



The role of social capital in enhancing community participation for sustainable agricultural tourism

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ABSTRACT

Community development has become an interdisciplinary field that focuses on empowering local people's participation and promoting sustainable rural transformation. In this field, social capital has received increasing attention as a driving force connecting community participation with agritourism initiatives.

This study extends prior bibliometric mappings at the intersection of social capital, community participation, and sustainable agritourism using advanced bibliometric methods. Bibliometric analysis was conducted on 634 documents, after 227 removed duplicated from two databases, Web of Science (391) and Scopus (470), for the period 1976 to 2025. The analysis used bibliometrix (R) and VOSviewer software to examine co-occurring keywords, thematic clusters, and conceptual evolution over time. The findings identified three prevailing thematic clusters which included; (1) social trust and empowerment in community-based tourism; (2) sustainability in the development of agritourism; and (3) participatory governance and stakeholder engagement. Emerging themes demonstrate growing concern for environmental justice and indigenous knowledge.

The main contribution of this research is to clarify how the core concept of social capital has gradually replaced environmental-centered keywords and become a new academic anchor for future research and policy-making. The study concludes with suggestions for future quantitative research focused on measuring the impact of social capital dimensions on residents' behavioral intentions to engage in sustainable tourism.

1. Introduction

In recent years, agricultural tourism has increasingly been considered a potential direction for economic development in rural areas. Not simply a sightseeing activity, this model also contributes to preserving the unique cultural features of the locality and promoting awareness of protecting the natural environment [1]. Behind the success of an agricultural tourism destination is not only attractive products or beautiful landscapes, but also the close connection between local people and tourism activities [2]. In this context, social capital is defined as a relationship of trust and mutual support in the community. It plays a very important role in maintaining a long term and effective participation of people in tourism activities [3]. However, current studies tend to use science-mapping methods to examine the mechanisms and structures of knowledge development. Similarly, this research design has also investigated the connection of social capital with operating mechanisms in the field of sustainable agritourism. At the same time, the expected results build a landscape of the academic evolution of this topic to help increase understanding of capital.

Most previous research on agritourism has been concerned with policies, infrastructure, tourism offerings, or even tourist experiences [4]. Furthermore, despite the growth of the field, little work has analyzed how academics conceptualize social capital in diverse communities around the world, particularly its role in encouraging civic participation. In addition, existing research remains fragmented and scattered across specialized sub-topics. Therefore, there is an urgent need to discover the knowledge structure of the field via common analytical techniques, mainly bibliometric science mapping, for a more systematic view of the knowledge development process [5]. This gap limits a clear view of keyword structure, topic clusters and the role of social capital in sustainable agritourism development [6].

On that basis, the study establishes keyword classification to apply bibliometric analysis suitable for systematizing documents and visualizing the process of social capital development according to published topics related to agricultural tourism and rural development. This approach provides a field-level overview and identifies shifts in keyword emphasis through interdisciplinary combinations, thereby opening directions for future empirical studies.

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The findings can contribute by integrating scientific mapping evidence with policy-oriented discussion, thereby clarifying academic trends and outlining a focused research agenda for rural tourism in developing countries.

2. Literature review

2.1. Overview of social capital theories

Social capital is an interdisciplinary concept, widely used in the fields of sociology, economics, political science and community development [7]. Although there are many different understandings, in general, social capital refers to social relationships, interaction networks, and the level of trust and cooperation between individuals and groups in society [8]. This is considered a unifying element within the community, helping to reduce social transaction costs, enhance coordination and improve efficiency in common activities [9]. There are three the typical scholars who laid the foundation for the theory of social capital, namely Pierre Bourdieu, James Coleman and Robert Putnam. Each has a very unique approach which adds depth to the understanding of this concept [10].

According to Bourdieu [11], social capital is one of the three basic types of capital, along with economic capital and cultural capital. He argues that social capital is the sum of potential or actual resources that individuals have through the possession of a sustainable social network [11]. Bourdieu emphasizes the aspect of power and benefits in social relationships, viewing this as a resource to achieve social status.

From a different perspective, Coleman [12] focuses on the role of social capital in supporting educational activities and personal development. He argues that social capital lies in the structure of relationships between people, and it is characteristics such as trust, mutual obligations, and social norms that will facilitate cooperative action [12].

Since the 1990s, the term social capital has been used to promote democratic development and community cohesion. Bonding social capital reflects the connection within the group, and bridging social capital represents relationships beyond the group to enhance cooperation between communities [13]. In the context of social resources, social capital is a network of social interactions that benefits both individuals and communities via trust and mutual assistance [14]. The two analyses say that trust, cooperation, and active participation make government stronger, support sustainable development, and contribute to communities adjust to societal changes [9,15].

The aforementioned theories highlight the importance of social capital in fostering trust, collaboration, and community activities, with a focus on sustainable agro-tourism development [16,17]. This is also the reason why understanding and measuring social capital is gaining an increasingly important direction in community development research [18].

In recent years, social capital emphasizes the importance of social connection, emotional attachment, and perceived rewards in influencing people's continuous participation in online and offline social networks [19,20]. These perspectives suggest that trust, belonging, and interaction, previously considered to be characteristic of traditional communities, are also important mechanisms for maintaining cohesion and cooperation [21]. Combining these approaches adds more framework to the behavioral basis for understanding the role of social capital in agritourism research.

2.2. Community participation in agritourism

Community participation is a key element in the sustainable tourism development model in general and agricultural tourism in particular [22]. There are many different understandings of this concept, but basically, community participation is understood as the process in which local people actively contribute to activities related to planning, organizing, managing and benefiting from tourism programs and projects in

their locality [23]. This participation can take place at many levels, from consulting, contributing ideas, to directly operating or owning tourism products [24]. Some scholars divide community participation into different levels, from passive forms where people only receive information, to more active involvement where they take part in making decisions and carrying out activities [25]. According to Okazaki [24], these levels of participation can be classified on a scale, helping to assess the real level of participation and the sustainability of development models. In reality, many projects only stop at the level of "formal participation", while local people still do not have a real voice and power in important decisions.

In the context of agricultural tourism, local communities are not only "hosts" welcoming tourists, but also creators, storytellers, and preservers of the agricultural and cultural values of the land [26]. Their participation determines the authenticity, attractiveness and sustainability of tourism products. In particular, when people feel respected, have clear benefits and are empowered, they will have greater motivation to maintain and develop the tourism model [27].

