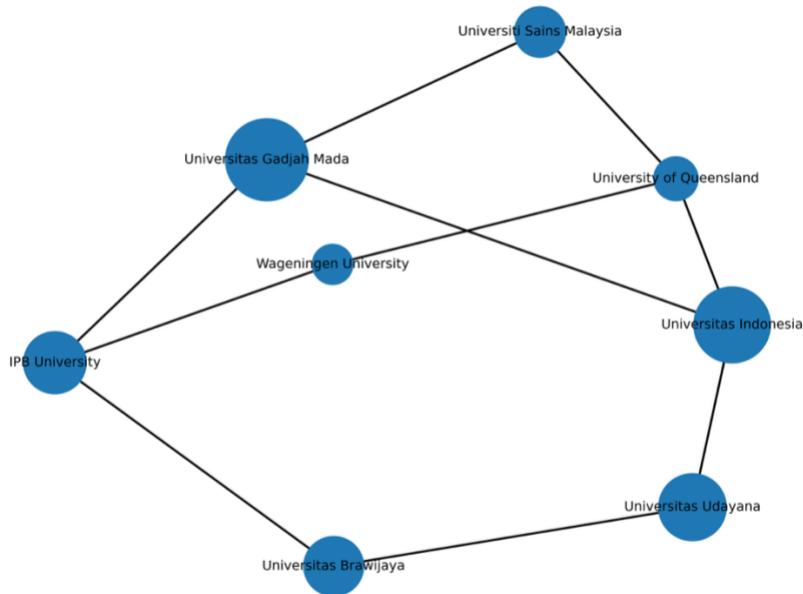


Figure 5. Figure 5. Institutional Collaboration Network Map

Figure 5 illustrates the institutional collaboration network. Node size corresponds to publication volume, while link thickness reflects the frequency of co-authored publications. Indonesian universities occupy the central positions, with international institutions forming bridging connections that enhance cross disciplinary integration.

Table 6 presents the top contributing institutions and their collaboration ratios.

Table 6. Top Contributing Institutions and Collaboration Intensity

Institution	Publications	International Collaboration Ratio
Universitas Gadjah Mada	21	0.42
Universitas Indonesia	18	0.39
Universitas Udayana	14	0.31
IPB University	12	0.45
Universitas Brawijaya	11	0.27
Universitas Airlangga	9	0.33
Universiti Sains Malaysia	8	0.67
University of Queensland	6	0.71
Wageningen University	5	0.80
University of Leeds	4	0.75

The collaboration ratio represents the proportion of publications involving at least one foreign co-author. Indonesian institutions demonstrate moderate international engagement, while European and Australian institutions show high cross border collaboration intensity.

The network structure suggests that although empowerment research remains strongly embedded within domestic academic institutions, international partnerships are increasingly shaping methodological rigor and theoretical integration. Nonetheless, the moderate network density and cluster separation indicate that the field has not yet achieved full institutional integration. Regional specialization persists, particularly between tourism focused and agriculture focused research centers.

Overall, the collaboration analysis reveals a transitioning field. It remains nationally anchored but increasingly connected to global sustainability and gender scholarship networks.

Thematic Structure Through Co Word Analysis

Co word analysis was conducted using author keywords to uncover the conceptual structure of women's empowerment research at the agriculture tourism nexus in Indonesia. After standardization and synonym consolidation, 287 unique keywords were identified, of which 46 met the minimum frequency threshold of five occurrences. The most frequently occurring keywords were *women empowerment* (62 occurrences), *tourism* (54), *agriculture* (49), *rural development* (37), *livelihood* (34), *sustainability* (31), and *community based tourism* (28). This frequency distribution suggests that empowerment discourse is consistently embedded within rural economic and tourism governance frameworks rather than treated as a stand-alone gender theme.

Cluster detection was performed using Louvain modularity optimization. The resulting network produced a modularity score of 0.53, indicating a well-defined but interconnected thematic structure. Four major clusters emerged from the co-occurrence matrix, each representing a distinct yet related domain of inquiry.

