

ECONOMIC SUSTAINABILITY OF AGRICULTURE-BASED ENTREPRENEURS IN THE RURAL SECTOR: A BIBLIOMETRIC ANALYSIS.

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ABSTRACT

The current study aims to identify the key topics, present situation, and dynamics in the field of economic sustainability of agri-based entrepreneurs in the rural sector and to make recommendations for future research studies. The main objective of the study is to synthesize the existing literature on the economic sustainability of agriculture-based entrepreneurs in the rural sector. The current study conducted a bibliometric analysis by selecting 147 studies from the Scopus database to determine the extent of research on the economic sustainability of agri-based entrepreneurs between 2015 and 2025. The study used only the Scopus database as it provides wider coverage of high-quality peer-reviewed journals in the fields of sustainability, agribusiness, and economics compared to other databases, and later extended the systematic review by integrating additional databases where full-text access is available. The collected data were analyzed using Biblioshiny software. In the current study, the most influential papers, leading researchers, geographical locations, number of publications, key journals, author affiliations, keywords, citation counts, and trend topics for future research were identified. Although some studies have been conducted on the economic sustainability of agri-based entrepreneurs at the global level, in the Sri Lankan context there are no significant research studies published in reputable journals indexed in the Scopus database. Therefore, this study attempts to address this research gap in the respective sector. The majority of the existing studies have employed a quantitative research approach. The results also indicate that this field is still emerging and offers significant opportunities for further exploration. Therefore, future researchers are encouraged to adopt more diverse methodological approaches, including qualitative and mixed-method designs, to gain deeper insights into the subject. According to the results of the current study, the identified trend topics include economic sustainability, economic viability, sustainability, agribusiness, and sustainable development. These themes provide important directions for future research and suggest the need for more context-specific and policy-oriented studies to strengthen theoretical and practical contributions in this area.

Keywords: *Agri-based entrepreneurship, Bibliometric analysis, Economic sustainability, Rural sector*

1. INTRODUCTION

The contributions and impact of entrepreneurs are crucial for economic growth and income generation in any economy. According to the entrepreneurship definition of Professor Howard Stevenson, there are two types of entrepreneurial behaviors in the economy, i.e. promoter and trustee, which focus on using existing opportunities in society and relying on personal capabilities, respectively. Matei and Voica (2013, as cited in Hiranya et al., 2022) note that important characteristics of successful entrepreneurs include the ability to identify opportunities where others perceive risks or confusion, as well as the capacity to bear overall risk in a timely manner. Entrepreneurs must also maintain skills in preparing comprehensive business plans, vision, and mission statements to recognize opportunities that others might overlook. Kuratko (2016, as cited in Hiranya et al., 2022) emphasizes that entrepreneurship education is a significant factor influencing the initiation of new ventures and strengthening entrepreneurial motivation (Breznitz & Zhang, 2021; Ndou et al., 2019). According to Ndou (2021) and Panait et al. (2022), entrepreneurship education plays a vital role in both starting and further developing entrepreneurs. Therefore, providing adequate education and training for entrepreneurs directly impacts the sustainability and success of their businesses.

Economic sustainability is a critical factor in agriculture-based entrepreneurship, especially in rural sectors, where employability, food security, livelihoods, and regional development are closely interlinked. Agri-based entrepreneurs play an important role in generating income, creating employment, reducing poverty, and adding value to rural livelihoods. However, existing literature highlights that rural SMEs, including agri-based businesses, face challenges such as price fluctuations, limited access to finance, lack of market opportunities, technological problems, and environmental pressures. Economic sustainability refers to the ability of agribusiness ventures to remain financially viable over the long term while adapting to changing economic and institutional environments. As a result, scholars and policymakers increasingly recognize agriculture-based entrepreneurship as a key mechanism for achieving inclusive and sustainable rural development (FAO, 2017; WCED, 1987).

In the past, many studies on the economic sustainability of agriculture-based entrepreneurs have expanded significantly, encompassing diverse themes such as productivity, resilience, innovation, and rural livelihoods. Nonetheless, the literature remains fragmented across different disciplines, geographical contexts, and methodological approaches, making it challenging to identify dominant research streams, key contributors, and emerging trends (Elia et al., 2020). In this context, bibliometric analysis provides a systematic and quantitative method to map the intellectual structure and evolutionary path of the field by examining publication trends, citation networks, and thematic developments. Therefore, this study addresses these gaps by conducting a bibliometric analysis of the literature on the economic sustainability of agriculture-based entrepreneurs in the rural sector, offering a comprehensive overview of research patterns, identifying knowledge gaps, and suggesting future research directions (Donthu et al., 2021; Aria & Cuccurullo, 2017).

Approximately 26.5% of the employed population in Sri Lanka relies directly on agriculture, while many others benefit indirectly. The Sri Lankan agricultural system, which traditionally follows the “Yala” and “Maha” seasons, has adopted modern equipment and technologies. This has created an excess labor supply and underemployment in rural areas. Moreover, agriculture’s contribution to GDP is relatively low at 7.5%, resulting in challenges such as low income, poverty, income disparity, limited savings, and restricted investment and consumption. To address these issues and boost the rural economy, promoting entrepreneurship and supporting the development of SMEs have emerged as key strategies. These approaches provide opportunities for establishing agriculture-based businesses that utilize surplus rural labor and offer effective solutions to persistent challenges in the rural agricultural sector (Upulwehera et al., 2021).

The research gap is evident in the lack of focus by previous studies on the economic sustainability of agri-based entrepreneurship in developing countries. Moreover, to the best of the research team’s knowledge, no bibliometric studies have been conducted on the economic sustainability of agri-based businesses in the Sri Lankan context. Existing literature indicates that many rural entrepreneurs face significant challenges, including high business closure rates in a short period. According to Priyanath and Premaratne (2014, as cited in Prasanna et al., 2021), around 70% of SMEs close within the first three years, with 60% closing in the first year alone. This highlights the critical need to understand factors that influence the economic sustainability of rural agribusinesses. Therefore, the current study fills this gap by conducting a bibliometric analysis of agri-based entrepreneurship between 2015 and 2025. The aim is to systematically review existing national and international literature on the economic sustainability of agriculture-based entrepreneurship in rural sectors.

Entrepreneurship development is a pivotal strategy for driving economic growth, contributing significantly to GDP, income distribution, and the reduction of underemployment and unemployment. It also enhances the reputation of rural communities, fosters social prosperity, mobilizes domestic savings, creates export opportunities, promotes regional development, and alleviates poverty (Upulwehera et al., 2021; Prasanna et al., 2021). Within the agriculture sector, numerous entrepreneurial opportunities exist, spanning horticulture, floriculture, tea, rubber, coconut, spices, herbs, fruits, and vegetable cultivation, as well as related businesses serving local and global markets. Other avenues include organic farming, agricultural processing, value addition such as jams and juices, dairy farming, aquaculture, and agri-tech ventures, all of which have potential to foster rural development and economic prosperity.

Under the Theoretical Context, there are some theories explaining the concept of Entrepreneurship and sustainability in rural agriculture can be used to contextualize the current study. theory of innovation introduced by Schumpeter emphasized new combinations products, processes and resources driving sectoral transformation and economic development (Schumpeter, 1934). And also, Sustainable Livelihoods Framework of DFID, in 1999 explained very good theoretical background to manage natural, Social, Human, Physical and financial capital by rural entrepreneurs for

achievement of both short- and long-term economic sustainability (DFID, 1999). Another theory of resource-based theory introduced by Barney in 1991, emphasis how tangible and intangible resources used by Agri culture-based entrepreneurs. the resources under the tangible category Knowledge, Skills, attitudes, and networking useful to achieve competitive advantages and sustain their business in proper manner (Barney, 1991). By integrating these theoretical perspectives, the study situates the bibliometric analysis within an established intellectual structure, connecting entrepreneurship concepts with sustainability principles and enabling a clearer interpretation of research trends and knowledge gaps in the field.

