

REVIEW



Agri-Social entrepreneurship in transition: A bibliometric and thematic review (2000–2025)

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ABSTRACT

This study presents a comprehensive bibliometric and thematic analysis of scholarly research on Agri-social entrepreneurship (ASE) from 2000 to 2025, to explore the evolution, maturity, and emerging directions of academic contributions in this field. Using VOSviewer software and papers from various scientific sources, the study uses network and overlay visualization techniques to depict the evolution of research during the past 25 years. Key patterns are highlighted in the report, such as the growing amount of scholarly production, the most influential authors, prestigious journals, well-known publishers, and the geographical distribution of research contributions. This review explicitly views ASE as the nexus of agricultural innovation and social value creation, in contrast to more general studies on social or agricultural entrepreneurship. PRISMA-compliant screening procedures and predetermined, repeatable search phrases were used to gather data from Scopus and Web of Science. VOSviewer (version 1.6.19) was used to analyze 535 peer-reviewed journal articles, book chapters, and review papers following quality screening. The results reveal that there are three main intellectual clusters: (1) agricultural innovation driven by sustainability and resilience; (2) hybrid social-business models in rural settings; and (3) support frameworks based on institutions and ecosystems. Individual entrepreneurial features (2000–2010), social inclusion and rural development (2011–2020), and youth-led, technology-enabled, and climate-resilient models (2021–2025) are clearly shown in the overlay visualization. In addition to offering guidance for future research, policy design, and practice, this study offers a unique conceptual and empirical mapping of ASE as a developing area. Differentiating the research environment of Agri-social entrepreneurship from more generic topics like general entrepreneurship and social entrepreneurship is given particular focus, enabling a clearer understanding of its unique thematic and practical relevance. The study notes changes in the focus of research, from early studies of risk-taking and entrepreneurial characteristics to more contemporary issues, including resilience, sustainability, youth involvement, and socioeconomic impact in agriculture. This review provides useful insights for scholars, policymakers, and practitioners by charting the field's intellectual structure and thematic growth. In the quickly changing field of agricultural and social entrepreneurship, it assists in identifying important areas of study, new research hotspots, and possible directions for further research.

KEY WORDS

Entrepreneurship; Agri-Social entrepreneurship; social entrepreneurship; Bibliometric analysis; Agricultural innovation

ARTICLE HISTORY

Received 03 October 2025;

Revised 27 October 2025;

Accepted 04 November 2025

Introduction

Greg Dees began teaching social entrepreneurship at Harvard more than 35 years ago, in 1990. Since the course was derided as "career suicide," social entrepreneurship has gained popularity and been thoroughly researched. Researchers and decision-makers throughout the world are beginning to see social entrepreneurship as a driving force behind creative solutions to complex societal problems.

The literature on social entrepreneurship in agriculture has grown since its beginning in the late 1980s. Researchers are examining the phenomenon to precisely describe the concept [1]. The factors influencing the intention to engage in social entrepreneurship have been the subject of numerous research. Because social entrepreneurship intersected with commercial entrepreneurship (in terms of using innovative ideas and commercially viable strategies) and charitable organizations (in terms of their aim), a definition was required. They aim to address social concerns, just as charitable organizations, but they also employ strategies to sustain their activities over time [2].

According to this context, with many similarities to entrepreneurship studies, the current study aims to comprehend the emergence of the concept of social entrepreneurship [3]. With a focus on the annual and regional contributions of studies, the objective is to establish the field's importance, top research, and publications [4]. Social entrepreneurship the process of resolving market failures with creative, financially viable ideas intended to address social problems has grown in popularity as the public, commercial, and nonprofit sectors have grown [5]. Social problem-solving integrates the emphasis on innovation, risk-taking, and large-scale transformation that characterizes corporations, governments, and non-profit organizations in addition to representing characteristics of these entities [6].

The goal was to comprehend the "Social Entrepreneurship" research trend from 1990 to 2025. Information from academic research papers was used in the investigation. The search was limited to books, book chapters, and journal articles. With social entrepreneurship as the study's focus, 535

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academic articles from books, journals, and book chapters were monitored. A comparable exercise was conducted on the Mendeley Reference Manager Database. Agripreneurship and social entrepreneurship have mostly emerged as separate academic fields. But the new idea of ASE is a unique phenomenon where agricultural endeavors are primarily intended to produce quantifiable social benefit in addition to commercial success. ASE comprises entrepreneurial endeavors that function within agricultural systems and purposefully integrate agricultural innovation with social impact goals like food security, rural inclusion, poverty alleviation, and environmental sustainability. Agripreneurship and ASE differ in that the former concentrates on commercial agricultural endeavors, while the latter may not be integrated into agricultural value chains. No previous study has used bibliometric tools to systematically map ASE as an independent intellectual subject, despite the rising literature on both topics. Despite the expanding body of research on social entrepreneurship, few studies have used bibliometric analysis to look at its agricultural component. This study, therefore, addresses the following research questions: -

- (1) What are the key thematic clusters within ASE research?
- (2) How has the intellectual structure of the field evolved from 2000 to 2025?
- (3) Which authors, countries, and journals have most influenced this domain?

