



Global Knowledge Structure of Agricultural Entrepreneurship and Entrepreneurial Behaviour Research: A Bibliometric Analysis

Vineeta Chandra^{1*}, Ajay Kumar Prusty², Chitrasena Padhy³, Rabindra Kumar Raj⁴ and Soumik Ray⁵

¹PhD Scholar, ²Associate Professor, Agricultural Extension Education, ³Associate Professor, Agricultural Economics & statistics, MSSSoA, Centurion University of Technology and Management, Odisha 761211, India

³Associate Professor, Agricultural Extension Education, SoA, SR University, Warangal-506371, Telangana, India

⁴Former Professor, Agricultural Extension and Communication, Institute of Agricultural Sciences, Siksha 'O' Anusandhan Deemed to be University, Bhubaneswar, Odisha, India

*Corresponding author email id: vineetachandra11@gmail.com

HIGHLIGHTS

- Progressive growth in publications on agricultural entrepreneurship was observed, particularly after 2010.
- Keyword network analysis identifies dominant themes, including entrepreneurship, innovation, sustainability, rural development, and farmer entrepreneurial behaviour in agricultural research.
- International collaboration analysis highlights major contributions from countries such as the United States, China, and India in agricultural entrepreneurship.

ARTICLE INFO

Keywords: Agricultural entrepreneurship, Entrepreneurial behaviour, Bibliometric analysis, Rural development, Innovation, Sustainability.

<https://doi.org/10.48165/IJEE.2026.62301>

Citation: Chandra, V., Prusty, A. K., Padhy, C., Raj, R. K., & Ray, S. (2026). Global Knowledge Structure of Agricultural Entrepreneurship and Entrepreneurial Behaviour Research: A Bibliometric Analysis. *Indian Journal of Extension Education*, 62(3), 7-14. <https://doi.org/10.48165/IJEE.2026.62302>

Reviewed by: Dr. Sujay Basappa Kademani (meetbsujay@gmail.com); Dr. Krishna D Karjigi (krishnadkarjigi@gmail.com)

ABSTRACT

The research was undertaken in the period 2024-2025 to discuss the research trends in the world, thematic development, and network of collaboration in agricultural entrepreneurship and entrepreneurial behaviour of farmers through a bibliometric analysis method. The database was gathered by using a large scientific database where a set of 710 research articles published in 2016-25 were located and assessed with the help of Biblioshiny and VOSviewer software. To comprehend the intellectual framework of the research area, the analysis was conducted on annual scientific production, collaboration networks between those who use the same keywords, collaboration between authors, and collaboration between countries. The findings depict that there was a vast increase in publications, and this growth rate is 17.05 per annum, signifying that the world's interest in agricultural entrepreneurship and entrepreneurial behaviour is growing. Network visualisation also evidences that the countries have very strong international connections, such as the United States, China, India, and a number of European countries. The results show that the studies in the field are progressively becoming more interdisciplinary and interconnected worldwide, with a focus on innovative, sustainable, and farmer-focused entrepreneurial growth.

INTRODUCTION

Agriculture is one of the essential sectors of economic growth, food security, and livelihood in the global context. In most developing nations, a big percentage of the population relies on farming as a major means of earning their living and also as an

employment. However, the traditional agricultural systems are becoming challenged by the problems like climate change, reduction of productivity, unstable market and scarcity of resources. Agricultural entrepreneurship means the capabilities of farmers and agribusiness participants to see new opportunities, introduce new technologies, take risks, and generate value-added processes in the

agricultural industry (Sirine et al., 2020). The emerging trend on entrepreneurship in agriculture is representative of a larger shift in the agricultural industry towards production based on subsistence to a more market-oriented and innovation-based production system (Licciardo et al., 2023). With the entrepreneurial farmers, there are increased chances of adopting better technologies, diversifying the farm activities, new markets, as well as involvement in the value chain development. This kind of entrepreneurial activity helps to enhance the agricultural productivity and the economic development in rural areas (Xie et al., 2021; Lu et al., 2025)).