1.1 Research questions

The research questions of bibliometric paper are articulated as follows,

1. Who are the pioneer authors and most cited authors in the field of economic sustainability of agri- based Entrepreneurship?
2. What are the publication trends in this field over time?
3. How many articles have been published by country, and what is the extent of international collaboration?
4. Which journals and institutional affiliations dominate research in this area?
5. Which papers are most cited, and what is their impact?
6. What are the emerging trends, key topics, and directions for future research in economic sustainability of Agri-based entrepreneurship?
7. What are the most frequently used keywords in the literature?

Considering above research questions our study implemented bibliometric analysis to find the quality of previous research and trends of the economic sustainability of Agri- based Entrepreneurs in the rural sector. And also, current study contributes to the field in various ways such as, to identify the important journals, Authors, citations trends and countries of the respective field in both qualitative and quantitative approaches providing insight to the research gap. This research article is organized into the following sections such as, Introduction, Research Methodology, Literature Review, Results and Discussion, Conclusion, Recommendations, and Policy Implications.

1.2 Significant of the study

Existing studies mainly focus on agricultural activities such as productivity, cultivation practices, market issues, and policies, while limited attention has been given to the economic sustainability of agriculture-based entrepreneurship in rural sectors. Although rural areas possess resources such as labor and market opportunities, many rural businesses face significant challenges and fail within a short period. Therefore, this study is important as it systematically reviews and maps the existing literature on this field. The bibliometric analysis helps to identify research trends, key contributions, and research gaps, providing useful insights and directions for future research on the economic sustainability of agri-based entrepreneurs in rural areas.

2. LITERATURE REVIEW

According to Gall (1996) and Chris Hart (1998), there are many reasons and benefits for conducting a literature review, including establishing research questions, gaining methodological insights, proposing recommendations for future research, clearly identifying what has been done and what remains to be done, identifying research gaps, discovering relevant variables, and understanding relationships among variables. Alsos et al. (2011), in the Handbook on Entrepreneurship in Agriculture and Rural Development, discuss how entrepreneurship in agriculture is largely attributed to the capacities of farmers and agriculturalists. The book explores entrepreneurship in agriculture, an area often overlooked by mainstream entrepreneurship research, examining various aspects of entrepreneurship across diverse agricultural and food-based industries and socio-economic contexts. It further emphasizes how entrepreneurship in agriculture is influenced by several factors, the importance of economic diversity within rural regions for income levels, and the role of in-migrants in bringing new knowledge and stimulating rural entrepreneurship. Community entrepreneurship, driven by social commitment and collective goals, emerges as a significant driver of rural development. The importance of different forms of capital economic, social, and cultural is highlighted in shaping agricultural entrepreneurship and rural development.

The literature underscores the importance of entrepreneurial skills in developing farm businesses, with some farmers possessing innate abilities while others acquire them through practice (Alsos et al., 2011). According to Pan et al. (2024), entrepreneurship contributes to innovation, economic growth, job creation, poverty alleviation, and income distribution. Withanage and Damayanthi, (2019) emphasize the role of social acceptance in shaping youth participation in agriculture as entrepreneurs. Negative perceptions, arising from a lack of recognition and respect for farmers, can diminish self-efficacy among youth. Barriers such as perceived low social status and insufficient information further hinder youth engagement in agriculture, reducing sector participation. Thus, fostering social acceptance and improving awareness about agricultural entrepreneurship is crucial to encourage youth involvement in rural agribusiness. Factors affecting youth interest include personal attitudes, social acceptance, parental satisfaction with agricultural income, family income level, ownership of land and machinery, anticipated government support, and access to credit facilities. In contrast, low-income levels, limited opportunities, and weak social recognition discourage farmers from motivating their children to pursue farming as a career. These findings highlight the need for targeted knowledge, skills, and training programs focusing on agri-based industries and commercial agriculture to enhance youth participation.

Although bordering regions may lack certain resources, they provide distinctive settings where business start-ups can be combined with a desirable quality of life more easily than in urban areas. This characteristic encourages the emergence of “lifestyle-oriented” entrepreneurship, where individuals establish businesses in rural areas motivated by attractive environmental and social features (Abreu et al., 2018).

Rural entrepreneurship is strongly shaped by family business traditions, entrepreneurial exposure from an early age, and local socio-cultural context (North & Smallbone, 2006; Yu & Artz, 2018). Furthermore, rural identity, ethnic diversity, education, gender, and governmental support are key factors influencing the establishment and sustainability of rural businesses.

Entrepreneurship development is widely recognized as a crucial strategy for economic and social progress. Both global and local research emphasize its importance in fostering economic growth and addressing social issues. Successive Sri Lankan governments have acknowledged entrepreneurship development as contributing significantly to economic development. In a country like Sri Lanka, where poverty and unemployment are pressing concerns, entrepreneurship plays a pivotal role in driving rural economic prosperity.

According to Prasanna et al. (2021), SMEs in Sri Lanka face sustainability, technological, and global challenges that hinder their growth and survival in a competitive landscape. These challenges include poor institutional coordination, language barriers, lack of innovation policies, insufficient government support, financial constraints, inadequate ICT infrastructure, social status issues, gender disparities, difficulties accessing capital, and limited awareness of quality standards. Rural entrepreneurs face additional barriers, such as limited access to finance, low education and skills, inadequate infrastructure, underemployment, and ineffective government policies. Despite the availability of resources such as surplus labor and market opportunities, many rural businesses face significant challenges, with a high closure rate within a short period.

The current literature indicates a clear research gap in the economic sustainability of agriculture-based entrepreneurs, particularly in rural Sri Lanka. While previous bibliometric studies have examined agribusiness, sustainability, and rural development, limited attention has been given to this specific intersection. Therefore, this study addresses this gap by conducting a bibliometric analysis focused on economic sustainability of rural agri-based entrepreneurship between 2015 and 2025. By critically synthesizing the literature around key themes such as entrepreneurship skills, youth participation, social and cultural factors, and rural development, this study provides a structured overview of current knowledge, identifies gaps, and sets directions for future research.