However, in many cases, this participation still faces many barriers such as lack of information, organizational skills, finance or support from stakeholders [28]. That is why recent research has begun to focus more on the factors that promote or hinder genuine community participation, including the role of social capital, where networks of trust and cooperation can facilitate the organization and maintenance of tourism activities [9].

In addition to structural participation, recent studies have emphasized the psychological and emotional aspects, including sense of belonging, perceived benefits [29] and emotional attachment, which strengthen residents' motivation in community-based tourism [21]. These factors not only create social cohesion but also maintain the willingness of local residents to cooperate and take responsibility for sustainable tourism development.

2.3. Sustainable agritourism development

Sustainable development in agritourism is not simply about generating economic profits but also ensuring a balance between three factors: economic, social, and environmental [26]. In concept, sustainable agritourism is understood as the process of developing tourism activities associated with agricultural production, in a way that is responsible for the natural environment, respects local cultural values and brings long-term benefits to the community [18]. The principles of sustainable development include: rational use of natural resources, protection of local heritage and culture, creation of stable livelihoods, and promotion of equitable participation of stakeholders, especially local residents [30]. The level of active and voluntary community engagement is one of the major criteria towards achieving sustainability in agritourism [31]. When communities create and organize tourism events, they enrich visitors' experiences and help the community adjust to market and environmental changes [32]. In other words, sustainable development cannot be separated from the proactive role of local people in the process of forming and operating tourism models [33]. In recent times, there are numerous emerging themes and trends that have enriched the concept of sustainable development in agricultural tourism [34]. As an example, ecotourism, flower villages, fruit gardens, aquatic farms, farm to table are all activities that facilitate proximity to nature and promote environmental education to tourists [35]. In addition, community resilience the capacity to adapt to climatic, economic and social changes is becoming an important indicator of destination sustainability [36]. The community's resilience, change effectiveness, and long-term sustainability are all created via social connectedness and togetherness, which are directly tied to this concept.

From the above trends, it can be seen that sustainable agritourism is not only a destination but also a process that requires close coordination between communities, authorities, businesses and tourists in which the local community plays a central role.

3. Methodology

3.1. Keyword strategy and scope definition

Based on the research title and objectives to explore the knowledge structure at the intersection of problem research, a keyword strategy was systematically developed to fully cover the relevant core concepts [37]. First, the phrase “social capital” was selected as the central keyword class reflecting the main theoretical foundation of social relationships, trust networks and community exchanges. Next, to reflect the social behavior and community cohesion, the keyword groups “community participation”, “community engagement” and “local involvement” were included to capture the depth of community participation in the context of tourism development [5]. The concept of “agritourism” representing the specific type of tourism in agriculture, was expanded with equivalent terms such as “agricultural tourism”, “farm tourism” and “rural tourism” to ensure comprehensiveness in data collection. Finally, the keywords “sustainable”, “sustainability” and “sustainable development” were added to filter out documents related to sustainable development goals. All keyword phrases were combined using the logical operators and OR to form a standard search syntax, with the goal of maximizing coverage [38].

3.2. Data collection and processing

The data were also retrieved separately using Web of Science (WoS) and Scopus after identifying the right set of key words and search syntax, and the type of documents was limited to peer-reviewed contributions in the form of journal articles [39]. The query combined three thematic groups of terms. The first group referred to social capital and its sub-dimensions bonding, bridging, and linking, together with related ideas such as trust, social cohesion, and social networks. The second group covered community participation and associated expressions, including community engagement, local involvement, residents, stakeholder participation, and community empowerment. The third group covered agritourism and its related fields, ranging from agri-tourism and agricultural tourism to farm-based tourism and rural tourism, as well as farm and agriculture. The search was restricted to English-language publications, with the query applied to the titles, abstracts, and keywords in line with the indexing structures of the two databases [40].

The data then used the bibliometrix library package to process basic cleaning of the input data. The `convert2df()` function was used to convert the data to a standard analytical format, before using the `mergeDbSources()` function to merge the two data sets [41]. In this step, 227 duplicates were deleted according to the similarity criteria of title, author name, year of publication, and DOI. The end product was 634 distinct files that formed the basis of analysis of the next phases of this study.

3.3. Data analysis techniques

The data were cleaned and consolidated and then further processed using bibliometric analysis techniques to determine the knowledge structure and research trends of the field. The whole analysis process was carried out in the R environment with the bibliometrix package and the Biblioshiny interface and used VOSviewer software to help with the analysis of keywords network [42].

First, the dataset were processed to determine significant indicators, such as the number of authors, the number of articles, the number of sources, the rate of international collaboration, the average age of documents, and the level of citation [39].

Next, the study conducted keyword co-occurrence network analysis to identify the main topic clusters in the field. From here, the keyword clusters were grouped into topic groups according to the degree of connection (total link strength) and frequency of appearance, reflecting the prominent content structure [4]

In addition, thematic mapping was used to classify keywords according to their role and level of development, based on centrality and density indicators. This analysis helps to classify topics into motor themes, basic, niche, and emerging or declining [38].

Finally, to explore the movement of knowledge over time, the study conducted an evolution of research themes to track the changes in the topic structure between different periods [40]. This analysis highlighted the concepts that have been maintained for a long time and the newly emerging topics in recent times. The steps taken in the study are described in each stage by a flowchart in Appendix B.

The results were subsequently visualized using VOSviewer and the Biblioshiny interface to illustrate keyword networks, thematic maps, and the evolution of research themes.

4. Results

4.1. Characteristics of the data collected

Analyzing basic publication statistics provides foundational insights into the structure and evolution of a research field. Table 1 in Appendix A summarizes descriptive indicators (number of articles, authors, keywords, average citations). These indicators reflect the level of interest over time and suggest journal sources and core collaborations [41].

Results are summarized in Table 1 and Fig. 1, the research dataset includes 634 scientific documents collected from two main databases, Web of Science and Scopus, spanning from 1976 to 2025. These documents focus on topics related to social capital, community participation, and sustainable agritourism, and are published in 266 academic sources, mainly peer-reviewed international journals [39].

In addition, in terms of authorship, a total of 3247 researchers contributed to these works, on average each document has 6.49 co-authors, with 61 single-authored papers. International co-authorship accounts for 18.93 % from several countries, indicating academic integration and cross-border research linkages in this discipline [38].