The studies of the topic of agricultural entrepreneurship have gained momentum in recent years in spheres like agricultural economics, sociology of rural areas, developmental studies, and innovation management (Kademani et al., 2024). Researchers have paid more attention to the determinants of entrepreneurial behavior among the farmers, the institutional support and the influence of entrepreneurship on the rural development. Research has emphasized that entrepreneurship is important in enhancing the economic standing of rural areas and advancing innovation in the agricultural production systems, and the robustness of food systems (Malan, 2020; Scott & Richardson, 2021). Moreover, the idea of sustainable agricultural entrepreneurship has become popular as a strategy accomplishing both economic development and environmental sustainability and social welfare (Kurtaj et al., 2024).

The entrepreneurial orientation and access to information are the two factors that strongly determine how the farmers are able to adopt new technologies, manage their farms more efficiently, and respond to market opportunities (Selemani et al., 2025). Studies have indicated that there is a strong impact by the psychological, social, and economic factors on the entrepreneurial behavior of farmers and the decision-making process (Hu et al., 2021). Also, the formation of agricultural entrepreneurship is closely intertwined with the support of the policy, access to funds and training, and institutional structures that allow farmers to engage in the competitive markets (Van Niekerk et al., 2024). Although there has been an increased attention towards this area of study, there is still a fragmented scientific body in this area of research among various disciplines and geographical locations. Bibliometric analysis has become a potent instrument to study the intellectual organization of research disciplines in terms of patterns of publications, connections between keywords as well as networks between researchers and nations (Ghertescu et al., 2024).

Thus, the current research will focus on the bibliometric review of the international literature on agricultural entrepreneurship and entrepreneurial behaviour to determine the key research topics, partnerships, and new policies. Through the co-authorship network and key word co-occurrence patterns analysis, the research is able to present the knowledge structure of agricultural entrepreneurship research that is emerging. The results of this review will help to comprehend the research situation more properly and offer the path forward to the subsequent research, policy development, and stimulation of the entrepreneurial activity in agriculture.

METHODOLOGY

The study adopted a bibliometric methodology to examine global research trends, collaborative networks, and thematic

structures in the field of agricultural entrepreneurship. Bibliometric analysis is widely used for the quantitative assessment of scientific literature and for identifying patterns of research development, collaboration, and knowledge structures within a given domain. The bibliographic data for this study were retrieved from the Scopus database, chosen for its comprehensive coverage of peer-reviewed journals. The data collection covered the period from 2016-2025 and was conducted using a clearly defined and reproducible search strategy. The search string applied was “agricultural entrepreneurship” or “agriprenership” or “farm entrepreneurship” or “agribusiness entrepreneurship” and “rural development” or “sustainable agriculture” or “farming system”, using appropriate Boolean operators. Only peer-reviewed journal articles published in English and directly relevant to the study domain were included, while conference papers, book chapters, editorials, and duplicate or irrelevant records were excluded. A total of 710 records were retrieved and exported in CSV and bibliographic formats, containing detailed information such as title, authors, publication year, affiliations, country, author keywords, index keywords, and references. The dataset was carefully cleaned and standardised to ensure consistency and reliability, including the removal of duplicate entries, normalisation of author names and affiliations, and harmonisation of similar keywords to improve the accuracy of network analysis. The cleaned data were then analyzed using Biblioshiny and VOSviewer, which are widely recognised tools in scientometric research. Specific parameters were applied to enhance transparency and reproducibility, including full counting methods, a minimum threshold of five documents per country for co-authorship analysis, and minimum keyword occurrence thresholds. Network normalisation was performed using the association strength method, and clustering was conducted using the VOS clustering algorithm. The analysis was carried out in three stages: first, country-level co-authorship analysis to identify international research collaborations, where countries were treated as nodes and links represented collaborative relationships; second, co-occurrence analysis of author keyword to identify major research themes and conceptual clusters; and third, index keyword analysis to further validate thematic relationships. VOSviewer was used to generate bibliometric maps based on co-occurrence and collaboration networks where node size indicated frequency or influence, links represented relationships, and different colours denoted thematic clusters. These visualisations enabled the identification of major research hubs, collaborative networks, and evolving thematic structures, thereby providing a comprehensive and reproducible understanding of the global research landscape in agricultural entrepreneurship.