Review of Literature

The academic literature on social and agricultural entrepreneurship has evolved from conceptual definitions in the early 2000s to complex, data-driven analyses integrating sustainability, innovation, and inclusivity. The review below traces this progression across three phases (i) early conceptual foundations (2000–2010), (ii) thematic diversification and institutional focus (2011–2020), and (iii) contemporary directions and sustainability orientation (2021–2025) and concludes with a synthesis of research gaps.

Early conceptual foundations (2000–2010)

Early research focused on defining entrepreneurship and social value creation [2,3,7]. However, agricultural applications remained underexplored, resulting in weak conceptual embedding of agriculture within social innovation frameworks. The early phase of research sought to define social entrepreneurship and to differentiate it from commercial or philanthropic ventures. Johnson produced one of the earliest conceptual reviews, framing social entrepreneurship as a hybrid model that merges profit-oriented strategies with social-mission objectives [7]. Casson underscored entrepreneurship as a behavioural and cultural process characterized by creativity, innovation, and risk-taking principles later embedded in social enterprise theory [3].

Short et al. and Doherty et al. elaborated on the hybrid nature of social enterprises, explaining how they balance economic sustainability with social impact [2,5]. During this formative period, the literature remained largely conceptual and Western-centric, focusing on definitional clarity rather than empirical validation. The absence of agriculture-specific applications and rural perspectives created a critical research gap that later scholars sought to address.

Thematic diversification and institutional focus (2011–2020)

Studies during this phase began contextualizing entrepreneurship within rural and agricultural development [8,9]. Institutional supports such as agricultural extension systems and rural innovation hubs emerged as critical enablers. Between 2011 and 2020, research expanded toward empirical applications, institutional influences, and the socioeconomic outcomes of entrepreneurship in agriculture.

Deshmukh and Kadam analyzed agricultural students' entrepreneurial attitudes and confirmed that experiential learning modules significantly strengthened self-employment intentions [8]. Mohapatra et al. positioned social entrepreneurship as a mechanism for economic transformation and livelihood security, particularly in India's agricultural sector [9]. Peerally et al. examined inclusive innovation in Bangladesh's Grameen Danone Foods, demonstrating how capability-building enables social ventures to address local market failures [6].

Withanage and Damayanthi highlighted youth aversion to agricultural careers in Sri Lanka and identified institutional support, training, and positive parental perception as key determinants of youth engagement [10]. Similarly, Mohammad and Shaari found that communication apprehension among graduates significantly influences their entrepreneurial career choices, implying that soft-skill development is vital to entrepreneurial success [11].

Studies such as Majhi connected productivity and social innovation in Indian agriculture, while Saulsters et al., investigated fairness and ethical conduct in alternative food networks, revealing social entrepreneurship's role in creating equitable agri-food systems [1,12]. Collectively, this decade marks a clear transition from theoretical debate to evidence-based inquiry focused on educational, behavioural, and institutional determinants of agripreneurship.

Contemporary directions and sustainability orientation (2021–2025)

Recent work integrates resilience, climate adaptation, youth engagement, and digital platforms [13,14]. ASE increasingly functions as a mechanism for sustainable food systems and inclusive rural transformation. The most recent literature (2021–2025) reflects a mature, interdisciplinary perspective emphasizing sustainability, resilience, inclusion, and technological innovation within ASE.

Santos observed that social entrepreneurship has become a key instrument for public engagement and ethical responsibility, integrating business logic with societal transformation [15]. Campigotto-Sandri et al. used bibliometric mapping to identify dominant clusters around social innovation, hybrid organizations, and entrepreneurial orientation, confirming the field's intellectual consolidation [4]. Subsequent analyses by Iskandar et al. and Rezaei et al. extended this work, charting publication trends and thematic convergence in social entrepreneurship research [16,17].

Recent open-access studies (2019–2025) deepen the understanding of regional and sectoral nuances:

- Deže et al. examined social innovations for competitive agriculture in peripheral European regions, highlighting innovation as a driver of rural sustainability [13].

- Agholor et al. explored agri-entrepreneurial resilience among South African smallholders, finding strong correlations between demographic traits and business success [14].
- Kumar and Yadav, analyzed agri-entrepreneurship support systems in Assam, India, demonstrating the value of policy, finance, and training in fostering sustainable rural livelihoods [18].
- Kaur et al. investigated the role of social-media platforms in promoting agri-entrepreneurship in Punjab, illustrating digital tools' contribution to awareness and market access [19].
- Gupta and Dutta provided a case study of Karnataka (India), showing how ASE directly contributes to rural transformation and inclusive growth [20].
- Barman and Singh presented a bibliometric exploration that underscores farmers' central role as innovators and knowledge producers in the agri-entrepreneurial ecosystem [21].
- Rock et al. emphasized the normative and aspirational dimensions of sustainability among young agri-entrepreneurs [22].