In terms of keywords, the database records 2493 Keywords Plus (ID) and 3308 Author's Keywords (DE), indicating broad topical coverage and multidisciplinary approaches [43]. At the same time, the average age of the documents is 6.99 years, with an average of 21.36 citations per article.

4.2. Keyword co-occurrence network analysis

The study performed a keyword co-occurrence network analysis to define the general concept of the related keywords studied in the area of social capital and community participation in sustainable agritourism. This analysis helps to identify topics with frequencies commonly used by authors in publications, clusters of related words, and highlight research trends and intersections between fields. The results are visualized in Fig. 2 and the prominent keyword trends are presented in Table 2 in Appendix A.

Fig. 2 and Table 2 present the results of the key words co-occurrence network analysis which reveal multi-dimensional knowledge framework with five major key word clusters. Each cluster reflects a specific research orientation, while highlighting central concepts in the relationship between social capital, community participation, and sustainable agritourism development [17].

The cluster 1 (red) in the structure of the analyzed keywords defines the central position of research which focuses on the development of rural areas and sustainability orientation [44]. The keywords were analyzed based on the occurrence index, total link strength to determine the level of connection, “social capital” (81, 404), “social network” (53, 339), “rural tourism” (24, 67) and “sustainability” (28, 162) appeared with high frequency and strong connection in the cluster. Among them, “social capital” (81, 404) and “rural tourism” (24, 67) stand out, reflecting a long-standing academic investment in promoting tourism

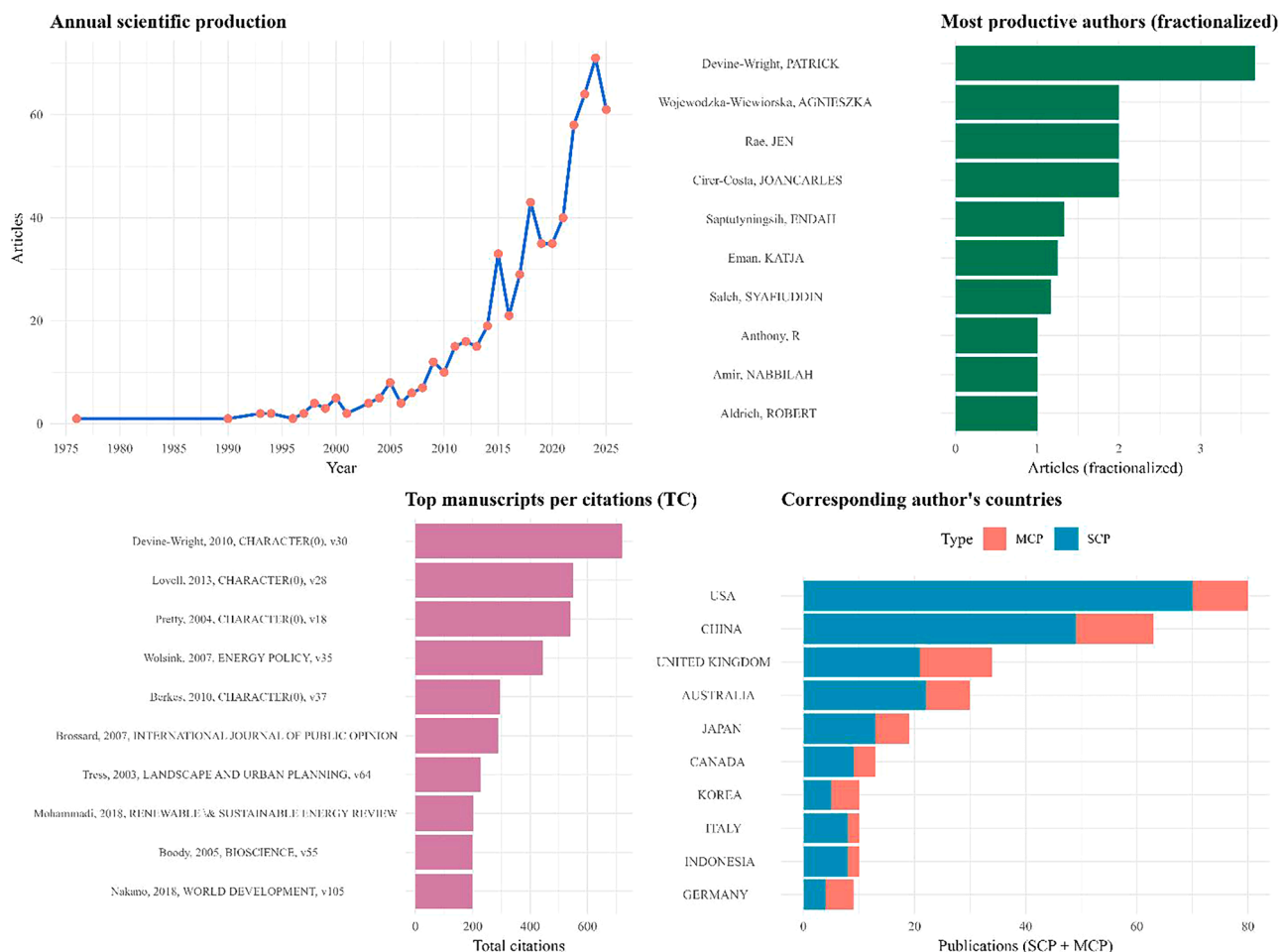


Fig. 1. Development process and academic contributions of the research topic. Source: Author's analysis, 2025.

development in rural areas through a sustainable approach [45,46].

In the keyword structure, cluster 2 (green) focuses on reflecting socio-demographic issues, especially revolving around human and family factors. Notable keywords include "human" (78, 763), "female" (38, 471) and "male" (36, 460), showing a strong interest in gender characteristics and social roles [47]. At the same time, concepts associated with the household context such as "household" (10, 128) and community support through "social support" (6, 65) are also recorded, reflecting the connection between personal life, family and social structure. Overall, this group underlines the humanistic perspective, gender variations and family roles in rural development studies and modern sociology.

Following the community and development issues, cluster 3 (blue) reflects concerns about environmental management and changing rural-urban contexts [48]. The keywords that are noteworthy are "perception" (27, 185), "environmental management" (14, 96), "biodiversity" (15, 98), "land use" (11, 81) and "urbanization" (14, 118). These terms help us to understand the relationship between ecological management and the social impact of development especially in an area that is increasingly urbanized [49]. Of these, perception stands out with the highest frequency among the listed keywords, emphasizing the role of community awareness and stakeholders in shaping environmentally sustainable development strategies.