RESULTS

A bibliometric overview created with the help of the Biblioshiny interface provides a summary of the dataset that is utilised to make the analysis of the research on agricultural entrepreneurship (Van Eck & Waltman, 2010; Roy et al., 2024). The data span is between 2016 and 2025, which is ten years of study and development in this field.

The sources used in retrieving 710 documents comprised 373 sources, meaning the research conducted in the field of agricultural

entrepreneurship has found publication in a vast scope of academic journals and publications. The review indicates that the growth rate was 17.05 per year which clearly shows that the amount of research output in the field has increased at a high rate over the period of study. The mean age of the documents is 4.28 years, indicating a majority of the literature is relatively young and adopts some of the new trends regarding agricultural entrepreneurship research. Concerning the citation impact, there is 70626 references in publications with the mean of citations of 13.71 per document thus indicating the considerable academic impact of the literature. There are also 1,168 Keywords Plus and 2,304 author keywords in the dataset which indicates the variety of the research topics discussed in the field. The authorship analysis shows that there are 2,247 authors of the 710 publications, 76 of which are single-authored, which implies that the majority of research in the given field is performed in teams. The mean size of co-authors is 3.49 and 22.11 per cent of the documents are international co-authored, which means that there is a high level of collaboration between scholars in the study of agricultural entrepreneurship.

Figure 1 shows the scientific output of the publications on agricultural entrepreneurship in 2016-2025. The findings reveal that there is a progressive growth in research output. In 2016, the number of publications was about 30-35 articles, but in 2025 it rose to over 130 publications.

The observed progressive growth in publications on agricultural entrepreneurship, particularly after 2010, reflects broader structural transformations in the global agricultural sector. This increase can be attributed to the rising recognition of entrepreneurship as a key mechanism for enhancing farm income, promoting rural employment, and addressing emphasis on sustainable development (FAO, 2017) especially following the adoption of the United Nations Sustainable Development Goals (SDGs) in 2015, which highlighted the role of innovation and entrepreneurship in achieving food security and rural sustainability (United Nations, 2015). Furthermore, thematic shifts identified through keyword analysis—such as the growing prominence of sustainability, innovation systems, and value chain development can be linked to increasing concerns over climate change, resource degradation, and market

integration. The integration of concepts such as social capital and rural resilience suggests a transition from purely economic perspectives toward more holistic and system-based approaches in agricultural research (FAO, 2018; World Bank, 2020). These trends indicate that agricultural entrepreneurship research is not only expanding in volume but also evolving in response to global challenges, policy priorities, and technological advancements, thereby reflecting its increasing relevance in shaping sustainable and inclusive rural development pathways (Scoones, 2016; OECD, 2019).

There is a minor drop in the period of the year 2023 however the trend indicates strongly upwards. This is indicated by the increased number of publications since 2023 and indicates a worldly interest in the topic of agricultural entrepreneurship, especially regarding the new issues faced by the world (food security, rural unemployment, climate change, and sustainable agricultural development) (Mansingh et al., 2025; Kurtaj et al., 2025).

Three field-plot analysis Figure 2 demonstrates the three-field plot, which depicts the correlation between cited references (CR), authors (AU), and keywords (KW) in the agricultural entrepreneurship literature. The visualization indicates the intellectual relations between the authoritative sources, the references, and the prevailing topics in the research. It can be seen that such authors as Dentoni, Domenico; McElwee, Gerard; Gittins, Peter and Methorst, Ron are highly linked with references of power (Gittins and McElwee, 2023). The main related research topics of these authors include entrepreneurship, agriculture, rural economy, rural entrepreneurship, sustainability, innovation, and smallholder farming systems.

The Figure 2 in terms of the keyword dimension shows that entrepreneurship and entrepreneur are the most popular keywords, then there are agriculture, rural economy, rural entrepreneurship, smallholder, farmers, sustainability, rural development and innovation. These key words show that the research on agricultural entrepreneurship is mostly concerned with the enhancement of the rural economies and the national support of the sustainable farming systems by means of the entrepreneurial activity (Sirine et al., 2020; Kurtaj et al., 2024).