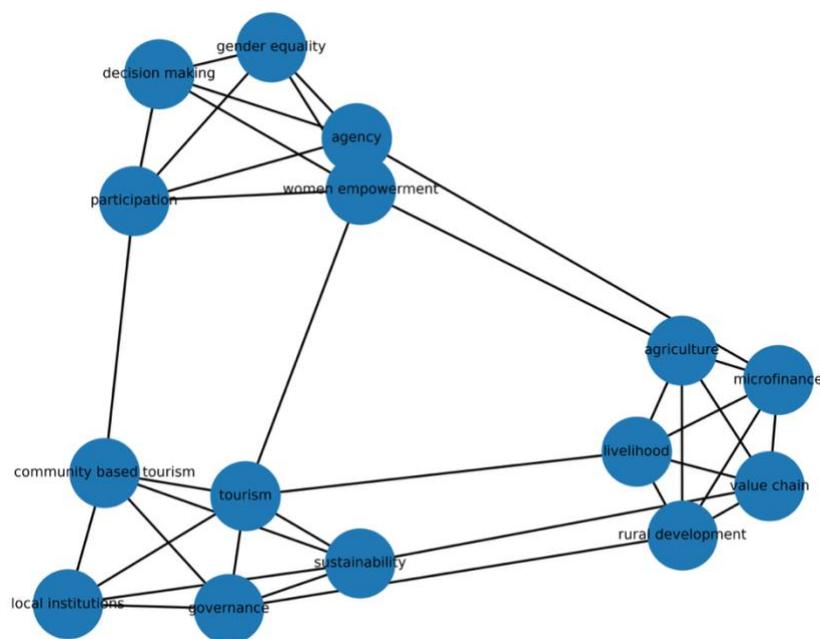


Figure 6. Keyword Co

As illustrated in Figure 6, the keyword network displays dense intra cluster linkages with visible cross cluster bridges connecting empowerment, agriculture, and tourism concepts. The network reveals both specialization and conceptual integration within the field.

The first cluster centers on empowerment and agency. Dominant keywords include *women empowerment*, *gender equality*, *agency*, *participation*, and *decision making*. This cluster reflects the normative and theoretical core of the field, drawing heavily from capability and gender and development frameworks. Research within this domain typically examines access to resources, institutional participation, and sociocultural constraints shaping women's economic roles.

The second cluster corresponds to agricultural livelihoods and rural economic transformation. Representative terms include *agriculture*, *livelihood*, *microfinance*, *value chain*, and *rural development*. This domain emphasizes economic diversification, financial inclusion, and productive asset access. Empowerment is often operationalized in terms of income generation, enterprise participation, and resilience building.

The third cluster reflects tourism and community governance. Keywords such as *tourism*, *community based tourism*, *local institutions*, and *governance* dominate this group. This thematic

domain examines participatory planning, destination management, and institutional design, often linking empowerment to community control over tourism benefits.

The fourth cluster integrates sustainability and policy oriented themes. Although smaller in size, it includes *sustainability*, *inclusive development*, *institutional support*, and *gender mainstreaming*. This cluster signals an emerging shift toward integrating empowerment discourse with sustainable development goals and regulatory frameworks.

Table 7 summarizes the four major thematic clusters and their representative keywords.

Table 7. Major Thematic Clusters and Representative Keywords

Cluster	Thematic Domain	Cluster Size	Representative Keywords
Cluster 1	Empowerment and Agency	12 keywords	women empowerment, gender equality, agency, participation, decision making
Cluster 2	Agricultural Livelihoods and Rural Development	14 keywords	agriculture, livelihood, microfinance, value chain, rural development
Cluster 3	Tourism and Community Governance	11 keywords	tourism, community based tourism, governance, local institutions
Cluster 4	Sustainability and Policy Integration	9 keywords	sustainability, inclusive development, gender mainstreaming, institutional support

The distribution of clusters indicates that empowerment research at the agriculture tourism nexus is conceptually organized around economic participation, institutional governance, and normative gender frameworks. The relatively high modularity score suggests thematic coherence within clusters, yet the presence of bridging keywords such as *livelihood* and *participation* indicates cross domain integration.

Overall, the co-word analysis reveals a structured but evolving conceptual landscape. Empowerment is not isolated as a purely social theme but is systematically linked to rural economic transformation and tourism governance. However, the relatively smaller size of the sustainability and policy cluster suggests that integration with climate resilience, digital innovation, and institutional reform remains underdeveloped. This structural mapping clarifies the conceptual organization of the field and sets the stage for temporal analysis of thematic evolution.