3. METHODOLOGY

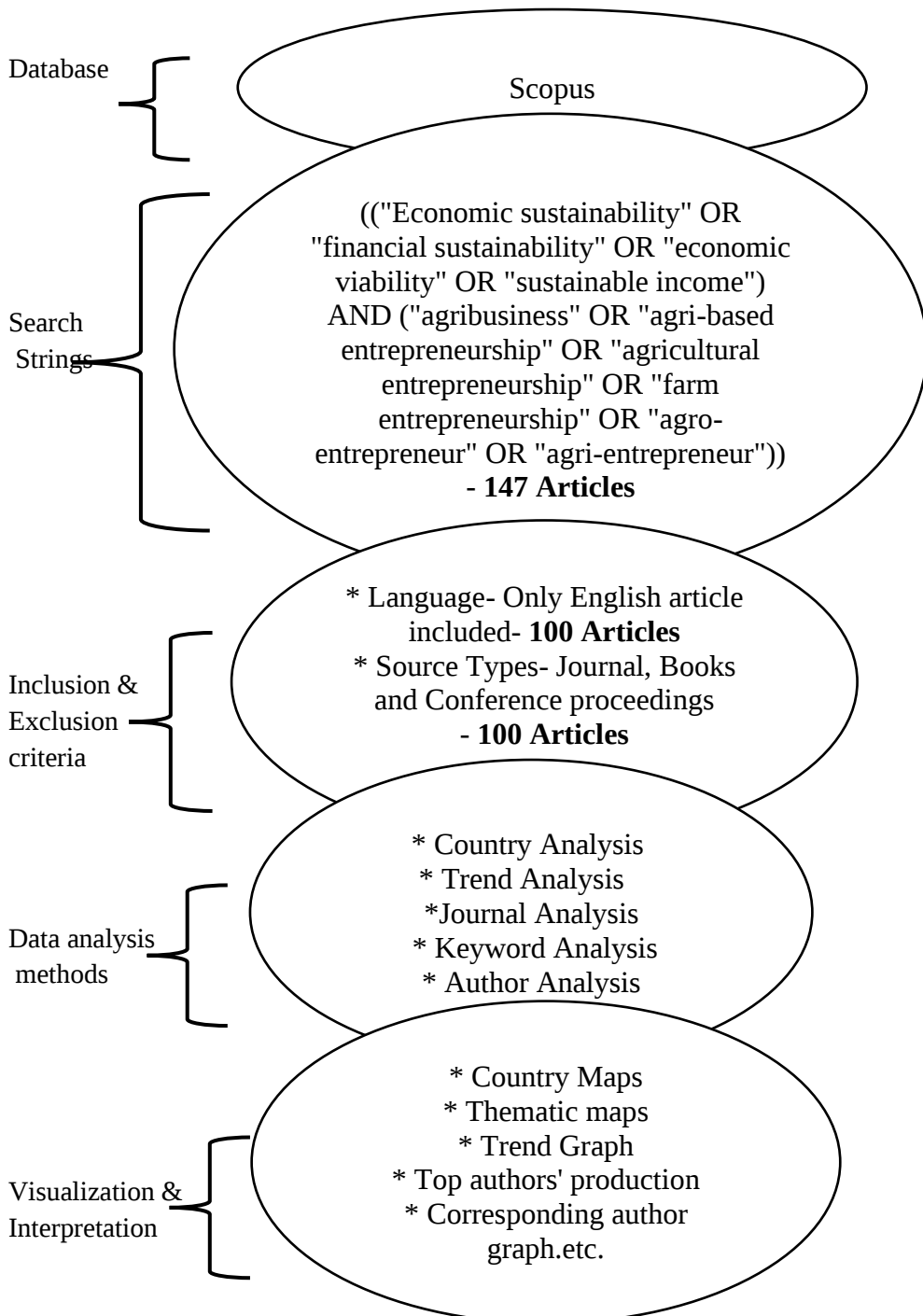
Under the research methodology, this study adopted a bibliometric analysis using the Biblioshiny software. A PRISMA-guided approach was employed, which was introduced by Moher et al. (2009), specifically at the data collection and screening stages to ensure transparency in the selection of relevant literature. The study considered quality research publications that represent the existing literature on the economic sustainability of agriculture-based business ventures in the rural sector. Bibliometric studies help researchers understand the historical development of a research field, highlight its current state, and suggest potential directions for future research (Bila et al., 2022; Hiranya et al., 2022).

The bibliometric analysis followed several key steps, including research design, data collection and export, data screening, data analysis, result visualization, and final interpretation (Zupic & Čater, 2014). The selection of research papers from existing studies should be based on quality, recognized, and widely accepted databases. Therefore, the Scopus database was chosen (<https://www.scopus.com>) because it provides broader coverage of peer-reviewed literature in the fields of agribusiness, sustainability, and economics compared to many other academic databases. The data were accessed on 04 January 2026. The Scopus database is well known for its strong coverage of high-quality, peer-reviewed, and high-impact academic journals across multiple disciplines. To retrieve relevant publications, a structured search strategy was applied using the following search string TITLE-ABS-KEY(("economic sustainability" OR "financial sustainability" OR "economic viability" OR "sustainable income") AND ("agribusiness" OR "agri-based entrepreneurship" OR "agricultural entrepreneurship" OR "farm entrepreneurship" OR "agro-entrepreneur" OR "agri-entrepreneur")). At the initial stage, 147 research studies were extracted from the Scopus database. Their distribution by source type was as follows: 87 (59.1%) journal articles, 24 (16.3%) books, 10 (6.8%) conference proceedings, 6 (4.0%) review papers, 2 (1.7%) book series, and 18 (12.2%) studies classified under other categories. In terms of language, 109 (74.1%) articles were published in English, while 38 (25.9%) were published in non-English languages.

Following the PRISMA screening procedure, several filtering criteria were applied. Only studies published in English were included to ensure global readability and accessibility of the research findings. In addition, only publications within the time frame of 2015–2025 were considered, representing the most recent ten-year period in this research field. Two articles published in 2026 were excluded because the year 2026 was not yet complete at the time of data collection. Furthermore, review papers, book series, and other unrelated categories were excluded to maintain consistency in the dataset. After applying these inclusion and exclusion criteria, the final dataset consisted of 100 articles selected for further bibliometric analysis. The final set of 100 publications included 66 (66%) journal articles, 19 (19%) book chapters, 9 (9%) conference papers, 5 (5%) review articles, and 2 (2%) books. Based on the source type classification, 71 (71%) studies were published in journals, 21 (21%) in books, and 8 (8%) in conference proceedings. The collected data were analyzed using Biblioshiny software which is developed by Massimo Aria and Corrado Cuccurullo, is one of the most widely used tools for bibliometric analysis (Aria & Cuccurullo, 2017). This software was selected because it provides systematic tools for bibliometric mapping, data visualization, and statistical analysis of large bibliographic datasets. The analysis focused on several dimensions, including author keywords, publication trends, contributing countries, and authors, in order to gain an in-depth understanding of the literature.

Bibliometric analysis has become an essential technique for assessing research development and knowledge structures. Accordingly, this study attempted to identify what is known and what remains unknown in the existing literature, particularly in relation to research questions, hypotheses, applied methods, and key thematic areas (Briner & Denyer, 2012). The results were presented using tables and visualizations,

including corresponding author country figures, trend graphs, country maps, and thematic maps. A summary of the research methodology adopted in the current study is presented in Figure -01.



Source- Zupic and Cater, (2014).

Figure 01: Methodology for Bibliometric Analyses

4. RESULT AND DISCUSSION

The Scopus dataset included 100 articles analyzed using Bibloshiny software following results have been emphasized. In this section we explained author analysis, trend analysis, country analysis, source analysis, thematic analysis and keyword analysis. Based on the data description and key information generated by the Bibloshiny report, most indicators were rated as excellent, with the exception of a few items namely, journals, corresponding authors, Keywords Plus, and science categories. Under the main information (overview) section, 100 publications were selected across various document types, including journal articles, books, book chapters, conference papers, and review articles. With regard to authorship, a total of 377 authors contributed to the literature in this field over the selected ten-years period. Among the analyzed publications, 10 articles were authored by a single author, while 20 articles (20%) involved international co-authorship. The annual growth rate of the field was 41.42%, highlighting the rapid expansion of research in this area. Furthermore, the level of collaboration in the field is notable, with an international co-authorship rate of 20% and an average of 3.61 co-authors per document, indicating strong domestic and international research collaboration. In addition, the average number of citations per document was 7.01, suggesting that existing knowledge in the field is being actively cited and utilized by other researchers in the respective field.

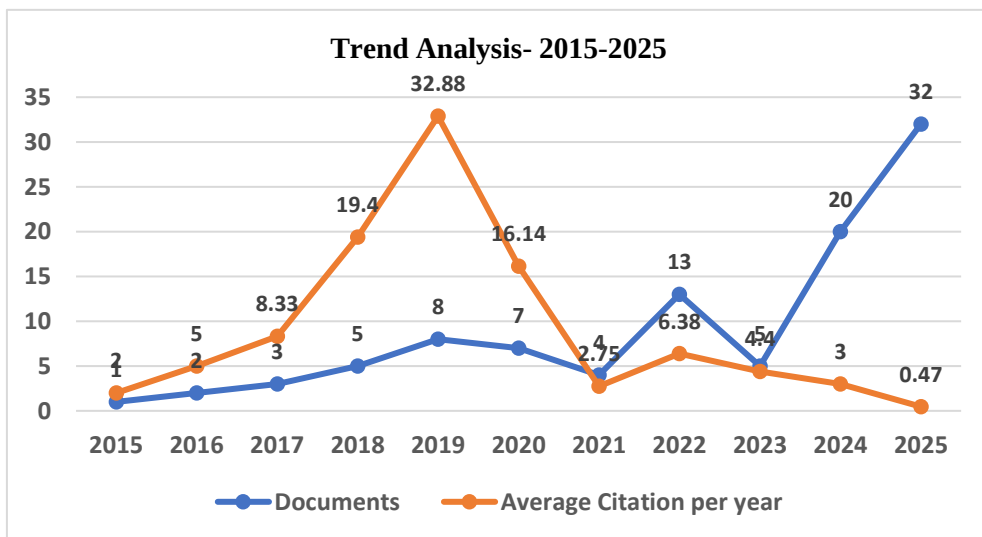
4.1 Trend analysis

This study employed a selected time-series approach to identify research trends in the field of economic sustainability of agriculture-based entrepreneurs in the rural sector. The analysis covered the period from 2015 to 2025, representing the most recent ten years of scholarly output. Selecting this ten-year time frame enables a clear understanding of the field's evolution and development across the past and present, and also supports the identification of potential future research trends. By examining annual research output, the overall development of the field over time can be systematically observed. The following table (Table- 01) and figure (figure - 01) illustrate the research trends related to the economic sustainability of rural agriculture-based businesses.