Together, these studies reveal a decisive scholarly shift toward sustainability-oriented, youth-driven, and gender-inclusive entrepreneurship, supported by digital technology and policy ecosystems. They also show that ASE has emerged as a distinct research frontier combining economic viability, environmental stewardship, and social empowerment.

Synthesis and identified research gaps

A synthesis of the reviewed literature reveals several key insights and unresolved issues:

1. **Conceptual evolution:** The field has matured from definitional debates (2000s) to empirical and bibliometric analyses (2020s), confirming its interdisciplinary nature.
2. **Contextual imbalance:** Despite new studies in South Asia and Africa, research remains dominated by Western contexts; localized bibliometric analyses are scarce.
3. **Thematic fragmentation:** While sustainability, gender, and digital innovation have gained traction, few studies holistically integrate these dimensions within agricultural ecosystems.
4. **Bibliometric void:** No comprehensive bibliometric study specifically maps ASE as an independent domain, leaving its intellectual structure and research networks underexplored.
5. **Methodological limitations:** Most empirical works rely on qualitative case studies; quantitative and mixed-method bibliometric models remain limited.

The identification of research gaps like Conceptual evolution, Contextual imbalance, Thematic fragmentation, Bibliometric void, Methodological limitations, Absence of standalone bibliometric maps of ASE, Overlap and conceptual confusion between agripreneurship and social entrepreneurship, Limited quantitative, network-based evolution studies, Underrepresentation of Global South ecosystems in bibliometric literature justify the present study's objective to employ a comprehensive bibliometric

and thematic analysis (2000–2025) to trace intellectual evolution, collaboration patterns, and emerging research frontiers in ASE. This study aims at the following;

1. To identify leading authors, institutions, and countries contributing to ASE research.
2. To map keyword co-occurrence and thematic evolution from 2000–2025.
3. To analyze citation, co-citation, and co-authorship networks.
4. To identify research gaps and propose directions for future studies.

Research Methodology

Investigating the research gap in social entrepreneurship in agriculture is the aim of this study. A comprehensive table summarising the relevant research is created by using bibliometric analysis to examine the quantity, distribution, and contents of the numerous studies about social entrepreneurship and agriculture. More specifically, this study uses a descriptive design, and its primary goal is to present systematic data from secondary research on social entrepreneurship studies in the agriculture sector.

The bibliometric technique is favoured for this study's analysis of secondary data through the use of certain field-related keywords, as it is a common qualitative research method, particularly in the modern day. "Social entrepreneurship" and "agriculture", "social entrepreneur" and "crops", "social entrepreneur" and "food", "social entrepreneurship" and "entrepreneurship", "social entrepreneurship" and "business", "social entrepreneurship" and "food", "social entrepreneurship" and "society", "social enterprise" and "crop diversification", "social enterprise" and "Enterprise", "social enterprise" and "agri-entrepreneur", "social enterprise" and "agripreneur", "social business" and "entrepreneurship", "social business" and "food", "social entrepreneurship" and "entrepreneurship", "social business" and "farmers", "social business" and "agriculture".

VosViewer software was used to create the network visualization maps and subsequent analysis. Through network visualization and density visualization, the network as depicted in the picture was created using the text and abstract in conjunction with the full counting approach. With 2507 items, 30 clusters, 174860 links, and a total link strength of 556014, the full counting approach counts every instance of the term. By default, 60% of the most acceptable words were displayed. The 98 most pertinent keywords were chosen by hand from this list. Words like abstract, keyword, methodologies, paragraph, and so on that were irrelevant or unconnected were removed.

The bibliometric analysis is presented as follows: -

- Keyword analysis
- Network visualization map of keywords, along with an overlay visualization map
- Network visualization map of authors
- Scholarly contributions since 2000
- Tracking Title and Publisher of the Topic
- Comparing citations of social entrepreneurship and entrepreneurship research.

The methodology for the bibliometric analysis, including the databases searched and the software utilized, is summarized in above given in Table 1.

Table 1 . Summary of data collection and analysis methods.

Parameter	Description
Database Source	Scopus, Web of Science, Emerald, etc.
Time Period	2000–2025
Document Types	Articles, reviews, book chapters
Software Used	VOSviewer v1.6.19
Analysis Type	Co-authorship, Co-citation, Keyword Co-occurrence

Source: Author's own creation

The bibliometric maps were generated using VOSviewer v1.6.19. To ensure the clarity and relevance of the clusters, specific thresholds and parameters were applied, as detailed in above given in Table 2.

Table 2 . VOSviewer parameters (based on the network visualization, overlay visualization, and density visualization).