In another approach, cluster 4 (yellow) focuses on concepts related to governance and local community participation [30]. Notable keywords include "trust" (34, 288), "stakeholder" (19, 116), "stakeholder participation" (15, 91), "governance approach" (17, 120) and

"government" (17, 195). This group of keywords indicates the focus on the discussion of trust as a building process and the contribution of stakeholders to the development management. Of these, "trust" is the keyword with the highest frequency and connection level, showing that trust holds a central position in the relationship between governance structures and stakeholders [49].

Finally, cluster 5 (in purple) reflects issues related to agriculture and food security. Typical keywords include "agriculture" (71, 517), "farmers" (17, 146), "agricultural management" (5, 23), "crops, agricultural" (6, 45) and "food security" (18, 89). This cluster of keywords shows the connection between research on agricultural production, the role of farmers and discussions related to resource management and food security [50]. In this way, this cluster emphasizes that the sustainable agricultural development approach still plays a central role in the research framework on rural and social development.

Analyzing the above keyword clusters, one can conclude that the research area created by the convergence of the social capital, community and sustainable agritourism is deepening its theoretical foundations and diversifying its methods [51]. The topic clusters not only reflect the current state of knowledge, but also suggest potential research directions in the context of transforming rural development models and modern community tourism.

4.3. Thematic mapping and cluster analysis

In order to determine the position, role and level of development of each topic in the overall research picture, the study continues to conduct

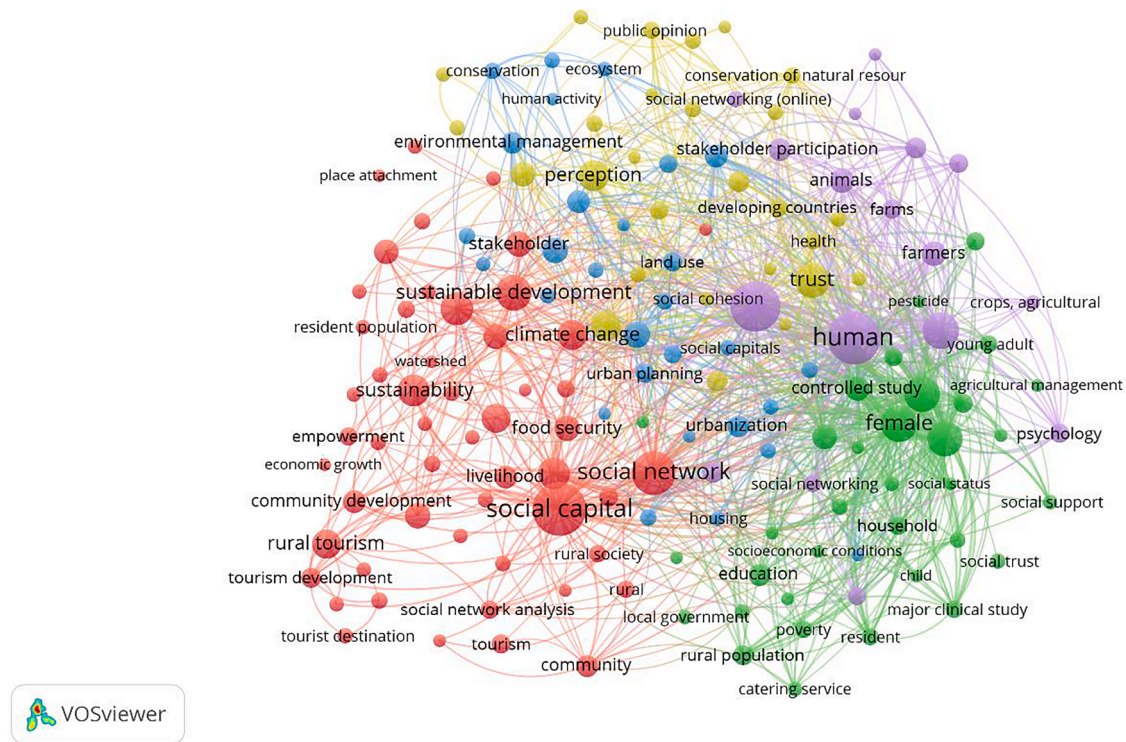


Fig. 2. Identify key topics and prominent keyword trends.
Source: Author's visualization, 2025.

thematic map analysis. The detailed centrality indicators are presented in [Table 3](#) of [Appendix A](#) to provide a quantitative basis for the assessment of the topic structure. This analysis is shown in [Fig. 3](#), which helps to classify the topics into central groups, foundational topics, emerging topics or topics showing signs of decline, thereby providing a landscape

of knowledge structure and potential research directions for the next researcher.

From the description of Fig. 3, the upper right quadrant can represent motor themes, it appears that the topics have a high level of development and are strongly linked to other research keywords.