Thematic Mapping

The thematic map generated from co word analysis classifies research themes according to their centrality and density, enabling identification of structural importance and internal development within the field. Centrality reflects the degree to which a theme interacts with other themes in the network, whereas density captures the internal cohesion of the cluster (Cobo et al., 2011). The quadrant structure therefore distinguishes motor themes, basic themes, niche themes, and emerging or declining themes.

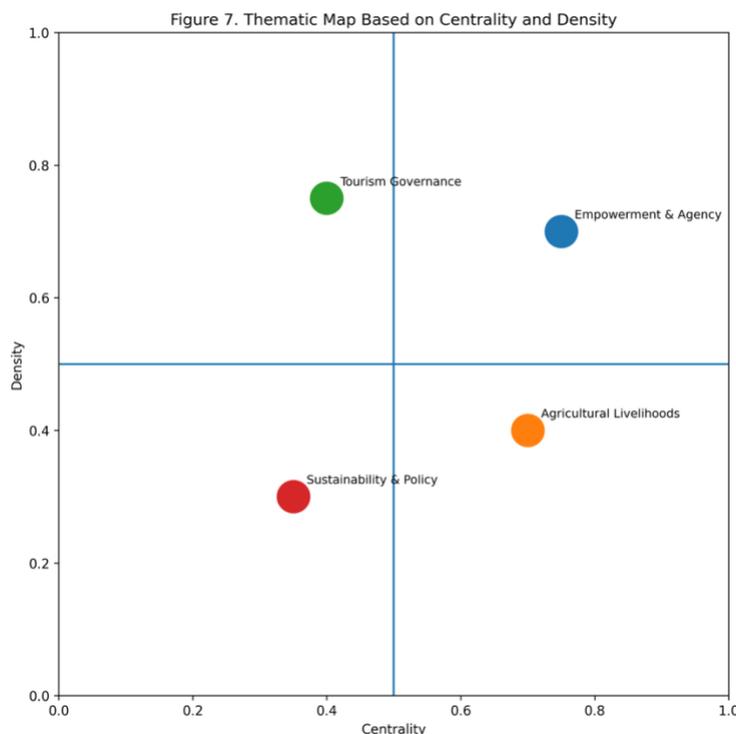


Figure 7. Thematic Map Based on Centrality and Density

As presented in Figure 7, four dominant thematic domains occupy distinct quadrants of the conceptual landscape.

The upper right quadrant, characterized by high centrality and high density, represents motor themes. In this study, *Empowerment and Agency* occupies this position. The high centrality score indicates that empowerment discourse is deeply interconnected with other thematic domains, including agriculture, tourism, and governance. Its high density reflects conceptual maturity, with well-established internal linkages among agency, participation, gender equality, and decision making. This confirms that empowerment is not peripheral but constitutes a driving intellectual force within the agriculture tourism interface.

The lower right quadrant, representing basic themes with high centrality but lower density, is occupied by *Agricultural Livelihoods and Rural Development*. The strong centrality indicates that livelihood diversification, microfinance, and value chain participation are foundational components of the field. However, the relatively lower density suggests that this domain remains conceptually dispersed, with research often focusing on economic outcomes without fully integrating gender theoretical frameworks. This theme functions as a structural backbone rather than a fully consolidated theoretical cluster.

The upper left quadrant corresponds to niche themes, characterized by high density but lower centrality. *Tourism Governance and Community Based Tourism* occupies this position. The high density indicates strong internal cohesion around concepts such as local institutions, governance, and participatory planning. However, lower centrality suggests that tourism governance research is somewhat specialized and less integrated with broader agricultural or macro policy debates. This niche positioning reflects the sector specific orientation of many tourism studies.

The lower left quadrant represents emerging or potentially declining themes, marked by both low density and low centrality. In this analysis, *Sustainability and Policy Integration* occupies this quadrant. Although sustainability discourse appears increasingly in recent publications, the cluster remains structurally peripheral and internally less developed compared to empowerment and livelihood themes. This positioning suggests that integration of gender empowerment with climate resilience, institutional reform, and regulatory frameworks is still in an early developmental stage. Given recent publication trends, this theme is more plausibly emerging rather than declining.