Parameter	Value
Software	VOSviewer v1.6.19
Counting Method	Full counting
Minimum keyword occurrences	5
Minimum author documents	3
Minimum citation threshold	20
Data Cleaning	Manual removal of generic terms ("study", "method", "paper")
Visualization	Network, overlay, and density

Source: Author's own creation

Table 4 . Cluster-wise thematic insights

Sr. No	Total Items	Most repeated Keywords	All Key words of the cluster
1	45	Entrepreneurial Orientation (77) Commercial Entrepreneurship -99 Entrepreneurship Research (171) Social Entrepreneurship (161) Agricultural Entrepreneurship -36	Social Awareness, Social Entrepreneurship, Social Opportunity, Social Entrepreneurial Process, Social Entrepreneurship Opportunity, Societal Need, Social Effect, Successful Social Entrepreneurship, Sustainability Entrepreneurship, Social Entrepreneurship Context, Social Entrepreneurship Phenomenon, Social Ventures, Financial Performance, Entrepreneurial Project, Scalability, Social Entrepreneurship Course, Social Entrepreneurship Orientation, SocietalChallenge, Corporate Entrepreneurship, Social Context, Economic, Performance, Business Opportunity, Market Orientation, Social Entrepreneurship Venture, Social Performance Global Entrepreneurship, Monitor, Compassion, Commercial Entrepreneur, Non-Governmental Organization, Opportunity Recognition, Entrepreneurial Process, Prosocial Motivation, Entrepreneurship Theory, Social Movement, Comparative Analysis, Human Capital, Entrepreneurial Orientation, Commercial Entrepreneurship, Entrepreneurship Research, Agricultural entrepreneurship, Agri-entrepreneur, Agricultural sector, Agri-entrepreneurship.

Source: Author's own creation

The selection process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The systematic filtering of records, from the initial identification of 812 documents to the final inclusion of 535 studies, is summarized in above given in Table 3.

Table 3. PRISMA screening protocol (An outcome of the PRISMA flow diagram, which visually maps the number of records identified, screened, and included or excluded for the research study).

Stage	Records
Initial records retrieved	812
Duplicates removed	134
Records screened (title/abstract)	678
Excluded for irrelevance	102
Full-text assessed	576
Final included documents	535

Source: Author's own creation

Keyword Analysis

Table 4 presents the clusters of keywords in social entrepreneurship studies. Based on the keyword analysis from 535 scholarly research papers, work clusters were identified. The maximum items (39) were found in clusters, and the Table given below shows that the most repeated keywords of the cluster are Entrepreneurial orientation (77), commercial entrepreneurship (99), Social entrepreneurship (161), Agricultural Entrepreneurship (36) and entrepreneurship research (171). This shows that several studies have tried to establish the distinction of social entrepreneurship from commercial entrepreneurship through a comparison of similarities and differences. Even a careful consideration of all keywords of the cluster also indicates that an attempt is made to link it with commercial entrepreneurship.

Network visualization map of keyword-co-occurrence analysis of title and abstract fields

As indicated in the Figure 1, the network visualization map displays clusters and repeated terms. Among the most often used keywords, entrepreneurial intention creation, social enterprise performance, and social entrepreneurship drivers have become important nodes.

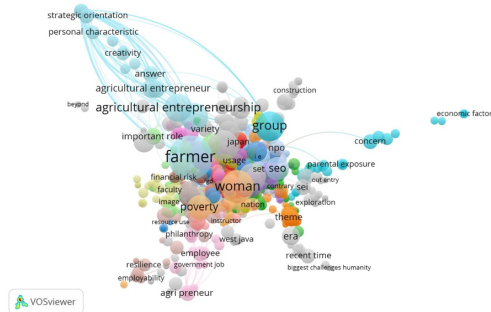


Figure 1. Network visualization map of keywords- co-occurrence analysis of title and abstract fields.

Note: Items-1504, Clusters-32, Links-20744, Total Link Strength-66242. (Source: VOSviewer Output)

The above given Figure 1 states that with closely linked terms like "farmer," "woman," "group," and "poverty" reflecting stakeholder-centric and poverty-alleviation-driven talks, the above graphic emphasizes "agricultural entrepreneurship" as the primary thematic focus. Multiple thematic strands are revealed by keyword clustering: adolescent employability and resilience (pink/brown), risk and educational support (green), individual qualities and strategic thinking (blue), global issues (orange), and external socioeconomic determinants (cyan). Scholarly agreement on entrepreneurship as a tool for empowerment and development is indicated by strong co-occurrence linkages between stakeholder terminology and agricultural entrepreneurship. Important realizations highlight the significance of risk management, educational participation, gender inclusion, and structural issues at the macro level. Future studies should focus on important but peripheral topics like youth participation, gender-specific tactics, parental impact, economic hurdles, and the interdisciplinary connections between technology, education, and agriculture.

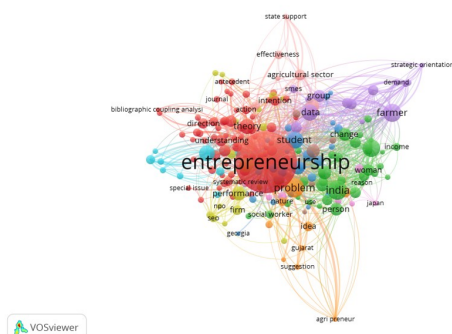


Figure 2. Network visualization map of keywords co-occurrence analysis of entrepreneurship.