Figure 1. Annual Scientific Production in Agricultural Entrepreneurship Research (2016- 2025)

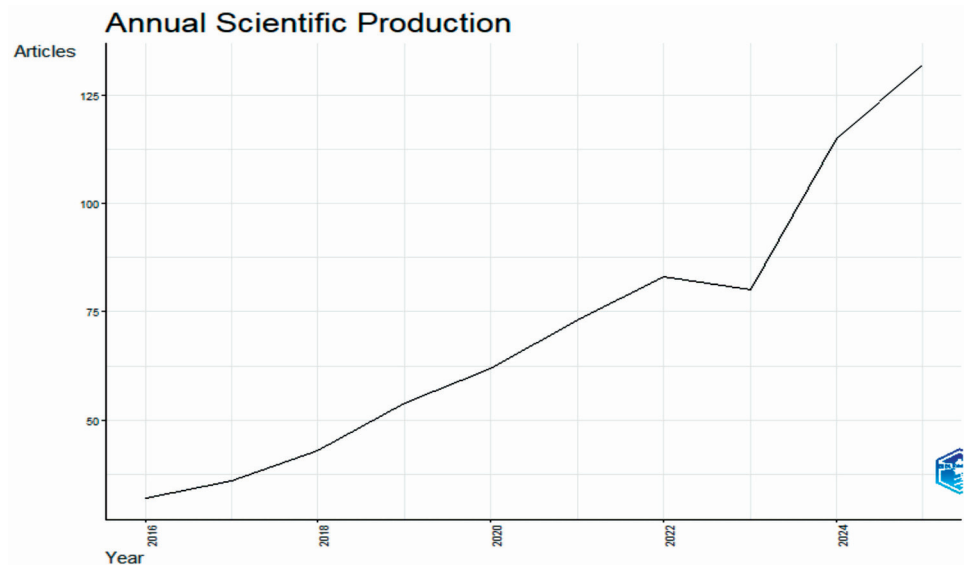
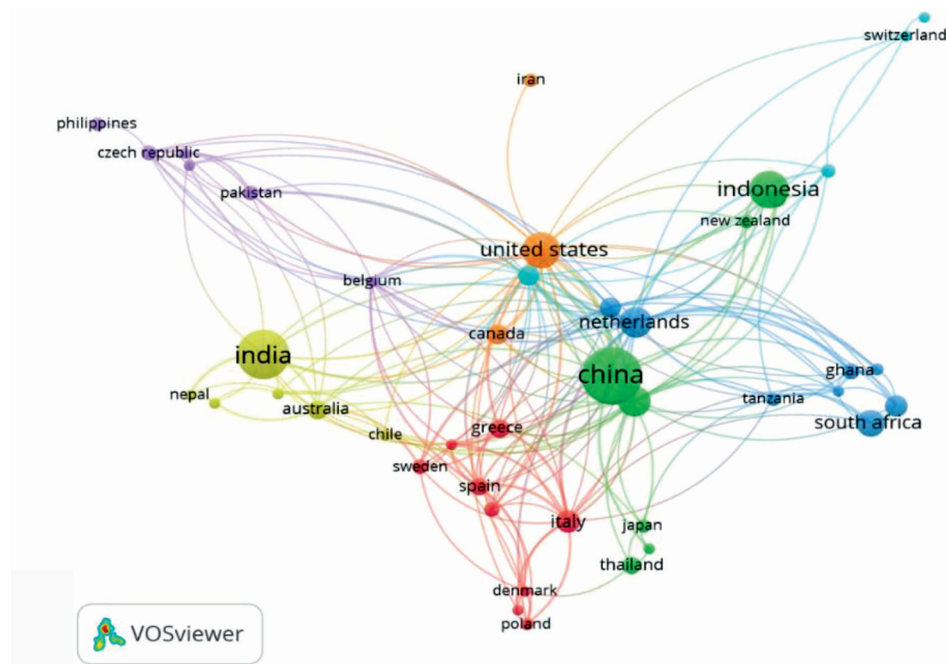