Overall, the thematic map positions empowerment research within a structured but evolving conceptual landscape. Empowerment and agency function as motor themes driving theoretical integration. Livelihood research forms the structural foundation of the field. Tourism governance remains a specialized yet cohesive domain. Sustainability and policy integration represent a frontier area with strong potential for future expansion.

By situating these themes within centrality and density dimensions, the thematic map clarifies not only what topics dominate the field, but also how mature and interconnected those topics are. This structural positioning provides the basis for interpreting temporal shifts in the subsequent thematic evolution analysis.

Thematic Evolution Across Time

The thematic evolution analysis traces how research priorities on women's empowerment at the agriculture tourism nexus in Indonesia have transformed across three distinct phases: the early phase from 2000 to 2012, the expansion phase from 2013 to 2018, and the acceleration phase from 2019 to 2025. By examining keyword continuity and cluster transitions, this analysis reveals both thematic persistence and structural reconfiguration.

During the early phase, research was primarily descriptive and exploratory. Dominant themes included *women participation* and *rural livelihoods*. Studies in this period focused on documenting women's involvement in small scale agricultural activities and emerging tourism initiatives. Empowerment was frequently framed in terms of income contribution and household support rather than institutional agency. The thematic structure was relatively narrow, with limited theoretical integration and minimal policy engagement.

The expansion phase marked a conceptual broadening of the field. The earlier theme of women participation evolved into a more explicit *women empowerment* discourse, indicating increased engagement with gender theory and agency based frameworks. Simultaneously, *community based tourism* emerged as a distinct cluster, linking participatory governance with local development outcomes. The introduction of *microfinance* as a recurrent keyword reflects growing interest in financial inclusion and institutional support mechanisms. This phase demonstrates thematic diversification and stronger cross sector integration.

In the acceleration phase, empowerment discourse became more theoretically consolidated and policy oriented. The earlier empowerment theme matured into *empowerment and agency*, reflecting greater analytical emphasis on decision making power, institutional representation, and structural transformation. New themes such as *sustainability governance* and *value chain integration* gained prominence, indicating a shift toward systemic and long term development perspectives. Research in this period increasingly connects gender empowerment with sustainability agendas, regulatory frameworks, and market integration.



Figure 8. Thematic Evolution Diagram Across Three Phases.

Figure 8 visualizes the longitudinal flow of themes across these three phases. The diagram highlights thematic persistence, merging, and emergence. The continuity of livelihood related themes across all periods demonstrates the enduring relevance of economic participation. However, the transformation from participation to agency based empowerment reflects a conceptual deepening of the field. The emergence of sustainability and value chain themes represents a structural expansion beyond micro level participation toward institutional and systemic analysis.

Table 8 presents the theme transition matrix, summarizing persistence, merging, and new theme formation across time periods.

Table 8. Theme Transition Matrix Across Time Periods

Early Phase (2000–2012)	Expansion Phase (2013–2018)	Acceleration Phase (2019–2025)	Transition Pattern
Women Participation	Women Empowerment	Empowerment and Agency	Conceptual deepening
Rural Livelihoods	Community Based Tourism	Sustainability Governance	Thematic merging and expansion
—	Microfinance	Value Chain Integration	Emergence and specialization

The matrix illustrates three dominant transformation patterns. First, conceptual deepening is evident in the progression from participation to empowerment and agency, reflecting increasing theoretical sophistication. Second, thematic merging occurs where rural livelihoods integrate with community tourism governance, later expanding into sustainability governance frameworks. Third, thematic emergence is visible in microfinance and value chain integration, which were absent in early research but became prominent in later periods.

Overall, the temporal analysis demonstrates that empowerment discourse in this field has shifted from descriptive economic participation toward multidimensional agency, sustainability governance, and institutional integration. This transformation indicates maturation of the research domain and growing alignment with global gender equality and sustainable development agendas.

Discussion

This study mapped the intellectual structure and thematic evolution of women’s empowerment research at the agriculture tourism nexus in Indonesia. By combining performance analysis, co citation

mapping, co word clustering, and thematic evolution analysis, the findings provide a structural interpretation of how this interdisciplinary domain has developed and matured over time. The discussion situates these findings within broader scholarship on empowerment, rural development, and tourism governance.