Note: Items-200, Clusters-10, Links-7666, Total Link Strength-63520. (Source: VOSviewer output)

The aforementioned Figure 2 illustrates "entrepreneurship" as the primary and most commonly used term, highlighting its fundamental function in a variety of research areas. A rich, interrelated landscape of themes is revealed by surrounding clusters. With words like theory, understanding, and intention, the red cluster highlights theoretical progress and academic attention to conceptual underpinnings. The green and orange clusters indicate social entrepreneurship and developmental difficulties and are focused on region-specific studies, especially in India. They also include practical considerations like income, problems, and the social worker. The purple cluster highlights the importance of agricultural entrepreneurship and rural innovation by examining themes such as farmer, group, and strategic orientation. The yellow and blue clusters, on the other hand, relate to firm, SEO, and performance and are in line with evaluation techniques and business outcomes. Collectively, the map underscores a multidisciplinary approach to entrepreneurship research, integrating theory, practice, regional development, and sector-specific concerns, with a notable emphasis on agriculture, education, and social impact particularly within the Indian context.

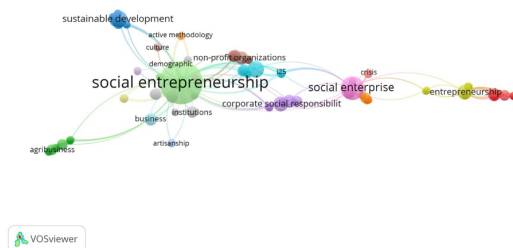
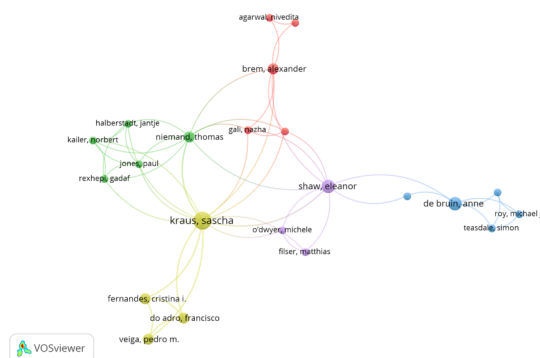


Figure 3. Network visualization map of keyword co-occurrence analysis of social entrepreneurship.

Note: Items-161, Clusters-25, Links-492, Total Link Strength-570 (Source: VOSviewer output)

The aforementioned Figure 3 emphasizes "social entrepreneurship" as the primary area of study, with close conceptual and applied connections to related concepts like social enterprise, sustainable development, corporate social responsibility, and non-profits. The research landscape is multidisciplinary, as revealed by the clustering. Agribusiness, institutions, business, and artisans are among the areas that the green cluster focuses on, illustrating how institutional frameworks and regional economic activities contribute to social impact. Linking social entrepreneurship to educational innovation and long-term socio-environmental goals, the blue cluster places a strong emphasis on sustainable development and active methods. The convergence of corporate social responsibility and non-profit organisations is shown by the purple and brown clusters. In the meantime, the orange and pink clusters focus on entrepreneurship, social enterprise, and crises, indicating a thematic link between conventional entrepreneurship and socially motivated responses to societal challenges. Overall, the analysis demonstrates that social entrepreneurship operates as a dynamic field integrating sustainability, institutional support, corporate accountability, and community-based enterprise, with strong relevance to both theory and real-world application.

[illegible]

the discourse, with emphasis placed on their characteristics, challenges, and contributions to local economies.

The 2016–2020 timeframe marks a shift toward group dynamics, societal contexts, and inclusive development within agricultural entrepreneurship. Dominant keywords such as group, employee, woman, resource use, and government job reflect the increasing complexity of research

themes. This period highlighted the growing participation of women and collective groups in agricultural innovation. There was also a significant focus on employment patterns and the role of institutions in supporting entrepreneurial initiatives. Thematic developments pointed toward sustainable resource use and a more nuanced understanding of how social structures influence entrepreneurial activities in agriculture (Table 5).

Table 5 . Thematic Review of Literature on ASE (2000–2025)