Figure 5. International country collaboration network in agricultural entrepreneurship research



key players and it makes a big cluster and is correlated to many countries like the Netherlands, Japan, Thailand and many developing countries (Dhillon, 2026). The intensive Chinese presence can be attributed to growing research expenditure by China in innovation in agriculture, rural development, and transformation of agribusiness. Another significant research cluster is India which is related to other nations, including Nepal, Australia, and Chile (Lachney et al., 2021). This group shows the increasing scholarly attention to agricultural entrepreneurship in South Asia, especially in relation to the smallholder systems of farming and rural development of livelihoods (Sarfray et al., 2022). Another collaboration group is European countries, including Italy, Spain, Sweden, and Denmark, which employs the regional cooperation in agricultural economics and countryside development studies. Also, one can find the countries like Indonesia, South Africa, Ghana, Switzerland, and New Zealand in the network, which proves the broadening of the geographical range of the research on agricultural entrepreneurship in the various continents. The collaboration map demonstrates the rising internationalization of the research in the field of agricultural entrepreneurship and the significance of the international exchange of knowledge in addressing the most frequent issues associated with the food security, rural poverty, and sustainable agricultural development.

The collaboration of Biblioshiny and VOSviewer analysis shows that there are a number of potential directions of the research in the field of agricultural entrepreneurship. Firstly, it is the increased attention to sustainability-based entrepreneurship in which studies are concentrated on environmentally conscious cultivation methods, climate-stable agriculture, and sustainable consumption levels of resources. Second, behavioral economics and empirical research continue to study the behavior of farmers and their entrepreneurial orientation with a focus on psychological issues, knowledge, and risk-taking capacity as drivers of entrepreneurial decision-making. Third, the systems of technology adoption and innovation have become one of the areas of inquiry

especially in the context of digital agriculture, precision farming, and the development of the agricultural value chain. Lastly, there is an increment in the literature on rural livelihood transformation where entrepreneurship is the main theme on how it can alleviate poverty, create employment, and diversify rural economies. These new trends prove the dynamic character of agricultural entrepreneurship studies and show the necessity in relation to modern challenges of the world of agriculture (Waltman et al., 2010).

DISCUSSION

The bibliometric analysis results demonstrate the intensive growth and the increasing scientific attention to the research of agricultural entrepreneurship in the world. The rise in publications over time through the study period shows that entrepreneurship is gradually getting accepted as a fundamental tool of enhancing agricultural productivity, rural development and food systems. The growing popularity of the studies is also the symptom of the growing significance of innovation, sustainability, and value creation in the context of contemporary agriculture. The findings also reveal that the study of agricultural entrepreneurship is very interdisciplinary as the sciences of agricultural economics, rural sociology, agribusiness management, and innovation studies are all intertwined in it (Kurtaj et al., 2024; Mansingh et al., 2025).

The variety of themes of research that include sustainability, rural development, technological innovation, and farmer livelihoods points to the fact that entrepreneurship in agriculture is not exclusive to the context of business practices but also closely related to the wider social-economic transformation within the rural context (Sirine et al., 2020; Xie et al., 2021). These findings underline the changing role of the entrepreneurial practices in dealing with the complex agriculture challenges. The collaboration network analysis shows that there are good international research collaborations between the countries. The countries, like the United States, China or India, are the key participants in the formation of trends in research in the world, and they make a great contribution to the

development of knowledge in this direction. This international cooperation is critical towards combating the global issues of concern like climate change, food security and poverty in rural areas. The collaboration networks also suggest the growing knowledge exchange both between institutions and across continents. In addition, both the keyword and index key words demonstrate the strong presence of the themes of entrepreneurship, sustainability, innovation, and rural livelihoods.

Such results imply that the research is no longer centered on the conventional agricultural production but a more holistic approach that focuses more on the entrepreneurial behavior and technological adoption and sustainable management of resources. On the whole, the findings show that the research in agricultural entrepreneurship is becoming more dynamic, multidisciplinary, and internationally connected, which is the consequence of the growing importance of sustainable agricultural development and economic growth in the rural areas.

CONCLUSION

This bibliometric study highlights the rapid evolution of research on agricultural entrepreneurship and entrepreneurial behaviour between 2016 and 2025. The findings indicate a clear shift from fragmented studies toward a more integrated and interdisciplinary research domain, driven by increasing global emphasis on sustainability, innovation, and rural development. The prominence of themes such as technological adoption, value chain development, and farmer livelihoods reflects the expanding scope of agricultural entrepreneurship beyond traditional production systems. Collaboration patterns reveal the leading role of countries such as the United States, China, and India, while also indicating growing international research linkages. The study further underscores the influence of global challenges, including climate change and food security, in shaping research priorities. Future research should focus on empirical and impact-oriented approaches to better understand entrepreneurial outcomes in agriculture. Policymakers should promote innovation ecosystems, capacity building, and institutional support to strengthen agricultural entrepreneurship and ensure sustainable rural transformation.

