

International Journal of Agriculture Extension and Social Development

Volume 9; Issue 6; June 2026; Page No. 619-629

Received: 17-04-2026
Accepted: 23-05-2026

Indexed Journal
Peer Reviewed Journal

Cultivating future leaders: A bibliometric review on youth empowerment in Agripreneurship

¹Ishika Gautam, ²Saravanan Raj and ³Sandipamu Raahalya

¹MANAGE Research Intern, MANAGE, Center for Agricultural Extension Innovations, Reforms & Agripreneurship (CAEIRA), National Institute of Agricultural Extension Management (MANAGE), Rajendranagar, Hyderabad, Telangana, India

²Director (Agricultural Extension), MANAGE, Center for Agricultural Extension Innovations, Reforms & Agripreneurship (CAEIRA), National Institute of Agricultural Extension Management (MANAGE), Rajendranagar, Hyderabad, Telangana, India

³MANAGE Fellow, MANAGE, Center for Agricultural Extension Innovations, Reforms & Agripreneurship (CAEIRA), National Institute of Agricultural Extension Management (MANAGE), Rajendranagar, Hyderabad, Telangana, India

DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i6h.3749>

Corresponding Author: Ishika Gautam

Abstract

This review article delves into the evolving research landscape surrounding youth involvement in agripreneurship, which is increasingly seen as a transformative sector with the potential to address critical issues such as youth unemployment, agricultural modernization, and rural economic growth. As traditional farming practices face challenges from urbanization, technology shifts, and changing labor markets, agripreneurship –an intersection of agriculture and entrepreneurship –emerges as a viable solution for engaging the younger generation in agriculture. Youth agripreneurs play a pivotal role in revolutionizing agriculture by integrating business-oriented approaches, leveraging technology, and contributing to sustainability efforts.

Utilizing bibliometric analysis, employing tools like Bibliometrix and VOSviewer, this study systematically evaluated the existing literature to identify publication trends, key contributors, and thematic clusters related to youth agripreneurship. The analysis includes a comprehensive review of national and global initiatives aimed at empowering youth in agriculture, the role of various stakeholders, and the barriers faced by young agripreneurs. A systematic search was conducted using scopus databases, resulting in the selection of a diverse range of articles that provide insights into policy frameworks, technological innovations, and youth focused programs. Key findings highlight the importance of fostering an enabling ecosystem for youth agripreneurs, emphasizing the need for access to finance, training, mentorship, and market linkages. Despite the positive trends, the study identifies several knowledge gaps, particularly in terms of policy support, access to capital, and market linkages. Despite the positive trends, the study identifies several knowledge gaps, particularly in terms of policy support, access to capital, and the scalability of agribusiness ventures initiated by young entrepreneurs. Furthermore, the review underscores the critical role of technology integration –such as precision farming, digital platforms, and agri-tech innovations –in supporting the growth of agribusinesses. By addressing these gaps and facilitating targeted interventions, stakeholders can enhance youth participation in agripreneurship, contributing to the broader goals of sustainable agriculture and rural empowerment.

Keywords: Agripreneurship, youth empowerment, sustainable agriculture, bibliometric analysis, agricultural modernization, entrepreneurship, technology integration, policy support, rural development

1. Introduction

Agriculture, once considered the backbone of rural economies, is undergoing a significant transformation to adapt to the challenges of the 21st century. Youth involvement in agriculture, particularly through agripreneurship, has emerged as a promising pathway to modernize the sector and address the growing issues of youth unemployment, food security, and rural development. Agripreneurship –a fusion of agriculture and entrepreneurship –enables young individuals to engage in agriculture as business-oriented ventures, fostering innovation, value addition, and market linkages (Lal *et al.*, 2022). As the global youth population rises, www.extensionjournal.com

agripreneurship is increasingly recognized as a critical tool for promoting rural economic growth and ensuring sustainable agricultural practices.