Theme / Focus Area	Geographic Context / Source	Methodology / Approach	Key Findings / Contributions	Relevance to ASE	Author(s) and Year
Conceptual Foundations of Social Entrepreneurship	Global / Theoretical	Conceptual and Theoretical Analysis	Defined social entrepreneurship as hybrid between business and philanthropy; emphasized innovation, creativity, and sustainability.	Established theoretical base and highlighted hybrid organizational logic applicable to agri-entrepreneurship	[2,3,5,7]
Entrepreneurial Attitude in Agricultural Education	India (Maharashtra)	Survey (n=120 agriculture students)	Positive attitude toward entrepreneurship influenced by education, income, and social engagement.	Demonstrated role of agricultural universities in fostering entrepreneurial intent.	[8]
Social Entrepreneurship for Agricultural Development	India	Conceptual Review	Identified social entrepreneurship as a means for livelihood generation and rural transformation.	Linked social innovation directly with agricultural growth and poverty alleviation.	[9]
Inclusive Innovation and Capability Building	Bangladesh	Case Study (Grameen Danone)	Showed how social business models create inclusive innovation and address social needs.	Highlighted innovation-based hybrid business models relevant to agricultural value chains.	[6]
Youth Participation in Agri-Entrepreneurship	Sri Lanka	Quantitative Survey (n=400)	Identified factors such as income, land ownership, and social status influencing youth interest.	Highlighted barriers and motivational factors for youth engagement in agri-entrepreneurship.	[10]
Communication Skills and Entrepreneurship	Malaysia	Survey (n=2300 graduates)	Found communication apprehension impacts entrepreneurial career choice.	Underlined need for communication skill development in agri-entrepreneurship education.	[11]
Productivity and Social Innovation	India	Empirical Review	Connected productivity improvement with social innovation in agriculture.	Positioned social innovation as a driver of sustainable agricultural productivity.	[12]
Fairness in Food Networks	USA (Midwest)	Qualitative Exploration	Analyzed fairness and ethics in alternative food networks among social entrepreneurs.	Introduced ethical considerations within agri-social enterprises.	[1]
Bibliometric Analysis of Social Entrepreneurship	Global	Bibliometric Review	Mapped intellectual evolution and major research clusters in social entrepreneurship.	Provided methodological foundation for current bibliometric analysis.	[16,17,23, 24]
Social Innovation and Hybrid Organization	Latin America / Global	Bibliometric Mapping	Identified “social innovation” and “entrepreneurial orientation” as dominant clusters.	Reinforced interdisciplinary and innovation-driven nature of ASE.	[4]
Social Entrepreneurship and Ethical Responsibility	India	Conceptual Paper	Emphasized mission-driven enterprises combining ethics and social transformation.	Reinforced ethical foundation and community engagement in ASE.	[15]
Social Innovation and Rural Competitiveness	Europe (Peripheral Regions)	Empirical / Policy Analysis	Showed how social innovations strengthen rural competitiveness and sustainable agriculture.	Linked ASE to rural sustainability and policy innovation.	[13]

Agri-Entrepreneurial Resilience and Smallholder Success	South Africa	Survey and Regression Analysis	Found positive link between resilience, demographics, and business success.	Highlighted resilience as key factor in ASE performance and sustainability.	[14]
Agri-Entrepreneurship Support Systems	India (Assam)	Case Study	Demonstrated role of policy, finance, and training in supporting rural entrepreneurship.	Showed importance of ecosystem and institutional support in ASE growth.	[18]
Digital and Social Media in Agri-Entrepreneurship	India (Punjab)	Survey	Found that social media boosts agri-business marketing and awareness among youth.	Integrated digital communication into ASE model.	[19]
Gender Inclusion in Agri-Food Entrepreneurship	Europe	Qualitative Interviews	Identified barriers and empowerment strategies for women in agri-food sectors.	Emphasized gender equity and inclusivity in ASE research.	[24]
Farmer-Led Innovation and Knowledge Creation	Global (Bibliometric)	Bibliometric Exploration	Highlighted farmers as innovators contributing to agri-entrepreneurship ecosystem.	Recognized grassroots innovation as key ASE driver.	[21]
ASE and Rural Transformation	India (Karnataka)	Case Study	Demonstrated that ASE drives inclusive rural transformation.	Provided recent Indian evidence linking ASE with socio-economic upliftment.	[20]
Sustainability Visions of Agricultural Start-ups	Germany	Comparative Case Study	Explored sustainability imaginaries among rural and urban agri-startups.	Brought forward sustainability discourse in ASE ecosystem.	[22]

Most recently, during the 2020–2025 period, the research focus has moved toward innovation, youth engagement, and resilience. Emerging keywords like agripreneur, parental exposure, recent time, economic factor, and resilience suggest a modern framing of agricultural entrepreneurship. The introduction of terms such as "agripreneur" signals a contemporary rebranding of the field, with attention paid to economic viability, adaptive strategies, and intergenerational knowledge transfer. Notably, the concept of parental exposure hints at the influence of familial and cultural background in shaping entrepreneurial intent and behaviour. This era is marked by an emphasis on navigating global challenges economic, environmental, and social while fostering innovative, youth-led solutions in the agricultural sector.

In summary, the scholarly trajectory from 2000 to 2025 reveals an evolution from foundational entrepreneurial traits and strategic thinking (2000s), through increasing attention to societal issues and rural development (2010s), culminating in a recent focus on innovation, resilience, and the role of younger generations (2020s). This temporal progression underscores the field's dynamic nature and its responsiveness to changing socio-economic and environmental contexts (Table 6).