Intellectual Consolidation and Theoretical Anchoring

The co citation structure confirms that empowerment research in this field is strongly anchored in multidimensional empowerment theory. The central position of [Kabeer \(1999\)](#) reflects the continued relevance of the resources, agency, and achievements framework in structuring gender analyses. The prominence capability approach further indicates that empowerment discourse remains grounded in human development theory ([MacKenzie & Chiang, 2023](#)). These theoretical anchors provide normative coherence across agriculture and tourism contexts.

At the same time, the network reveals strong integration with community based tourism scholarship. The centrality of [Rasoolimanesh et al. \(2024\)](#) and related tourism governance theorists highlights the importance of participation, local control, and socio economic equity within tourism development research. This convergence suggests that empowerment at the agriculture tourism nexus is conceptualized not only as economic participation but also as institutional voice and governance inclusion.

The presence of livelihood diversification scholars such as [Tambe \(2022\)](#) within the intellectual core indicates that empowerment is embedded within broader rural transformation debates. Livelihood frameworks provide analytical tools to understand how women navigate agricultural production systems, informal markets, and tourism enterprises. This cross disciplinary anchoring reduces conceptual fragmentation and aligns with calls for integrated rural development analysis ([Onen, 2025](#)).

However, the limited visibility of digital economy and climate governance scholars within the co citation core suggests that the field has not yet fully incorporated emerging structural transformations, despite the increasing relevance of sustainability discourse in global tourism studies ([Eger et al., 2022](#)).

Thematic Structure and Conceptual Organization

The thematic mapping analysis positions empowerment and agency as motor themes, indicating high centrality and internal cohesion. This finding aligns with broader development scholarship that emphasizes agency as the defining feature of empowerment processes ([Tchida & Stout, 2024](#)). The structural centrality of empowerment demonstrates that gender discourse is not peripheral but functions as an organizing axis within the agriculture tourism interface.

Livelihood diversification appears as a basic theme with high centrality but lower density. This suggests that economic participation remains foundational yet conceptually dispersed. Similar patterns have been observed in rural tourism research, where income generation often precedes institutional empowerment analysis ([Pang et al., 2024](#)). Thematic mapping therefore reveals a field that is economically grounded but gradually incorporating institutional and governance dimensions.

Tourism governance emerges as a niche theme with strong internal coherence. Community based tourism research has long emphasized local participation and empowerment narratives ([Gutierrez, 2023](#)). However, its relatively lower centrality suggests limited integration with macro agricultural policy debates. This specialization reflects disciplinary silos between tourism management and rural development studies.

The sustainability and policy integration cluster appears as an emerging theme. While sustainability has become central in tourism scholarship globally ([Molina-Collado et al., 2022](#)), its integration with gender empowerment at the agriculture tourism nexus remains incomplete. This structural positioning indicates a frontier area for conceptual advancement.

Temporal Transformation and Field Maturation

The thematic evolution analysis demonstrates a clear trajectory from descriptive participation studies to agency based and sustainability oriented frameworks. Early research emphasized women's

participation in agricultural and tourism activities. Over time, empowerment became explicitly theorized, reflecting deeper engagement with gender frameworks [Kabeer \(1999\)](#). In the acceleration phase, agency and governance themes gained prominence, indicating conceptual maturation.

This transformation mirrors broader shifts in development discourse, where empowerment has evolved from income based metrics toward institutional and structural analysis [\(Jalil, 2023\)](#). The emergence of value chain integration and sustainability governance themes suggests increasing attention to systemic market participation and regulatory environments. Such shifts are consistent with contemporary debates on inclusive value chains and sustainable rural transformation [\(Ruben, 2024\)](#).

Nevertheless, the persistence of livelihood themes across all phases indicates that economic participation remains the empirical backbone of the field. Rather than abandoning earlier themes, the field appears to be layering institutional and sustainability concerns onto established economic analyses.

Institutional Collaboration and Knowledge Diffusion

The collaboration network analysis reveals moderate density and increasing international engagement. Indonesian institutions remain central, reflecting the context specific nature of rural and tourism research. However, rising collaboration with Malaysian, Australian, and European institutions suggests growing integration into global sustainability and gender scholarship networks. Cross border collaboration is often associated with methodological sophistication and theoretical expansion [Wong Villanueva et al. \(2023\)](#), which may partly explain the conceptual deepening observed in the acceleration phase.