Table 01. Trend Analysis

Year	Documents	Average Citation per year	Total citable year
2015	1	2	12
2016	2	5	11
2017	3	8.33	10
2018	5	19.4	9
2019	8	32.88	8
2020	7	16.14	7
2021	4	2.75	6
2022	13	6.38	5
2023	5	4.4	4
2024	20	3	3
2025	32	0.47	2

Source: developed by the authors

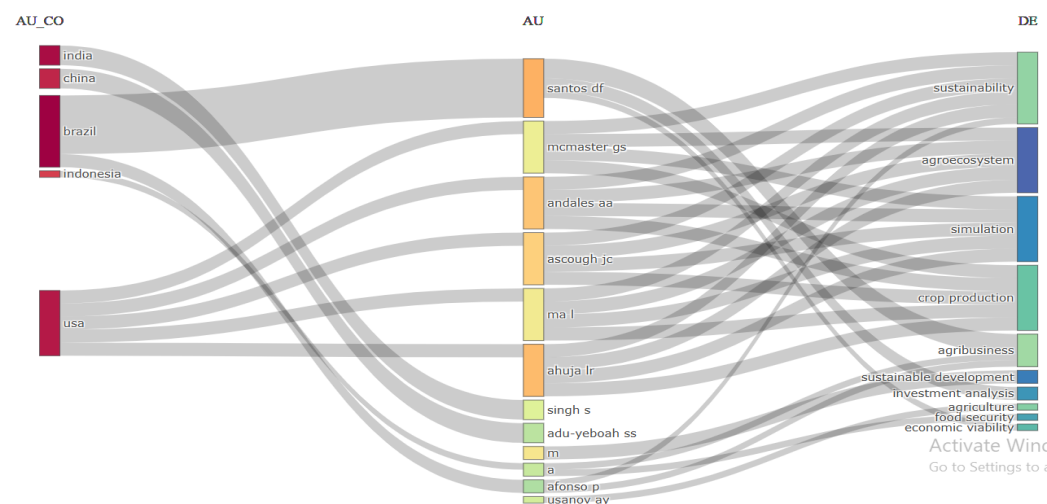


Source: developed by the authors

Figure 02. Trend Analysis

According to the results of the trend analysis, the total number of research articles published year by year has shown a growing trend. For example, in 2015 only one paper was completed, but this number gradually increased. In 2025, the total number of research papers on the economic sustainability of agri-based entrepreneurs reached 32, which emphasizes that this area is growing and that future studies can also consider the economic sustainability of agri-based ventures. In addition, the highest number of citations was received in 2019. Between 2015 and 2021, the number of publications remained at a steady level, without significant increases or decreases. However, from 2021 to 2025, publications rapidly increased which indicates the blue-

colored line in Figure 02. The average citation level was also highest in 2019 it was around-32.



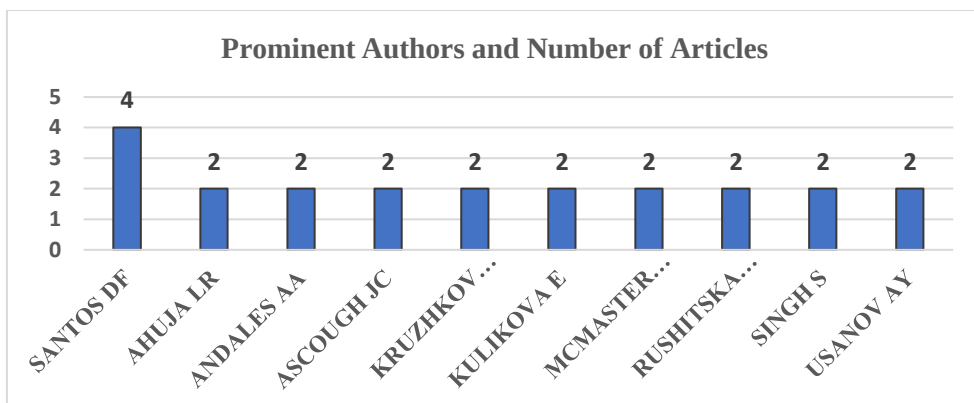
Source: Author constructed based on Biblioshiny software.

Figure 03. Three-Field Plot

The above figure (Figure 03) was considered the Three-Field Plot of this analysis. We compared the 15 most important countries, 15 most important authors, and 15 keywords. With compared to the other countries, the USA, Brazil, China, India, and Indonesia have conducted several studies on the economic sustainability of agri-based businesses. In addition, the most important authors have contributed significantly to the respective field, and they have used prominent keywords.

4.2. Author analysis

In this section, we discussed the most prominent authors who have contributed to the field. The most important authors who contributed to the field of economic sustainability of agri-based entrepreneurs in the rural sector are presented figure in given below. According to articles published in the Scopus database during the period 2015–2025, Santos, D. F. has published four articles, while Ahuja, L. R. and few others have published two papers each in the Scopus database. In addition, there are both single authors and co-author publication in the respective field. Based on the information on authors and the number of publications, it can be concluded that this field (economic sustainability of agri-based entrepreneurs) is not yet matured and is still growing. Under this situation, this area can be proposed as highly suitable for future research, especially in developing countries.



Source: developed by the authors

Figure 04. Most prominent Authors

According to the following table which explained about most cited 15 authors in the field. In terms of the number of total citations for publications of each author mentioned in the table -02. Highest cited authors name Hinson, R., Lensink, Mueller, A., published in 2019 received 136 citations for their paper named “Transforming agribusiness in developing countries: SDGs and the role of FinTech” (Hinson, Lensink, & Mueller, 2019).

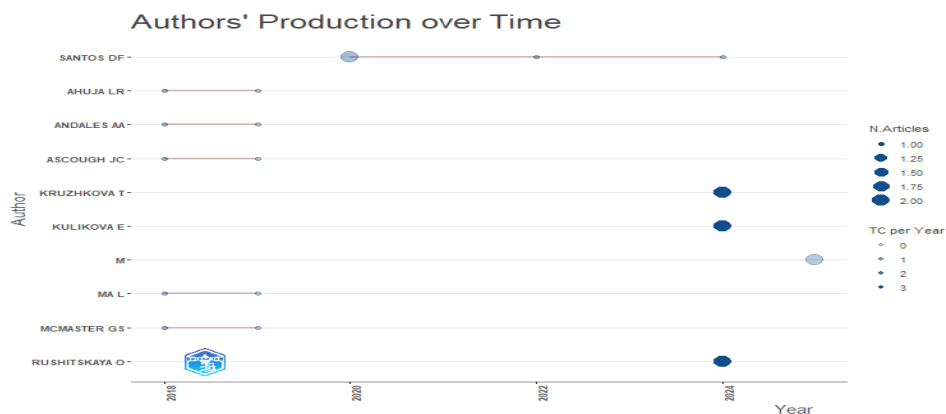
And also, second highest cited authors name Mueller, A., Hlavsa, T., Soukupova, K., Spicka, J., & Stolbova, M., in 2019 earned 88 citations for their paper named “Economic sustainability of farms: An analysis across farm types and regions in the Czech Republic agricultural economics” published in 2019. Mueller et al. (2019).