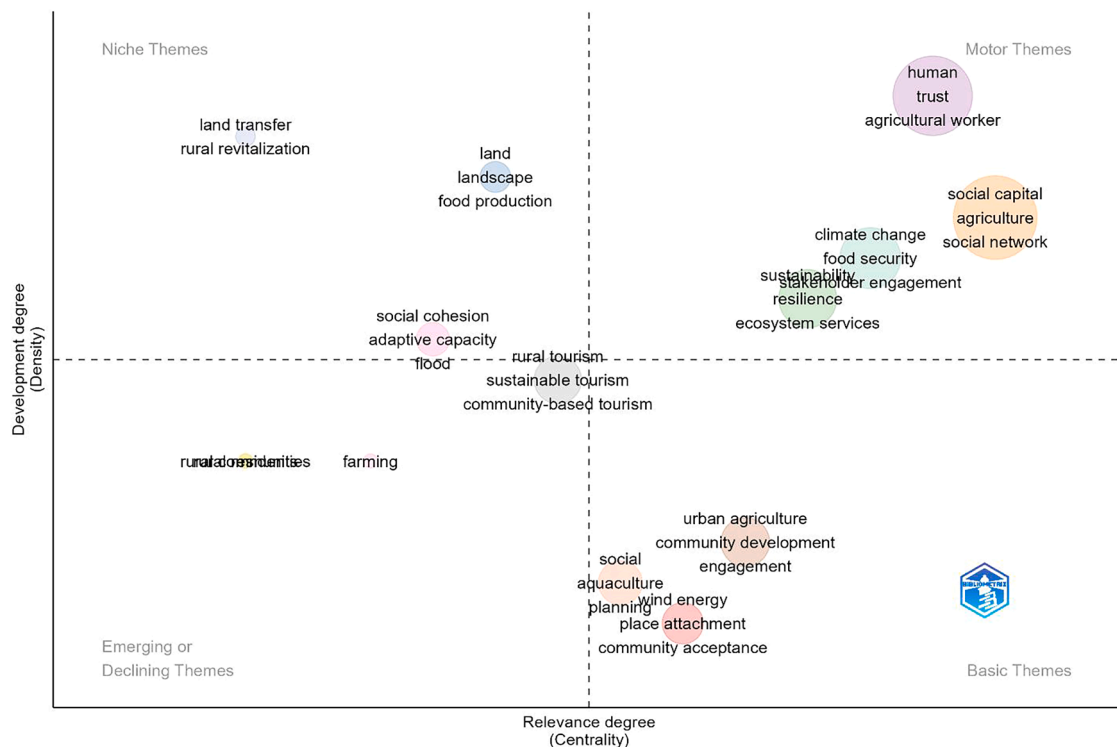


Fig. 3. Thematic map shows the location and growth level of keyword phrases. Source: Author's visualization, 2025.

Symmetrically to the left, the upper left quadrant is the area of niche themes, representing topics with high academic depth but little connection to other content axes. Keywords such as “land transfer” (Occurrences = 3; btw centrality = 3.548), “rural revitalization” (3; 3.548), “landscape” (4; 8.728), or “food production” (3; 24.579) often appear here, showing that these are specific and context-dependent approaches, typically applied in localized studies or methodological explorations [52,53].

In the upper right quadrant, the motor themes are located, reflecting topics with both high density and high centrality, thus acting as driving forces in the field. In this corner, the distribution of keywords with higher centrality and density values than other groups, such as “social capital” (76; 1597.1), “agriculture” (59; 1233.2), “trust” (34; 716.0), “social network” (31; 675.3), “people” (49; 345.1) and “agricultural workers” (21; 431.3). This may indicate that the topics are of interest, providing strong connections and development momentum for the research network [54,55].

The lower right of the map is the area of basic themes, which is where the foundational concepts that are widely linked but not yet deeply developed in academic terms are concentrated. In this group, keywords such as “urban agriculture” (17; 127.312), “community development” (12; 159.204), “community acceptance” (6; 3.627), “place attachment” (7; 163.945), “aquaculture” (8; 8.834), and “wind energy” (8; 32.591) act as conceptual anchors connecting the fields. Although not as densely populated as the specialized topics, this group maintains a lasting influence and often appears in the theoretical framework of many studies [56,57].

Finally, the lower left quadrant is where emerging or declining themes appear, that is, topics that are rising or gradually declining in academic interest. Keywords such as “rural communities” (4; 20.776), “farming” (4; 2.391), and “rural residents” (4; 3.674) often fall into this area. The presence of these keywords suggests that the topics related to rural livelihood practices and localized agricultural traditions are receiving only limited attention, and their trajectory remains uncertain in terms of long-term academic relevance [58,59].

The thematic analysis reveals a diverse and well-structured research landscape, in which approaches to “social capital,” “agriculture,” and “trust” are increasingly connected through interdisciplinary perspectives. The functional grouping not only helps to determine the level of development of each theme, but also lays the foundation for building a strategy for expanding, deepening, and integrating content in subsequent interdisciplinary studies.

4.4. Evolution of research trends over time

To better understand the development and shift of research topics over time, the study conducted a movement analysis of trends and evolution of the topics. The results are presented in two phases and depicted in Fig. 4. The process of keyword transition in the publication of detailed publications is presented in Table 4 of Appendix A.

From the analysis and description of Fig. 4, it can be seen that the most obvious shift in keywords is that initial studies focused on global environmental issues (e.g., “climate change -> sustainable development” (Weighted Inclusion Index = 0.27; Inclusion Index = 0.14) and “climate change -> human” (0.33; 0.14)), which have gradually given way to social structural concepts, typically “community -> social capital” (0.32; 0.20) in the recent period [60,61]. The high inheritance index in some pathways, e.g., “empowerment -> community empowerment” (1.00; 1.00) and “impact -> policy” (0.67; 1.00), shows that this is a stable transition process with a clear academic basis. This shift exhibits a trend in which researchers are slowly moving beyond viewing sustainable development strategies through the prism of environmental impacts and focusing more on community strength and social networks [62,63].

Following that movement, tourism models associated with ecology and community in the period 1976–2020 such as “community-based tourism” have expanded their connotations and been inherited by newer topics such as “rural tourism” (0.33; 0.50) and “community development” [64,65]. Likewise, “rural development” -> “rural tourism” (0.29; 0.17) and “rural development” -> “sustainable development” (0.29; 0.17) illustrate the extension of tourism and development linkages in the second period [66,67].

In the group of keywords related to socio-economic development, the common community in the early stage was separated into specific directions such as “community -> sustainable development” (0.36; 0.20) and “community -> social capital” (0.32; 0.20) [64,68]. In addition, the transition routes showing social-institutional cohesion include “public participation -> community acceptance” (0.24; 0.20) and “land tenure -> social capital” (0.22; 0.33). The observed relationships are used as the predictors of the concepts development both at the community and policy level [69,70].

Another notable trend is the persistent presence of ideas about adaptive capacity, reflected in the relationship “resilience -> social capital” (0.27; 0.25) [71]. The directions “human -> policy” (0.60; 0.50) and “human -> human” (0.40; 0.02) clarify the involvement of human