DECLARATIONS

Ethics approval and informed consent: As the research was carried out with bibliometric analysis, the Scopus database was used for the study, with inclusion and exclusion criteria.

Conflict of interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The author declares that they have thoroughly reviewed, revised, and edited the content as needed. The authors take full responsibility for the final content of this publication.

Publisher's note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organisations, or those of the publisher, the editors, and the reviewers. Any product/ process or technology that may be evaluated in this article, or a claim that its manufacturer may make, is not guaranteed or endorsed by the publisher.

REFERENCES

- Anna, A., Singh, B. P., Chander, M., Sagar, M. P., Suman, R. S., & Pawale, S. S. (2021). Entrepreneurial Behavior of Piggery Trainees of Pashu-Vigyan Incubator. *Indian Journal of Extension Education*, 58(1), 186-188. <https://eprints.icar.org.in/index.php/IJEE/article/view/119193>
- Dhillon, M. (2026). Global research on digital platforms in rural knowledge transfer during 2003-2025: A bibliometric analysis. *Indian Journal of Extension Education*, 62(1), 135-141.
- Food and Agriculture Organization of the United Nations. (2017). The future of food and agriculture: Trends and challenges. FAO. <https://www.fao.org/3/i6583e/i6583e.pdf>
- Food and Agriculture Organization of the United Nations. (2018). Sustainable food systems: Concept and framework. FAO. <https://www.fao.org/3/ca2079en/CA2079EN.pdf>
- Ghertescu, C., Manta, A. G., & Badircea, R. M. (2025). Smart agriculture and technological innovation: A bibliometric perspective on digital transformation and sustainability. *Sustainability and Energy Economics in Agriculture*, 15(13), 1388. <https://doi.org/10.3390/agriculture15131388>
- Gittins, P., & McElwee, G. (2023). Constrained rural entrepreneurship: Upland farmer responses to the socio-political challenges in England's beef and sheep sector. *Journal of Rural Studies*, 104, 103141. <https://doi.org/10.1016/j.jrurstud.2023.103141>
- Hu, B., Zheng, Q., Wu, J., Tang, Z., Zhu, J., Wu, S., & Ling, Y. (2021). Role of Education and Mentorship in Entrepreneurial Behavior: Mediating Role of Self-Efficacy. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.775227>
- Kademani, S., Nain, M. S., Singh, R., & Roy, S. K. (2024). Analysis and profiling of agri-entrepreneurship promoting institutions. *Indian Journal of Extension Education*, 60(1), 35-40. <https://doi.org/10.48165/IJEE.2024.60107>
- Kouchaky, Z., Borkhani, F. R., Khalkheili, T. A., & Piralidehi, F. G. (2024). The application of the motivation-opportunity-ability model in predicting green entrepreneurial behavior of farmers. *Sustainable Futures*, 10, 100900. <https://doi.org/10.1016/j.sfsr.2025.100900>
- Kurtaj, D., Cerpja, T., & Murrja, A. (2024). Financial risk analysis - Case study Guri I Zi in the municipality of Shkodër in Albania. *WSEAS Transactions on Environment and Development*, 20, 66-75. doi: 10.37394/232015.2024.20.8
- Lachney, M., Eglash, R., Bennett, A., Babbitt, W., Foy, L., Drazin M., & Rich, K. M. (2021). pH empowered: community participation in culturally responsive computing education. *Learning, Media and Technology*, 46(1), 1-22. 10.1080/17439884.2021.1891421
- Licciardo, F., Tarangioli, S., Gargano, G., Tomassini, S., & Zanetti, B. (2023). The 7th Census of Italian agriculture: characteristics, structures and dynamics of generational renewal. *Italian Review of Agricultural Economics*, 78(2), 109-118. <https://doi.org/10.36253/rea-14578>
- Lu, Z., Yang, L., Gou, D., & Wu, Z. (2025). Promotion of rural industrial revitalization through the development of the rural digital economy. *Frontiers in Sustainable Food Systems*. <https://doi.org/10.3389/fsufs.2025.1598461>
- Malan, N. (2020). iZindaba Zokudla: A conversation about food systems change in South Africa. *Journal of Agriculture, Food Systems, and Community Development*, 10(1), 29-42. <https://doi.org/10.5304/jafscd.2020.101.016>
- Mansingh, J. P., Madhumithra, M., Ithou, A. F. Y., Nisha, A., Vidhya, A. P. S., & Anbarasan, P. (2025). Entrepreneurial Behaviour of