Table 02. Highest cited Authors in the Field

Author	h-index	g-Index	Total Citation	Number of Publication	Published year
HINSON R	1	1	136	1	2019
LENSINK R	1	1	136	1	2019
MUELLER A	1	1	136	1	2019
HLAVSA T	1	1	88	1	2019
SOUKUPOVA K	1	1	88	1	2019
ŠPIČKA J	1	1	88	1	2019
ŠTOLBOVÁ M	1	1	88	1	2019
HARASYM J	1	1	58	1	2020
PIWOWAR A	1	1	58	1	2020
KESSLER A	1	1	43	1	2018
LANS T	1	1	43	1	2018
MUPFASONI B	1	1	43	1	2018
BALZARINI M	1	1	34	1	2018
MOREA D	1	1	34	1	2018

CÓRDOBA D	1	1	30	1	2019
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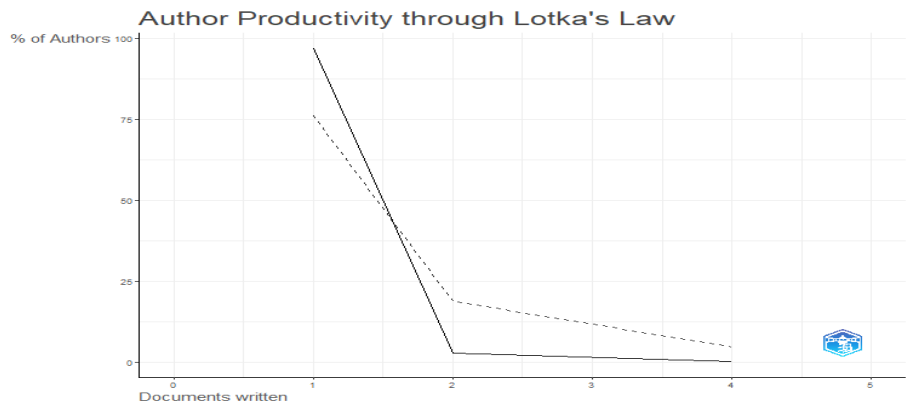
Source: Developed by the authors using Biblioshiny Software



Source: constructed by author's based on Biblioshiny Software.

Figure 05. Authors production over Time

Above diagram emphasized this field is still developing and no more authors published large number of research papers and no received higher number of citations for their work. 04 articles written by Santos, D.F, and published journals with Scopus database from 2020 earnt only 05 citations. In current study can suggest this field is highly suitable for future researchers.



Source: Constructed based on Biblioshiny Software

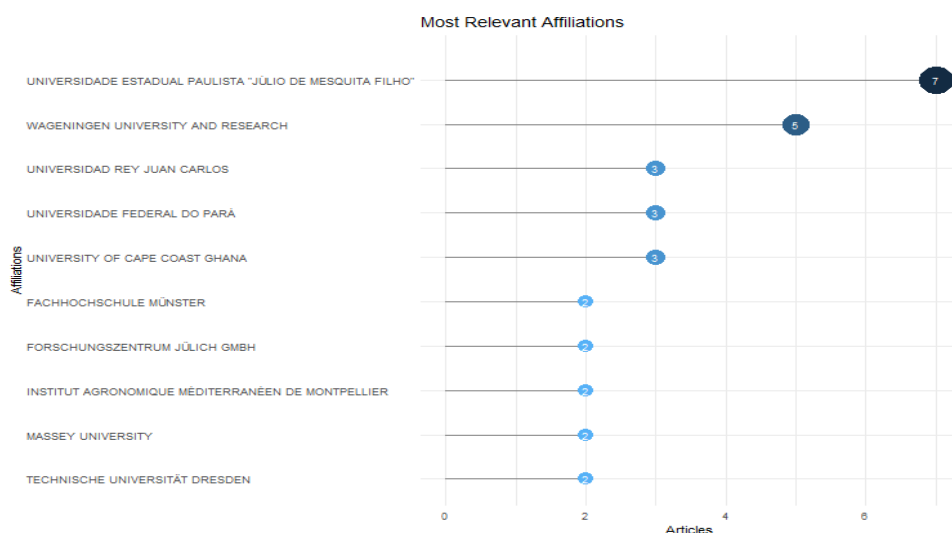
Figure 06. Authors productivity through Lotka's law

According to the data gathered via the Scopus database, authors' productivity can be measured using Alfred J. Lotka's law (Lotka's Law), which explains the frequency distribution of scientific productivity among authors. Most of the authors have written only one paper on topics related to the economic sustainability of agri-based entrepreneurs, accounting for approximately 76% of the total publications. Only a

small proportion of authors have completed and published more than one articles in this research field. This pattern indicates a high level of dispersion in authorship, where a large number of contributors participate sporadically rather than consistently. The field of economic sustainability of agri-based entrepreneurship appears to be emerging and fragmented, with limited core authors who continuously contribute to its theoretical and empirical development.

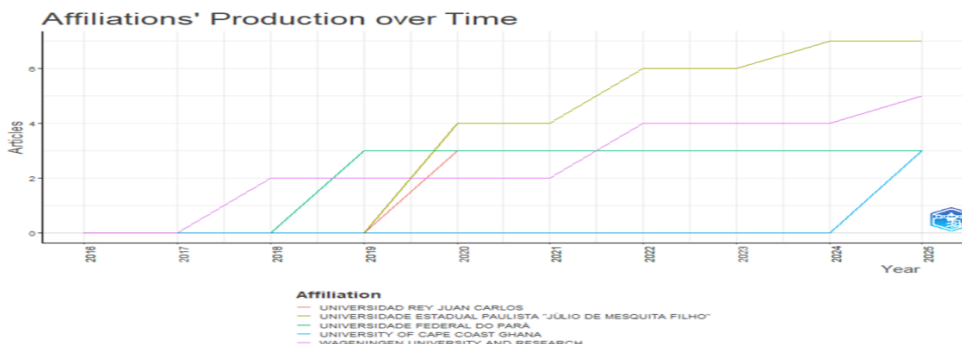
4.3. Affiliation analysis

Affiliation analysis is also an important component of bibliometric paper. It identifies the institutions involved in the research within respective field and examines the number of publications produced under each affiliation. This analysis provides valuable direction and guidance for future researchers by highlighting leading institutions and research centers contributing to the field. Which can be access the available literature and knowledge as well as possibility of proceed the future publication with respective institution.



Source: Constructed based on Biblioshiny Software

Figure 07. Most Relevant Affiliation



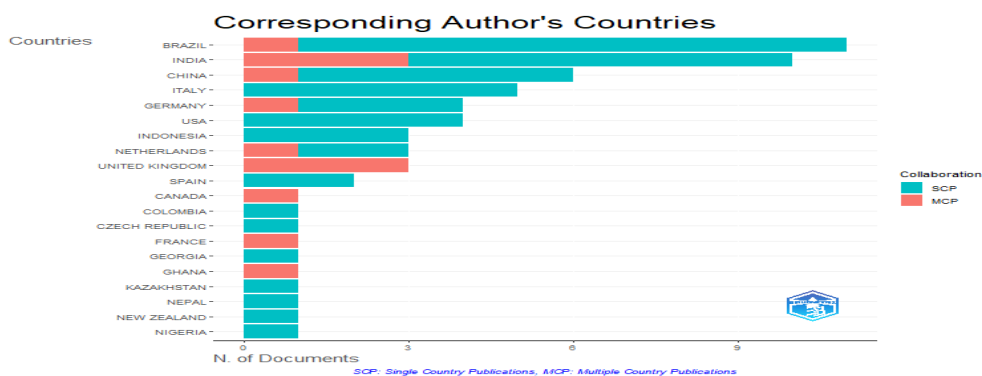
Source: Constructed based on Biblioshiny Software

Figure 08. Relevant Affiliation production over time

According to the results of the biblioshiny software which explain in the above 02 figures (Figure -07 & 08), the prominent affiliation was UNIVERSIDADE ESTADUAL PAULISTA "JÚLIO DE MESQUITA FILHO" which contributed to published 07 articles and also WAGENINGEN UNIVERSITY AND RESEARCH has published 05 articles.