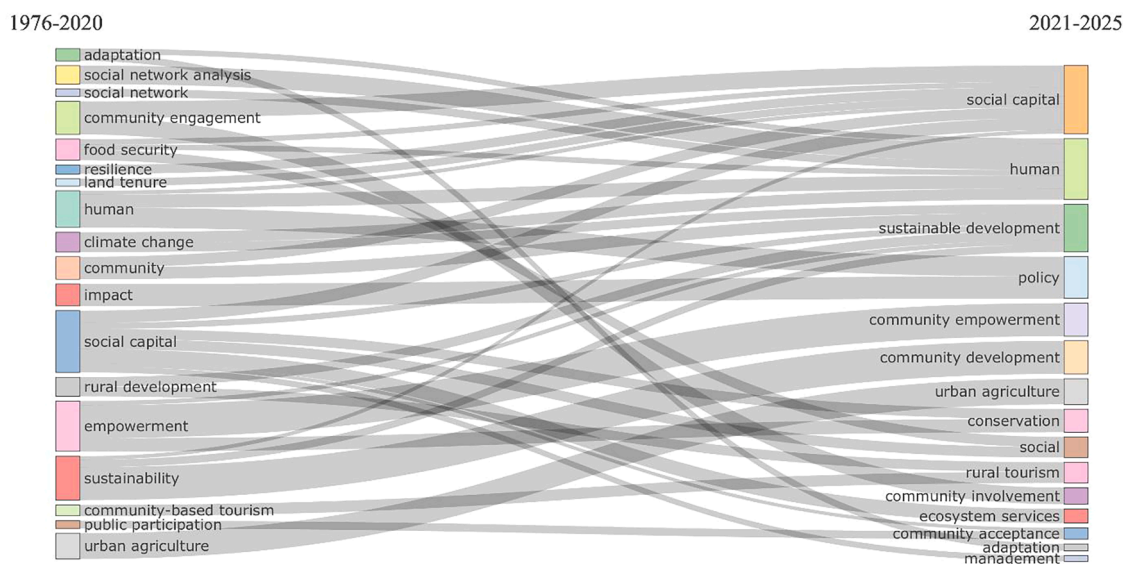


Fig. 4. Keyword conversion process in author's publications.
Source: Author's visualization, 2025.

and institutional variables in policy, individual behaviors, and social connections [72,73].

A notable point is the ability to integrate old theories and new trends, demonstrated through co-occurring pathways where “social capital” connects multi-directional: “social capital -> ecosystem services” (0.43; 0.33), “social capital -> conservation” (0.30; 0.25), “social capital -> rural tourism” (0.06; 0.14), “social capital -> social” (0.31; 0.20), “social capital -> management” (0.18; 0.20), and “social capital -> sustainable development” (0.18; 0.04). Over time, the keywords still have the inheritance “social capital -> social capital” (0.37; 0.02) in the research network [54,74].

In general, the detailed keywords presented in Table 4 and the keyword flow in Fig. 4 show that the process of academic change is inherited but selective; fundamental concepts still play a pivotal role but are restructured, specialized, and associated with new concerns. Particularly in the direction towards sustainable development, policy, community empowerment, involvement, and rural tourism during the period 2021–2025.

5. Discussion

In the context of community-based and rural tourism development models increasingly focusing on sustainability and resilience, identifying shifts in the academic knowledge system becomes particularly important. The results above show that research topics are no longer limited to broad labels (e.g., “community-based tourism” in the early phase) but are gradually shifting toward more structurally central factors such as “social capital”, “agriculture”, “trust”, “social networks”, and “policy”. This transition is consistent with the observed inheritance pathways, e.g., “climate change -> sustainable development” (0.27; 0.14) and “community -> social capital” (0.32; 0.20) and is especially evident in “empowerment -> community empowerment” (1.00; 1.00) and “impact -> policy” (0.67; 1.00). Taken together, these patterns indicate a shift from impact-oriented environmental framing to an emphasis on community-embedded social mechanisms underpinning sustainable development. To be more objective, the following discussion probes the meaning of these results, clarifies the drivers behind the topic shifts, and assesses the central role of social capital, together with community empowerment/involvement and policy linkages in shaping an interdisciplinary agenda.

5.1. Interpreting knowledge transitions

The shift in the structure of keywords across the two periods reflects not only a change in terminology but a fundamental change in research approach. In the early stage, broad global concepts (e.g., “climate change”, “development”) served as a common theoretical base. Over time, these topics have given way to more social-structural concepts, especially “social capital”, “trust”, “social networks”, and community-facing mechanisms, supported by high inheritance scores on several paths (e.g., “climate change -> sustainable development” (0.27; 0.14); “climate change -> human” (0.33; 0.14); “community -> social capital” (0.32; 0.20); “empowerment -> community empowerment” (1.00; 1.00); “impact -> policy” (0.67; 1.00) [60]. This pattern signals a maturing understanding of sustainable development: emphasis moves from environmental impacts toward endogenous capacity and community empowerment/involvement [9].

The emphasis of tourism research has switched from community-based tourism to other areas of community development (0.33; 0.50) and rural tourism [65]. In addition, the directions “rural development -> rural tourism” (0.29; 0.17) and “rural development -> sustainable development” (0.29; 0.17) reflect the expansion in the second phase [75]. The rise of terms such as livelihoods, poverty, and community empowerment (2021–2025) demonstrates how research is shifting to the micro level, closer to ordinary life [17]. This issue, which can be viewed as a background field, studies increasingly place it in the broader

context of social development, economic transformation and the adaptive capacity of local communities.

5.2. The role of social capital in interdisciplinary research

In the process of shifting research topics, “social capital” not only appeared as an emerging keyword, but gradually asserted its central role in connecting different approaches. The analysis results from the keyword map showed that “social capital” not only inherited from previous topic clusters such as “stakeholders”, “tourism development” or “resilience”, but also played the role of an intersection between many research axes of “rural development”, “governance, policy” and “community empowerment” [64,76].

This suggests that, rather than being seen as a fundamental social factor, social capital is increasingly being used as a flexible concept that can be integrated into many fields: from rural development planning, to tourist behavior research, or community support policies. It is the ability to connect trust, networks, and citizen participation that makes social capital an important tool in research aimed at sustainable development [70,77].

Not only that, in some interdisciplinary key phrases such as “empowerment - participation - trust”, social capital acts as a bridge between concepts that are inherently qualitative and difficult to measure. This will assist in bridging the gap between theory and practice, particularly the resilience studies, poverty alleviation and wellbeing in rural societies [78,79].

It can be seen that the flexible and adaptable state of the concept of social capital has helped it not only survive but also develop in many different academic fields. From this perspective, social capital is not only a “subject”, but also a “thinking tool” that helps researchers connect data, analyze contexts and propose policies in highly interdisciplinary fields such as community-based tourism, rural development and local governance.

5.3. Extensive discussion of theory and applications

Based on the analyzed thematic shifts, it can be seen that the field of research on community-based tourism and rural development is entering a period of clear transformation. The fact that concepts such as “social capital”, “resilience”, “empowerment”, “livelihood”, “agriculture”, “trust”, “social networks”, and “policy” appear more frequently and connect to many other topics shows the need for an integrated theoretical framework reflecting the current development context [62].