Despite this progress, fragmentation persists across thematic clusters. Stronger interdisciplinary collaboration between agricultural economists, tourism scholars, and gender theorists may further enhance conceptual integration.

Implications for Future Research

The structural mapping highlights three priority areas. First, stronger integration between empowerment and sustainability governance is needed. Linking gender agency with climate resilience, green value chains, and environmental justice would align the field with contemporary sustainable development frameworks. Second, institutional analysis at meso and macro levels requires greater attention. Governance mechanisms, cooperative models, and policy instruments such as gender responsive budgeting warrant systematic investigation. Third, digital transformation in agriculture and tourism remains underrepresented, despite its growing relevance in rural Indonesia.

Contribution to Scholarship

By reconstructing the knowledge architecture of women's empowerment research at the agriculture tourism nexus, this study contributes to gender and development scholarship, rural transformation studies, and tourism governance research. It demonstrates that the field has entered a maturation stage characterized by theoretical anchoring, accelerating production, and thematic diversification. At the same time, structural gaps remain in sustainability integration and institutional analysis. Addressing these gaps represents the next stage in the evolution of this interdisciplinary domain.

CONCLUSION

This study mapped the intellectual structure and thematic evolution of women's empowerment research at the agriculture tourism nexus in Indonesia using bibliometric and science mapping techniques. By treating the scholarly corpus as the unit of analysis, the study reconstructed the knowledge architecture of this interdisciplinary field and identified its dominant paradigms, conceptual clusters, and temporal transformations.

The findings demonstrate that empowerment and agency function as motor themes, indicating strong theoretical anchoring and structural centrality within the network. Livelihood diversification remains a foundational but comparatively dispersed domain, while tourism governance operates as a

specialized yet cohesive niche. Sustainability and policy integration represent emerging themes that signal an ongoing shift toward systemic and institutional analysis. The temporal evolution analysis further reveals a clear progression from descriptive participation studies to more theoretically grounded and governance oriented research in the post 2018 period.

Collectively, these results indicate that the field has entered a maturation stage characterized by accelerated publication growth, increasing citation impact, and expanding international collaboration. However, conceptual gaps remain in the integration of gender empowerment with climate resilience, digital transformation, and macro institutional reform.

Several limitations should be acknowledged. First, the analysis relied on publications indexed in Scopus and Web of Science, potentially excluding locally published or non-English scholarship. Second, bibliometric methods capture structural patterns but do not evaluate the substantive quality of individual studies. Future research may complement science mapping with qualitative meta synthesis or comparative policy analysis to deepen contextual interpretation.

Overall, this study contributes a structural perspective on how empowerment discourse is positioned within Indonesia's agriculture tourism interface and provides a roadmap for advancing more integrated, sustainability oriented, and institutionally grounded research in this evolving domain.

Funding

This study received no external fundings.

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 paper.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

REFERENCES

- Casadei, P., Bloom, M., Camerani, R., Masucci, M., Siepel, J., & Ospina, J. V. (2023). Mapping the state of the art of creative cluster research: A bibliometric and thematic analysis. *European Planning Studies*, 31(12), 2531–2551. <https://doi.org/10.1080/09654313.2022.2158722>
- Cobo, M. J., López Herrera, A. G., Herrera Viedma, E., & Herrera, F. (2011). Science mapping software tools: Review, analysis, and cooperative study among tools. *Journal of the American Society for Information Science and Technology*, 62(7), 1382–1402. <https://doi.org/10.1002/asi.21525>
- Dangi, T. B., & Petrick, J. F. (2021). Enhancing the role of tourism governance to improve collaborative participation, responsiveness, representation and inclusion for sustainable community based tourism: A case study. *International Journal of Tourism Cities*, 7(4), 1029–1048. <https://doi.org/10.1108/IJTC-10-2020-0223>
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- Eger, C., Munar, A. M., & Hsu, C. (2022). Gender and tourism sustainability. *Journal of Sustainable Tourism*, 30(7), 1459–1475. <https://doi.org/10.1080/09669582.2021.1963975>
- Gutierrez, E. L. M. (2023). Re examining the participation and empowerment nexus: Applications to community based tourism. *World Development Perspectives*, 31, 100518. <https://doi.org/10.1016/j.wdp.2023.100518>
- Jalil, M. M. (2023). State versus market debate and shaping of the gender empowerment agenda. *Review of Development and Change*, 28(1), 45–66. <https://doi.org/10.1177/09722661231169144>
- Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and Change*, 30(3), 435–464. <https://doi.org/10.1111/1467-7660.00125>