Table 6 . Keyword Cluster Interpretation (Theoretical Meaning)

Cluster	Interpretation
Sustainability -Resilience	Reflects transition from growth orientation to climate-adaptive agribusiness models
Hybrid Governance	Demonstrates emergence of mixed institutional models combining community and market logic
Youth and Digital Agriculture	Represents generational shift toward technology-enabled agri-social ventures
Gender and Inclusion	Indicates structural corrections in historically male-dominated rural economies

Rather than merely visualizing keyword proximity, clusters reveal epistemological shifts in how agricultural entrepreneurship is framed from profit-driven to purpose-driven.

Co-authorship insights (development of knowledge networks)

The dominance of European institutional networks (e.g., Kraus, Teasdale) suggests that theoretical development remains Western-centric, while empirical case studies increasingly originate from India, Africa, and Southeast Asia indicating a geographical knowledge gap between theory production and practice settings.

Results and Analysis

The bibliometric and thematic analysis of ASE research (2000–2025) provides a comprehensive understanding of how the field has evolved in terms of publication growth, intellectual structure, and thematic orientation. The findings are discussed across five subsections: publication trends, author collaboration, keyword co-occurrence, thematic clusters, and temporal evolution.

Publication trends and growth of research

The bibliometric dataset comprised 535 scholarly documents (journal articles, book chapters, and reviews) published between 2000 and 2025, drawn primarily from Scopus, Web of Science, Emerald, Elsevier, and Research Gate databases. Figure 6 (Overlay Visualisation Map) depicts a steady increase in publication output, particularly after 2010, reflecting the rising academic and policy interest in the intersection of agriculture and social entrepreneurship.

Three distinct phases were identified:

- Phase I (2000–2010): Early conceptualisation and focus on entrepreneurial orientation, individual capabilities, and financial risk-taking.

- Phase II (2011–2020): Expansion toward rural development, poverty alleviation, and gender participation in agricultural entrepreneurship.
- Phase III (2021–2025): Emergence of modern themes such as agri-preneurship, innovation, youth engagement, resilience, and sustainability.

This temporal progression indicates a clear academic shift from individual-centric studies to inclusive and innovation-driven models of agricultural social enterprise.

Leading authors, institutions, and collaboration networks

The co-authorship network analysis as shown in Figure 5 revealed several influential research clusters and prolific contributors in the field.

- Sascha Kraus emerged as the most influential author, actively contributing to multiple clusters, bridging themes like innovation, strategy, and social entrepreneurship.
- Collaborative ties were observed between Eleanor Shaw, Brem, Gali, De Bruin, Roy, and Teasdale, indicating an interdisciplinary exchange of ideas between innovation management and social impact research [25,26].
- The strongest clusters represented three research communities:
 1. Innovation and Strategic Entrepreneurship (Kraus, Niemand, Halberstadt, 2018) [27].

2. Social Entrepreneurship and Community Development (De Bruin, Teasdale, Roy, 2019) [26].

3. Institutional and Hybrid Models of Entrepreneurship (Brem, Gali, Shaw, 2014) [25].

Institutional affiliations were predominantly European (Germany, the UK, and the Netherlands), though a gradual rise in contributions from India and Southeast Asia has been evident since 2018, signalling regional diversification of research activity.

Keyword co-occurrence and thematic density

The keyword co-occurrence analysis (Figures 1–4) generated rich thematic insights from the titles and abstracts of the collected publications. The network consisted of 2507 items, 30 clusters, and 174,860 links with a total link strength of 556,014, signifying a dense and mature research network.

The most frequently occurring keywords included:

- Entrepreneurship (171 occurrences)
- Social Entrepreneurship (161)
- Commercial Entrepreneurship (99)
- Entrepreneurial Orientation (77)
- Agricultural Entrepreneurship (36)

These keywords reveal the disciplinary convergence between traditional entrepreneurship and social innovation, demonstrating how scholars attempt to contextualise social entrepreneurship within the agricultural ecosystem (Table 7).

Table 7 . Cluster-wise thematic insights

Cluster Focus	Dominant Keywords	Interpretation
Cluster 1: Entrepreneurial Orientation	Social awareness, sustainability, financial performance, opportunity recognition	Highlights the role of innovation and market orientation in creating socially impactful agribusiness ventures.
Cluster 2: Social and Commercial Entrepreneurship	Social venture, NGO, business opportunity, performance	Explores the hybrid nature of enterprises blending social value creation with market competitiveness.
Cluster 3: Agricultural Entrepreneurship	Agri-entrepreneur, farmers, agricultural sector, rural development	Focuses on agricultural innovation, smallholder empowerment, and local community transformation.
Cluster 4: Educational and Institutional Themes	Training, knowledge, student involvement, government support	Indicates the growing role of universities and policy frameworks in promoting agri-social enterprise education.
Cluster 5: Sustainability and Gender Inclusion	Women, resource use, environment, social justice	Reflects the rising emphasis on inclusion, sustainability, and women-led rural entrepreneurship.

Thematic evolution over time

Using overlay visualization, the thematic evolution of research from 2000–2025 revealed four clear transitions:

1. 2000–2010: Foundational work on entrepreneurship theory and personal traits.
Keywords: strategic orientation, risk, innovation, motivation.
2. 2010–2015: Shift toward rural livelihoods, poverty alleviation, and farmer empowerment.
Keywords: agricultural entrepreneurship, poverty, philanthropy, community.