One theoretical development is combining social capital with frameworks of community empowerment, local ecosystems, and policy-linked rights-based approaches [66,67]. For example, studying the relationship between “social capital” and “poverty” (Inclusion Index = 1.00) opens opportunities to treat social capital as a poverty-reduction lever in rural areas [4,44]. At the same time, the terms “participation,” “trust,” and “governance” have the potential to act as mediators or moderators in conceptual frameworks that are yet to be developed [69].

In practice, the findings of the research may be used to inform community-based tourism initiatives linked to sustainable agriculture, green transition and climate change adaptation [80]. In addition, product design and development should focus on strengthening community capacity, promoting social cohesion and ensuring equity in benefit sharing, while linking economic goals with resilience and livelihood improvement [81]. This approach is long-term, sustainable, and better able to adapt to socio-economic fluctuations [71].

In addition, bibliometric-style, data-intensive methods provide a systematic way to trace knowledge flows and identify gaps to explore further, consistent with modern trends where big data and network analysis are effective tools in rural communities [82].

6. Conclusion and implications

This study was conducted to explore the knowledge structure and development trends of research topics related to community-based tourism and sustainable agriculture in the contemporary context. The key finding is that social capital has gradually become the pivotal concept connecting different subfields, rural development, sustainable development, governance or policy, and community empowerment, and while also opening new avenues such as, poverty reduction, and community resilience [83]. This research is unique in showing, with data and visual analysis, how “social capital” moved from a minor topic to a major focus over nearly 30 years of academic development. This result is reinforced by the keyword co-occurrence network, in which “social capital” shows a high frequency (81) and strong connection (404), along with the keywords “trust” (34; 288) and “social network” (53; 339), reflecting its connecting role between sub-domains. Similarly, the centrality analysis shows that “social capital” is among the strategic keywords with a prominent position (btw centrality = 1597.1). The results of the thematic evolution analysis identified a terminological shift towards the development of “community -> social capital” (Weighted Inclusion Index = 0.32; Inclusion Index = 0.20). The shift reflected the research focus from describing communities to examining social mechanisms such as trust, cooperation and networks in the development process.

In the academic field, the high frequency and wide association of the keyword “social capital” confirms the connection of research directions related to rural development, sustainability, governance and community participation. Multidisciplinary perspectives regard social capital as a transforming process of trust, cooperation, and community cohesion that increases modern society’s resilience and develops [25]. The inheritance from topics such as “stakeholders”, “tourism development” or “resilience” and the expansion to “empowerment”, poverty reflects the high adaptability and cross-disciplinary nature of social capital [83]. This is a positive sign that the academic community is increasingly moving towards building an integrated framework that is flexible enough to explain development issues in a changing context [84]. The above results show that the main contribution of the study is to move beyond the descriptive approach, aiming to clarify the linkages between social capital, community participation, sustainable development, which is considered as the current knowledge base of the field. Through the combination of keyword network analysis, centrality and topic evolution. At the same time, the study has shown how trust, network and participation operate as connecting mechanisms between research streams on rural development, governance, policy and community empowerment.

For policy makers, the results support social capital as not only a contextual factor, but also a lever that can be measured and effectively used in the development of community-based tourism development

strategies [6,9]. Conceptualizing social capital as a policy instrument will help shape intervention programs to enhance trust, networking, and public administrative capacity in sustainable tourism development.

From the above analysis, future research should focus on empirically testing the relationships between social capital and factors such as resilience, poverty or community participation [7,14]. In addition, it is necessary to expand the scope of research by combining academic network analysis with field-based approaches to provide a landscape of the effectiveness and limitations of current development models. With a solid theoretical foundation and a clear shift in the topic, this study is expected to contribute a small part to the process of restructuring knowledge and shaping development thinking in the fields of community-based tourism and sustainable agricultural, rural development.

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Ethical approval

This bibliometric study used secondary data from open-access databases and did not involve any human participants. Ethical approval was not applicable.

Data availability

The dataset supporting the findings of this study has been published on Mendeley Data and is openly accessible at <https://data.mendeley.com/preview/sx9hnmkh4f?a=687afb37-61aa-4250-94ec-92370b252e1d>.

CRediT authorship contribution statement

Nguyen Van Ninh: Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Tran Van Tam:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis.

Declaration of competing interest

The authors declare no conflict of interest.

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Appendix A. Descriptive and network analysis statistics

Table 1
General information about datasets.

Description	Results	Document Contents	Results
Timespan	1976–2025	Article	488
Sources	266	Book chapter	11
Documents	634	Others	135
Annual growth rate (%)	8.75	Keywords Plus (ID)	2493
Document average age	6.99	Author’s Keywords (DE)	3308
Average citations per doc	21.36	Authors	3247
WoS	391	Single-authored docs	61
Scopus	470	Co-Authors per Doc	6.49
Duplicated documents removed	227	International co-authorships (%)	18.93

Source: Author's analysis, 2025.

Table 2

Clustering results of author keywords according to the degree of association.

Cluster	Color	Keywords	Occurrences	Total link strength
1	Red	Social capital	81	404
1	Red	Social network	53	339
1	Red	Rural tourism	24	67
1	Red	Sustainability	28	162
1	Red	Sustainable development	35	197
2	Green	Human	78	763
2	Green	Female	38	471
2	Green	Male	36	460
2	Green	Household	10	128
2	Green	Social support	6	65
3	Blue	Perception	27	185
3	Blue	Environmental management	14	96
3	Blue	Biodiversity	15	98
3	Blue	Land use	11	81
3	Blue	Urbanization	14	118
4	Yellow	Trust	34	288
4	Yellow	Stakeholder	19	116
4	Yellow	Stakeholder participation	15	91
4	Yellow	Governance approach	17	120
4	Yellow	Government	17	195
5	Purple	Agriculture	71	517
5	Purple	Farmers	17	146
5	Purple	Agricultural management	5	23
5	Purple	Crops, agricultural	6	45
5	Purple	Food security	18	89

Source: Author's analysis, 2025.

Table 3

Centrality index of strategic keywords in the research network.