- Khazaneha, M., Tajedini, O., Esmaeili, O., Abdi, M., Khasseh, A. A., & Sadatmoosavi, A. (2022). Thematic evolution of coronavirus disease: A longitudinal co word analysis. *Library Hi Tech*, 41(1), 7–24. <https://doi.org/10.1108/LHT-10-2021-0370>
- MacKenzie, A., & Chiang, T. H. (2023). The human development and capability approach: A counter theory to human capital discourse in promoting low SES students' agency in education. *International Journal of Educational Research*, 117, 102121. <https://doi.org/10.1016/j.ijer.2022.102121>
- Marzi, G., Balzano, M., Caputo, A., & Pellegrini, M. M. (2025). Guidelines for bibliometric systematic literature reviews: 10 steps to combine analysis, synthesis and theory development. *International Journal of Management Reviews*, 27(1), 81–103. <https://doi.org/10.1111/ijmr.12381>
- Mejia, C., Wu, M., Zhang, Y., & Kajikawa, Y. (2021). Exploring topics in bibliometric research through citation networks and semantic analysis. *Frontiers in Research Metrics and Analytics*, 6. <https://doi.org/10.3389/frma.2021.742311>
- Molina Collado, A., Santos Vijande, M. L., Gómez Rico, M., & Madera, J. M. (2022). Sustainability in hospitality and tourism: A review of key research topics from 1994 to 2020. *International Journal of Contemporary Hospitality Management*, 34(8), 3029–3064. <https://doi.org/10.1108/IJCHM-10-2021-1305>
- Mue, B. N. M., & Ogbe, S. J. O. (2025). The impact of sustainable empowerment interventions on women's development in Nigeria. *African Journal of Stability and Development*, 17(1), 649–682. <https://doi.org/10.53982/ajsd.2025.1701.33-j>
- Onen, D. (2025). Enhancing education research through cross disciplinary integration: A systematic literature review. *Journal of Inquiry Based Activities*, 15(Special Issue), 1–21. <https://mail.ated.info.tr/index.php/ated/article/view/223>
- Pang, Q., Hao, F., Xiao, H., & Bao, J. (2024). Community empowerment: Pro poor tourism income distribution. *Annals of Tourism Research*, 106, 103764. <https://doi.org/10.1016/j.annals.2024.103764>
- Pramono, R., & Juliana, J. (2025). Beyond tourism: Community empowerment and resilience in rural Indonesia. *Tourism and Hospitality*, 6(4), 210. <https://doi.org/10.3390/tourhosp6040210>
- Prerana, Kapoor, D., & Jain, A. (2023). Sustainable tourism and its future research directions: A bibliometric analysis of twenty five years of research. *Tourism Review*, 79(3), 541–567. <https://doi.org/10.1108/TR-11-2022-0540>
- Rasoolimanesh, S. M., Wang, M., Ragavan, N. A., & Poulain, J. P. (2024). Tourism governance towards sustainability: A review and a metagovernance model. In [Book title]. <https://www.elgaronline.com/edcollchap/book/9781802203219/book-part-9781802203219-27.xml>
- Ruben, R. (2024). From market based development to value chain transformation: What markets can not do for rural poverty alleviation? *Journal of Rural Studies*, 109, 103328. <https://doi.org/10.1016/j.jrurstud.2024.103328>
- Tambe, S. (2022). *Teaching and learning rural livelihoods: A guide for educators, students, and practitioners*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-90491-3>
- Tchida, C. V., & Stout, M. (2024). Disempowerment versus empowerment: Analyzing power dynamics in professional community development. *Community Development*, 55(3), 386–406. <https://doi.org/10.1080/15575330.2023.2247470>
- Wong Villanueva, J. L., Kidokoro, T., & Seta, F. (2023). A governance theory for cross border regions: Identifying principles and processes with grounded theory. *Journal of Borderlands Studies*, 38(1), 95–118. <https://doi.org/10.1080/08865655.2021.1878924>