3. 2016–2020: Inclusion of social dimensions, gender roles, and institutional support.
Keywords: women, group, employee, government job, resource management.

4. 2021–2025: Emergence of technology-driven and youth-led innovation.
Keywords: agri-preneur, resilience, parental exposure, digital entrepreneurship.

This chronological evolution indicates that ASE has matured into a distinct, multidisciplinary domain combining economic viability, social inclusion, and environmental sustainability.

Comparative analysis: social vs. ASE

Comparing the co-occurrence networks of general “social entrepreneurship” and “ASE” reveals notable thematic differences:

- Social entrepreneurship studies emphasise sustainability, CSR, institutional frameworks, and non-profit ecosystems.
- ASE literature focuses on rural development, youth participation, and livelihood improvement through innovation.
- The intersection of both fields demonstrates a hybrid orientation where agricultural entrepreneurship increasingly incorporates social value creation and inclusivity.

This comparative insight validates the uniqueness of ASE as an emerging, practice-driven subfield within entrepreneurship research.

The results indicate that research in ASE has evolved from fragmented explorations into a cohesive and rapidly growing field. The bibliometric evidence confirms:

- Increasing international collaboration and cross-disciplinary convergence.
- Rising focus on innovation, inclusivity, and sustainability within agricultural contexts.
- A shift in research emphasis toward youth engagement, gender inclusivity, and technological transformation.

These patterns resonate with prior bibliometric reviews while extending the temporal scope and integrating agriculture-focused themes. The field's maturity is evident from the increasing density and link strength of the keyword networks, demonstrating its progression toward theoretical and practical consolidation.

Findings

ASE has evolved into a structured and interdisciplinary field that integrates agricultural innovation, social impact, and sustainability objectives. The bibliometric evidence demonstrates increasing theoretical maturity, network density, and thematic cohesion. However, persistent geographic and methodological imbalances remain. Future research should prioritise longitudinal quantitative methods, policy-impact modelling, and region-specific ecosystem mapping. Numerous studies on entrepreneurship and social entrepreneurship in the agriculture industry have been conducted. Research studies conducted between 2000 and 2025 are included in the database under investigation and VOSviewer software was utilised to get the bibliometric output. Since the start of the twenty-first century, a significant number of review papers on social entrepreneurship have already been published. One of the earliest studies was Johnson's from 2000, and numerous reviews have since been published in academic, peer-reviewed publications [7,16,17,23,24,28-30] A few bibliometric studies are also included among them.

Bibliometric analysis by Granados et al. and Desa recorded less works and the advancement of the subject of study [28,30]. The field clearly emerged after Sassmannshausen and Volkmann but a lot has been written since then [29]. Rey-Martí, A. et al., conducted another restricted analysis and identified five clusters [23]. Ten clusters that were excluded

from their analysis were included in the current one. Intention, the financing-eco system, individual characteristics, and the orientation of social entrepreneurship research are significant clusters that are specific to our study. Persaud et al., conducted recent bibliometric research that focused on the top 92 articles out of 157 top cited papers [24]. Despite offering a few intriguing aspects of social entrepreneurship research, this report lacks thorough and comprehensive coverage. Though Iskandar et.al., is the most recent study it captures only the fields of study publishing social entrepreneurship studies [16].

Conclusion

Several thematic strands are revealed by keyword clustering analysis: personal characteristics and strategic thinking, risk and educational assistance, youth employability and resilience, global challenges, and external socioeconomic variables. A scholarly consensus on entrepreneurship as a vehicle for empowerment and development is indicated by the strong co-occurrence linkages between stakeholder words and agricultural entrepreneurship. Important realisations highlight the significance of risk management, educational participation, gender inclusion, and structural issues at the macro level. Future studies should focus on important but peripheral topics like youth participation, gender-specific tactics, parental impact, economic hurdles, and the interdisciplinary connections between technology, education, and agriculture. A key component of this bibliometric analysis approach is that it excludes other types of sources, such as textbooks and chapters, by basing all papers published in journals that are indexed in the Web of Science, Emerald, Research Gate, Elsevier, and Scopus databases.

The primary authors' scholarly contributions to the field of social entrepreneurship in agriculture, as well as the development of the title's scientific significance and visibility, are objectively summarised in this research study. This study's importance pertains to the identified research gap, which could serve as a guide for further research. The findings provide insightful information that aids in comprehending and forecasting research trends about the future growth of social entrepreneurship in the agriculture industry. Future writers are advised to use the case study in different regions as distinct geographical applications, select a different approach than qualitative research and case study, and improve the keywords that produced null results, which indicate that no research has been done in those areas. It is acknowledged that the examined publications primarily outline the case applications' knowledge, compare them based on their implications, and offer advantages and recommendations for enhancement. It is concluded that they might serve as standards for comparable company launches in other areas or nations.

Disclosure Statement

No potential conflict of interest was reported by the author.

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