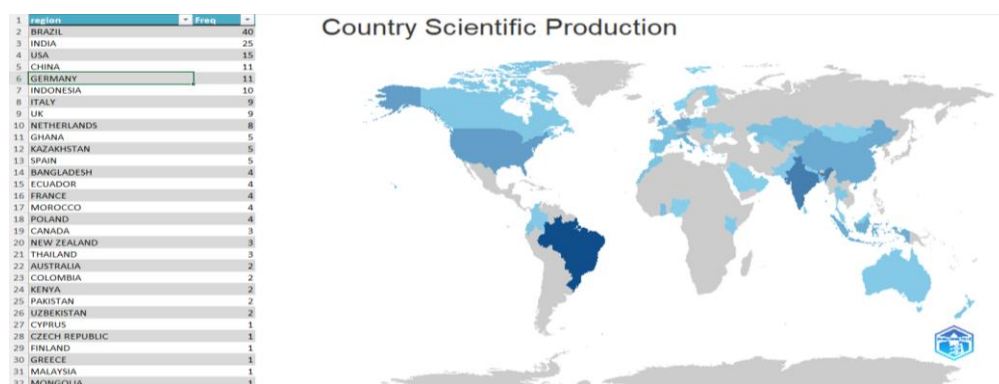
4.4. Country analysis

Country-level analysis is also very important in literature-based bibliometric studies. Different countries face distinct problems and research gaps within a respective field, and scholars from each country engage in research based on their specific contexts. This section explains the nature of existing publications related to the study theme. It examines whether articles are produced as single-country publications or as multi-country collaborations. International collaboration is particularly important, as coordination among authors from different countries allows the sharing of knowledge and experiences, which can lead to higher-quality research outputs and more robust findings.



Source: Constructed based on Biblioshiny Software

Figure 09. Corresponding Author countries



Source: Constructed based on Biblioshiny Software

Figure 10. Country Scientific Production

According to the above two figures (mentioned in figure - 09 & 10) many authors represented in several countries have carried out the research studies in respective field. Brazil, India, USA and China are the most important countries of current field. Highest part is the Singal County Publication with compared to the Multiple country publication therefore our study recommends to future researchers to engage the multiple country publication with collaboration of the more authors for knowledge dissemination and knowledge sharing.

Table 03. Most Cited Countries

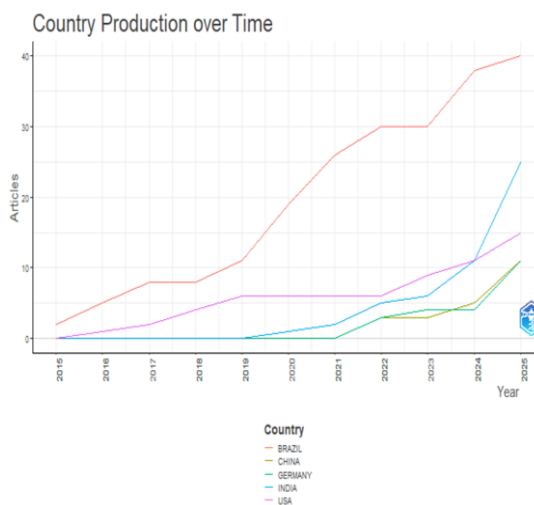
Country	Total Citation	Average Article Citations
CZECH REPUBLIC	88	88
BRAZIL	63	5.7
NETHERLANDS	58	19.3
POLAND	58	58
ITALY	56	11.2
CHINA	31	5.2
CANADA	30	30
UNITED KINGDOM	25	8.3
SPAIN	19	9.5
USA	14	3.5
FRANCE	13	13
GERMANY	9	2.2
NEPAL	6	6
INDIA	5	0.5
GEORGIA	4	4

Source: Developed by the authors using Biblioshiny Software

following table 04 and figure 11 explain about countries production over 10 years' time from 2015 to 2025. Highly contributed country named Brazil in 2015 published only 02 articles and 2025 published 40 articles in respective field. And 02nd highest contributed countries was India which no any publication done in the 2015 but in 2025 completed 25 articles. Other countries such as USA, China and Germany also, there were no any publication in 2015 but 15, 11, and 11 publications have been published in year 2025 respectively.

Table 04. Countries production over time

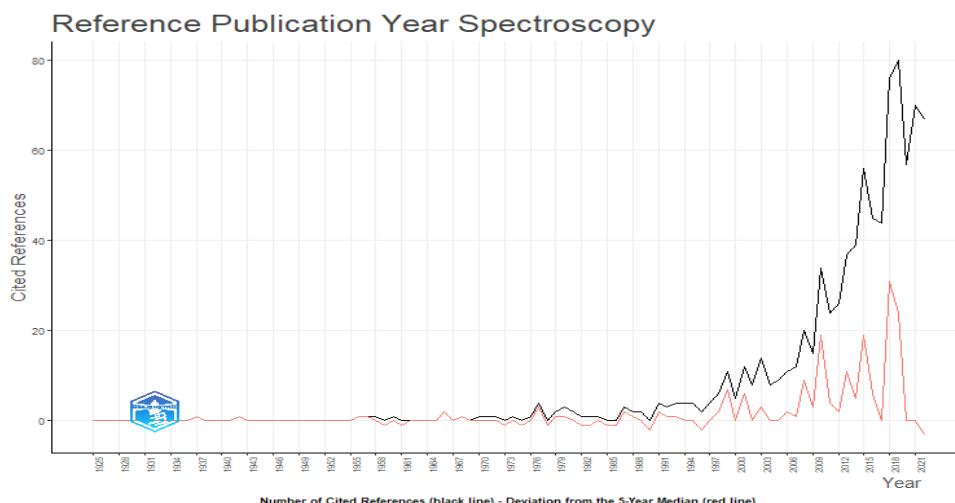
Country	Year	Article
BRAZIL	2015	2
	2025	40
INDIA	2015	0
	2025	25
USA	2015	0
	2025	25
CHINA	2015	0
	2025	11
GERMANY	2015	0
	2025	11



Source: Developed by the authors using Biblioshiny Software

Figure 11. Countries production over time

The following figure explains about citation of reference publication year spectroscopy which can be identified the historical roots and intellectual foundations of a research field. Its further explain about distribution of cited references of the existing literature using their publication years which impact to the seminal works that have significantly influential to development of the field. According to the figure the citation for references/available publications on respective field gradually increase. After 2009 to 2019 citation has been increased. Year 2018 is the highly cited year.



Source: Constructed based on Biblioshiny Software

Figure 12. Reference publication year spectroscopy

4.5. Document analysis

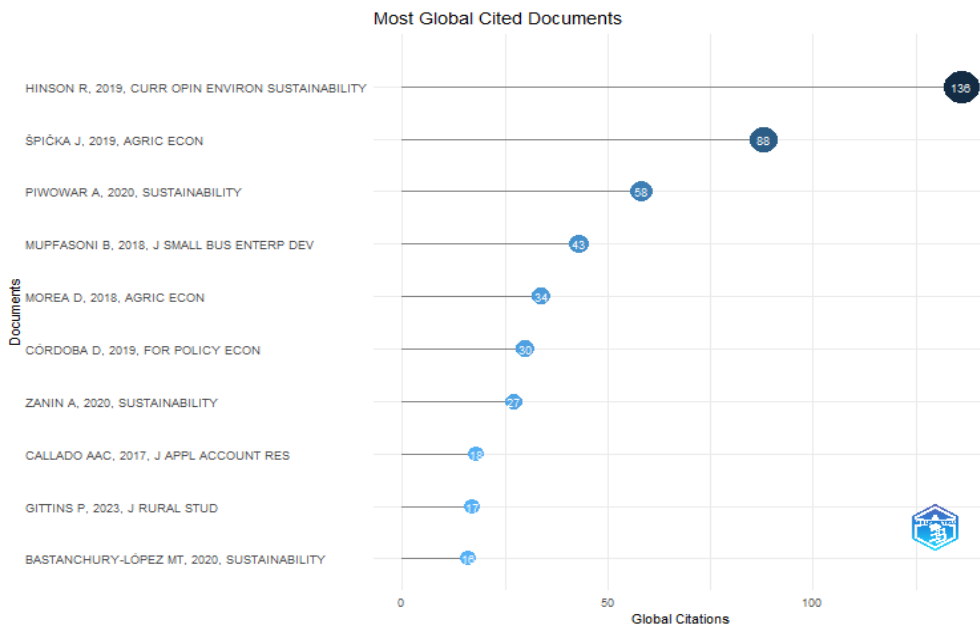
According to Table 5 and Figure 13, the most influential research paper in the current field is “Transforming Agribusiness in Developing Countries: SDGs and the Role of FinTech” authored by Huang and Rozelle (2019), published in *Current Opinion in Environmental Sustainability*. This article has received 136 citations, with an average of 17 citations per year. The second most cited paper in the field is “Economic Sustainability of Farms: An Analysis Across Farm Types and Regions in the Czech Republic” authored by Mueller et al. (2019), published in the *Agricultural Economics* journal. This study has received 58 citations, with an average of 11 citations per year. Similarly, the third highly cited paper in the field is “The Importance and Prospects of the Use of Algae in Agribusiness” by Piwowar and Harasym (2020), which has received 58 citations, with an average of eight citations per year. Another notable study, “Agricultural Entrepreneurship in Burundi: Drivers and Outcomes” by Mupfasoni et al. (2018), has obtained 43 citations, averaging five citations per year. In addition, the article “Financial Sustainability of a Public–Private Partnership for an Agricultural Development Project in Sub-Saharan Africa” by Morea and Balzarini (2018) has received 34 citations, with an average of four citations per year.