- farmers: A bibliometric analysis and systematic literature review. *Multidisciplinary Reviews*, 8(7), 2025202. <https://doi.org/10.31893/multirev.2025202>
- Nguyen, N. C., Hasnaoui, J. A., Lodorfos, G., Matta, D., & Laine, I. (2025). Resilience, optimism, and entrepreneurial well-being: a review and research agenda. *International Journal of Entrepreneurship and Small Business*, 55(6), 20–40.
- Organisation for Economic Co-operation and Development. (2019). Innovation, productivity and sustainability in food and agriculture: Main findings from country reviews and policy lessons. OECD Publishing. <https://doi.org/10.1787/c9c4ec1d-en>
- Roy, P., Maji, S., Jirli, B., Singh, P., & Nai, M. S. (2024). Scopus-indexed Indian Journal of Extension Education: Crafting improvement strategy through Altmetric and Bibliometric analysis. *Indian Journal of Extension Education*, 60(2), 1–10. <https://doi.org/10.48165/IJEE.2024.60201>
- Sarfraz, M., Ivascu, L., & Abdullah, M. I. (2022). Editorial: Sustainable digital economy, entrepreneurship, and blockchain technology role in industrial-organizational psychology. *Frontiers in Psychology*, 13, 974415. 10.3389/fpsyg.2022.974415
- Scoones, I. (2016). The politics of sustainability and development. *Annual Review of Environment and Resources*, 41, 293–319. <https://doi.org/10.1146/annurev-environ-110615-090039>
- Scott, C. K., & Richardson, R. B. (2021). Farmer social connectedness and market access: A case study of personal networks among emerging farmers. *Journal of Agriculture, Food Systems, and Community Development*, 10(2), 431–453. <https://doi.org/10.5304/jafscd.2021.102.024>
- Selemani, R. D. A., Tsusaka, T. W., Ransom, L. K., & Zulfiqar, F. (2025). Entrepreneurial orientation and performance of cotton farms in Malawi: the mediating role of quality orientation. *Journal of Agribusiness in Developing and Emerging Economies*. <https://doi.org/10.1108/JADEE-01-2025-0035>
- Sirine, H., Andadari, R. K., & Suharti, L. (2020). Social Engagement Network and Corporate Social Entrepreneurship in Sido Muncul Company, Indonesia. *Journal of Asian Finance, Economics and Business*, 7(11), 885–892. <https://doi.org/10.13106/jafeb.2020.vol7.no11.885>
- United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. United Nations. <https://sdgs.un.org/2030agenda>
- Van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. <https://doi.org/10.1007/s11192-009-0146-3>
- Van Niekerk, J., Venter, P., & Van Der Watt, E. (2024). Sustainability of New Generation Commercial Farmers in South Africa: A North-West Province Case Study. *South African Journal of Agricultural Extension (SAJAE)*, 52(3), 103–131. <https://doi.org/10.17159/2413-3221/2024/v52n3a15635>
- Waltman, L., Van Eck, N. J., & Noyons, E. C. M. (2010). A unified approach to mapping and clustering of bibliometric networks. *Journal of Informetrics*, 4(4), 629–635. <https://doi.org/10.1016/j.joi.2010.07.002>
- World Bank. (2020). Harvesting prosperity: Technology and productivity growth in agriculture. World Bank. <https://openknowledge.worldbank.org/handle/10986/32350>
- Xie, G. H., Wang, L. P., & Khan, A. (2021). An assessment of social media usage patterns and social capital: Empirical evidence from the agricultural systems of China. *Frontiers in Psychology*, 12, 767357. <https://doi.org/10.3389/fpsyg.2021.767357>