Keywords	Occurrences	btw_centrality	clos_centrality	pagerank_centrality
Social capital	76	1597.141	0.002	0.019
Agriculture	59	1233.237	0.002	0.026
Trust	34	716.008	0.002	0.014
Social network	31	675.273	0.002	0.012
Agricultural worker	21	431.271	0.002	0.014
Human	49	345.086	0.002	0.036
Place attachment	7	163.945	0.002	0.002
Community development	12	159.204	0.002	0.003
Rural tourism	27	144.776	0.002	0.005
Urban agriculture	17	127.312	0.002	0.003
Social cohesion	6	60.316	0.002	0.002
Social	12	45.748	0.002	0.002
Engagement	7	34.809	0.002	0.002
Wind energy	8	32.591	0.002	0.002
Planning	5	25.767	0.002	0.002
Food production	3	24.759	0.002	0.002
Rural communities	4	20.776	0.002	0.001
Sustainable tourism	6	12.867	0.002	0.002
Aquaculture	8	8.834	0.002	0.002
Landscape	4	8.728	0.002	0.001
Community acceptance	6	3.627	0.002	0.002
Land transfer	3	3.548	0.002	0.001
Rural revitalization	3	3.548	0.002	0.001
Flood	4	2.5	0.002	0.001
Farming	4	2.391	0.001	0.001
Community-based tourism	5	1.548	0.001	0.001
Land	4	1.369	0.002	0.001
Adaptive capacity	4	0.454	0.002	0.001
Rural residents	4	3.674	0.002	0.002

Source: Author's analysis, 2025.

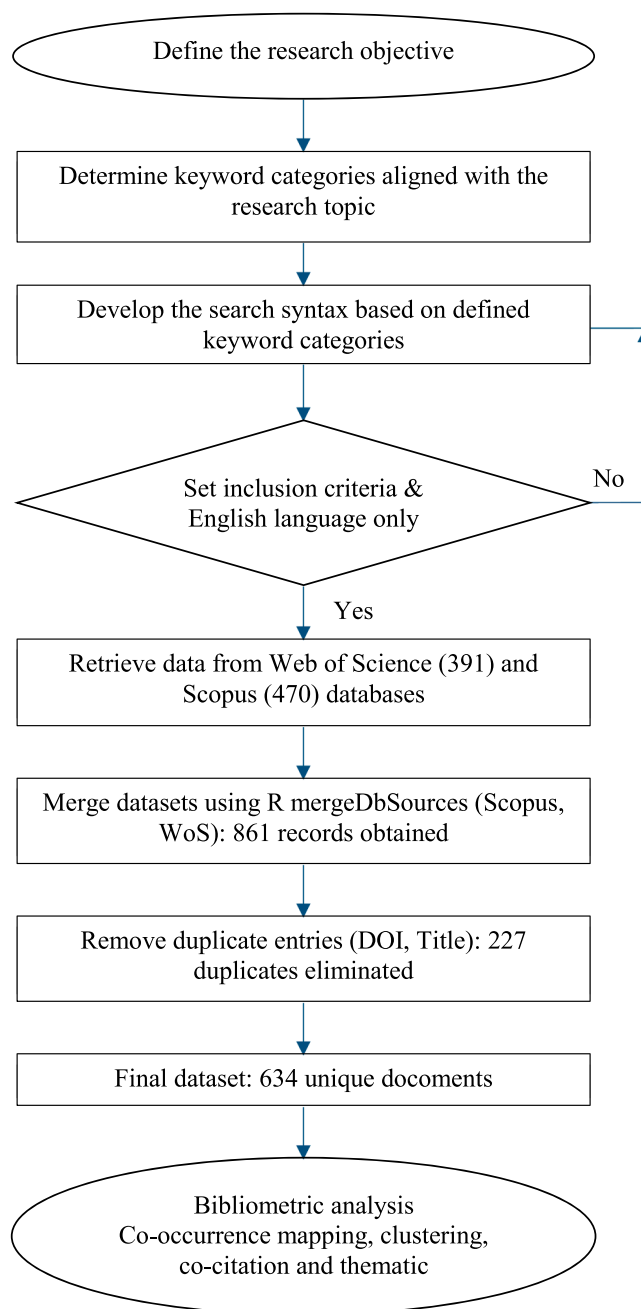
Table 4

Keyword shift between the two periods 1976–2020 and 2021–2025.

From 1976–2020	To 2021–2025	Weighted inclusion index	Inclusion index	Occurrences	Stability index
Adaptation	Adaptation	0.21	0.14	6	0.06
Adaptation	Human	0.17	0.14	4	0.01
Climate change	Human	0.33	0.14	5	0.01
Climate change	Sustainable development	0.27	0.14	8	0.03
Community	Social capital	0.32	0.2	9	0.02
Community	Sustainable development	0.36	0.2	6	0.03
Community engagement	Community involvement	0.5	0.5	4	0.25
Community engagement	Social capital	0.5	0.33	6	0.02
Community-based tourism	Rural tourism	0.33	0.5	3	0.13
Empowerment	Community empowerment	1	1	2	0.13
Empowerment	Conservation	0.4	0.25	4	0.09
Empowerment	Sustainable development	0.13	0.13	5	0.03
Food security	Human	0.16	0.06	7	0.01
Food security	Social	0.31	0.2	5	0.05
Food security	Social capital	0.16	0.06	9	0.02
Human	Human	0.4	0.02	26	0.01
Human	Policy	0.6	0.5	6	0.02
Human	Social capital	0.11	0.02	21	0.01
Human	Sustainable development	0.02	0.04	4	0.01
Impact	Policy	0.67	1	3	0.5
Land tenure	Social capital	0.22	0.33	3	0.02
Public participation	Community acceptance	0.24	0.2	4	0.08
Resilience	Social capital	0.27	0.25	3	0.02
Rural development	Rural tourism	0.29	0.17	9	0.08
Rural development	Sustainable development	0.29	0.17	11	0.03
Social capital	Community acceptance	0.1	0.13	3	0.02
Social capital	Conservation	0.3	0.25	4	0.02
Social capital	Ecosystem services	0.43	0.33	6	0.02
Social capital	Human	0.05	0.02	7	0.01
Social capital	Management	0.18	0.2	3	0.02
Social capital	Rural tourism	0.06	0.14	6	0.02
Social capital	Social	0.31	0.2	7	0.02
Social capital	Social capital	0.37	0.02	46	0.01
Social capital	Sustainable development	0.18	0.04	10	0.01

Source: Author's analysis, 2025.

Appendix B. Summary of main steps in the science mapping approach



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