Table 05. Most global cited 15 papers in the field

Author/Year	DOI	Total Citations	TC per Year
HINSON R, 2019	10.1016/j.cosust.2019.07.002	136	17
ŠPIČKA J, 2019	10.17221/269/2018-AGRICECON	88	11

PIWOWAR A, 2020	10.3390/su12145669	58	8
MUPFASONI B, 2018	10.1108/JSBED-03-2017-0130	43	5
	10.17221/161/2017-		
MOREA D, 2018	AGRICECON	34	4
CÓRDOBA D, 2019	10.1016/j.forpol.2019.102007	30	4
ZANIN A, 2020	10.3390/su12156038	27	4
CALLADO AAC, 2017	10.1108/JAAR-04-2016-0037	18	2
GITTINS P, 2023	10.1016/j.jrurstud.2023.103141	17	4
BASTANCHURY- LÓPEZ MT, 2020	10.3390/SU12083368	16	2
W KILELU CW, 2022	10.1080/1389224X.2021.1888759	15	3
KERTOLLI E, 2024	10.1186/s40100-024-00327-5	13	4
VROEGINDEWEY R, 2018	10.1108/JADEE-11-2016-0075	13	1
ADU-YEBOAH SS, 2022	10.1080/14330237.2022.2066341	12	2
DONO G, 2022	10.36253/bae-12211	10	2

Source: Developed by the authors using biblioshiny software

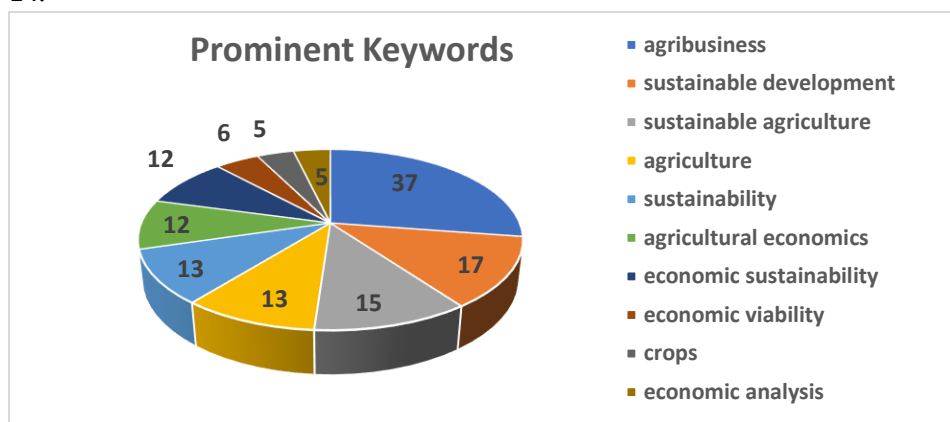


Source: developed by the authors using biblioshiny software

Figure 13. Most Global Cited 10 Papers

4.6. Keyword analysis

In this section, we examine the types of keywords used by previous authors, the most frequently used keywords, and the main research areas that have received significant attention in the existing literature. Keyword analysis helps identify emerging themes and underexplored areas that can guide future research. Thus, it provides valuable insights by highlighting dominant topics, research trends, and potential gaps within the field. The most frequently used keywords include agribusiness, sustainable development, sustainable agriculture, agriculture, sustainability, agricultural economics, economic viability, and economic sustainability, as illustrated in figure 14.



Source: developed by the authors

Figure 14. Prominent Keywords

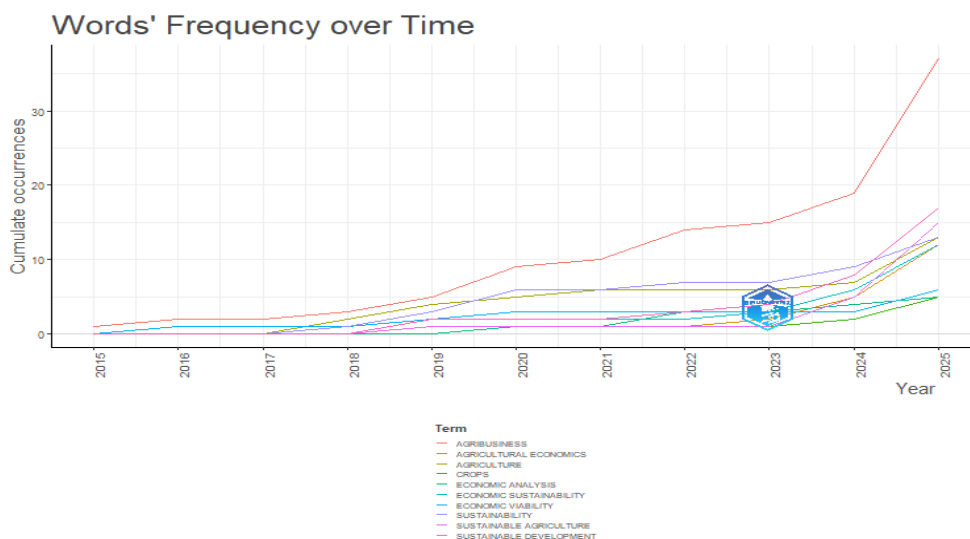
According to the above figure, (figure- 14) the mostly used keywords are Agribusiness (37), Sustainable Development (17), Sustainable Agriculture (15), Sustainability (13) Agricultural economics (12) etc.



Source: developed by the authors using biblioshiny software

Figure 15. Word Cloud (Keywords)

According to the above figure 15, mostly used words in the word cloud are, Agribusiness, Sustainable development, Suitability, economic sustainability in our field.

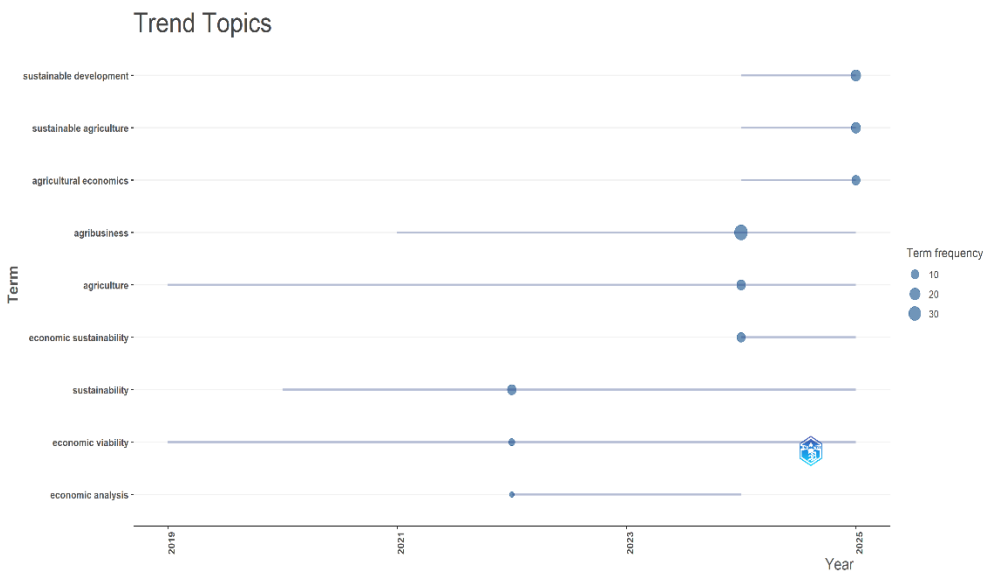


Source: developed by the authors using Biblioshiny software

Figure 16. Word frequency over time

4.7. Trend topic for future studies

According to the Biblioshiny software result, the trend topic analysis indicates a clear shift in research focus toward sustainability-oriented and economically grounded themes within the agribusiness literature. Keywords such as agribusiness, sustainability, and agriculture continue to dominate the field, suggesting that these areas will remain central to future studies. The increasing prominence of economic sustainability, sustainable development, and sustainable agriculture from 2024 onwards highlights a growing research interest in integrating economic performance with long-term sustainability objectives. Future studies are likely to focus more on evaluating economic viability and conducting in-depth economic analyses of agribusiness and agricultural systems, particularly in the context of sustainable development. The emergence of agricultural economics as a trend topic further suggests opportunities for research that combines policy analysis, farm-level decision-making, and sustainability outcomes. Overall, the trend topics indicate that future research should emphasize economically sustainable agribusiness models, resilience of agricultural systems, and the role of sustainability-driven strategies in enhancing long-term agricultural development.



Source: developed by the authors using Biblioshiny software

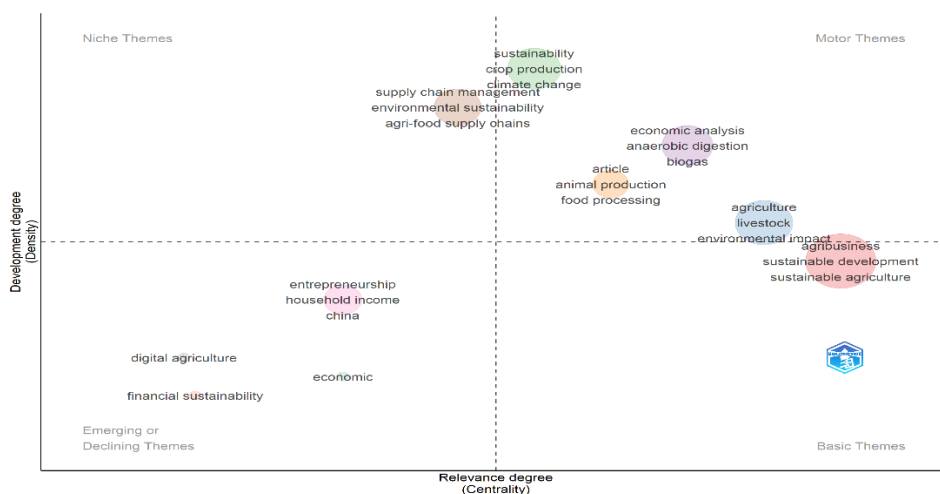
Figure 17. Trend topics

According to the above figure (17), The trend topics analysis illustrates the evolution of key research themes in agriculture-based entrepreneurship from 2019 to 2025. The results indicate that topics such as agriculture, sustainability, and economic viability have been consistently discussed over the years, reflecting their fundamental importance in the literature. In recent years, themes such as agribusiness, sustainable agriculture, and sustainable development have gained increasing attention, indicating a growing research focus on sustainable practices and economic aspects of

agricultural entrepreneurship. Overall, the trend analysis suggests that sustainability-oriented agricultural development and agribusiness are emerging as important research directions in the field.

4.7.1. Thematic map analysis

According to the following figure (18) The thematic map analysis of keywords was conducted using Biblioshiny to identify major research themes in agriculture-based entrepreneurship in the rural sector. The results indicate that themes such as agriculture, livestock, agribusiness, sustainable development, and sustainable agriculture appear as motor themes, showing high relevance and strong development in the literature. Sustainability, climate change, and agri-food supply chains appear as niche themes, reflecting specialized but well-developed topics. Basic themes include environmental impact and related sustainability issues, which are widely connected to the field. Meanwhile, digital agriculture, financial sustainability, and entrepreneurship appear as emerging themes, indicating potential areas for future research.



Source: developed by the authors using Biblioshiny software

Figure 16. Thematic Map

5. CONCLUSION

The existing literature were revied very systematic way in the current paper under the theme of economic sustainability of Agri based entrepreneurs in rural sector from the Scopus database published between 2015-2025 and collected data was analysis using Biblioshiny software. According to the data analysis and result of the current study can be concluded aligning with research questions already articulated above in the article. According review of the to the existing studies, Entrepreneurship education and the sustainability of entrepreneurs is also a topic that needs more investigation in

the future studies as well (Pascucci et al. 2021). There is a need to consider how the required sustainability practices introduced by the universities in their curriculum can improve the sustainability of entrepreneurs. It is better to conduct case studies, in-depth interviews, and mixed-method research in different countries and contexts (Hiranya, 2021). This study provides a comprehensive overview of the research landscape on the economic sustainability of agri-based businesses, highlighting key trends, contributors, and knowledge structures within the field. The findings reveal that scholarly contributions are geographically concentrated, with the United States, Brazil, China, India, and Indonesia emerging as the most active countries. This pattern reflects the strong relevance of economic sustainability issues in both developed and developing agrarian economies.

The temporal analysis indicates a clear upward path in research output, particularly from 2021 to 2025, demonstrating a rapidly growing academic interest in this domain. Although publication growth accelerated in recent years, citation patterns show that earlier contributions, especially those published in 2019, had a greater academic impact, as evidenced by the highest average citation level recorded during that year. Notably, the work of Hinson, Lensink, and Mueller (2019), which focused on agribusiness transformation and the role of FinTech in achieving the Sustainable Development Goals, stands out as the most influential contribution in the field. Keyword analysis suggests that the literature is strongly anchored in themes related to agribusiness, sustainable development, sustainable agriculture, agricultural economics, and economic viability. This indicates that the field is conceptually aligned with broader sustainability and development debates, while maintaining a strong economic orientation. At the same time, the diversity of keywords points to the interdisciplinary nature of the research area. Authorship and affiliation analyses further confirm that the field is still evolving. Although a large number of authors have contributed during the study period, only a few researchers have made repeated contributions. Prominent institutions such as Universidade Estadual Paulista “Júlio de Mesquita Filho” and Wageningen University & Research have played a leading role in advancing research output, reflecting the importance of strong academic ecosystems in shaping this research domain.

Finally, the dominance of single-country publications over multi-country collaborations suggests that international research cooperation remains limited. Strengthening cross-country and multi-author collaborations could significantly enhance the depth, diversity, and global relevance of future studies. Overall, the findings suggest that research on the economic sustainability of Agri-based entrepreneurs is still in an emerging stage, offering substantial opportunities for future research, particularly in developing countries where Agri-based activities play a critical role in economic development and sustainability.

5.1 Limitation

This study has several limitations. we only used Scopus-indexed publications, but future studies may integrate multiple databases for enhanced coverage. And also, we used and select only specific time line as mentioned in the methodology section, we excluded some paper such as non-English papers, book series, conference abstract.

etc. we as research team suggest to used various types of publication and deference time lines for the future study. Not only that we used quantitative study here and also in the future studies can used amalgamate the qualitative studies and compare the outcome which will be more productive and easier to understand the real situation of the selected research area. We only limited to the given keywords and search strings when find the available research. Future research could address these limitations by incorporating multiple databases and mixed-method approaches.

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