The need for youth engagement in agriculture has become more pressing due to rural-to urban migration, technological advancements, and a declining agricultural workforce (FAO, 2021). Traditional farming is often seen as unattractive by younger generations due to low profitability and the perception of agriculture as labor-intensive and stagnant (Sinyolo & Mudhara, 2021). However, agripreneurship offers an alternative model that integrates innovative technologies such as precision farming, digital platforms, and smart irrigation systems, which can

significantly increase efficiency and profitability (Amare *et al.*, 2022). By empowering youth to participate in agriculture through entrepreneurial ventures, agripreneurship addresses the dual goals of improving livelihoods and advancing sustainable development.

Global and national initiatives have recognized the potential of agripreneurship to address unemployment while contributing to the Sustainable Development Goals (SDGs), particularly those related to poverty reduction, food security, and climate action (United Nations, 2022). Programs such as the Agri-Clinics and Agri-Business Centers (ACABC) in India and the International Youth Agripreneurship Model have been instrumental in training and supporting young agripreneurs (MANAGE, 2024). These programs provide crucial support such as access to credit, mentorship, and market linkages, helping youth overcome common barriers like financial constraints and lack of technical knowledge (Kahan, 2022).

Despite these efforts, there remain significant challenges hindering the full realization of youth agripreneurship. Key barriers include limited access to land and capital, inadequate infrastructure, and insufficient policy support (Ayanlade & Radeny, 2023). Moreover, gender disparities persist, with young women in agriculture often facing additional challenges in accessing resources and markets (Singh *et al.*, 2023). Addressing these issues requires a comprehensive approach that fosters an enabling ecosystem for youth agripreneurs by providing targeted interventions such as skill development, policy reforms, and technological access.

This bibliometric review aims to explore the research landscape on youth agripreneurship, analyzing trends, key contributors, and thematic clusters in the literature. Through this review, we seek to identify knowledge gaps and highlight areas where further research and policy interventions are needed to empower youth in agriculture and enhance their contributions to sustainable development.

The Role of Research in Supporting Youth Agripreneurship

Research plays an essential role in supporting youth agripreneurship by offering data-driven insights, identifying challenges, and proposing solutions that empower young people in the agricultural sector. It helps pinpoint areas of opportunity in agriculture, such as agri-tech, value-added products, and sustainable farming practices, where youth can innovate and build successful businesses. Research also highlights barriers faced by young agripreneurs, including limited access to finance, inadequate training, market constraints, which in turn guides the development of interventions aimed at addressing these challenges. Furthermore, research informs the creation of tailored training and mentorship programs that equip youth with the necessary technical, entrepreneurial, and leadership skills to succeed. Through continuous exploration, research introduces innovative agricultural solutions such as precision farming and mobile-based platforms that can be adopted by youth agripreneurs to enhance productivity and sustainability. Additionally, research provides evidence for policy development, advocating reforms that create a

favorable ecosystem for youth in agribusiness by ensuring access to land, finance, and infrastructure. It also encourages the adoption of sustainable practices by educating young agripreneurs on the importance of eco-friendly farming, helping them align their businesses with food security and environmental conservation goals. Research-driven success stories further inspire and demonstrate the potential of youth-led agripreneurship in contributing to rural development and tackling unemployment. Ultimately, research fosters collaborations among academic institutions, governments, and the private sector, building a network of support that enables youth to access resources and thrive in the agripreneurship landscape.

2. Methodology

A Systematic Literature Review is a kind of literature review that systematically and comprehensively identifies, assesses, and synthesizes scientific research with a rigorous methodological process with the aim of addressing specific research questions (Struckell *et al.*, 2022). It is unbiased, reproducible, and reliable due to the clear and well-planned protocol adopted to consolidate the research field (Rathnayake *et al.*, 2020).

2.1 Article search and identifications

In the present study articles used were retrieved from Scopus database. Scopus is a highly regarded article search engine recognized by experts for its extensive coverage, surpassing that of other search engines. The Scopus database encompasses records of 17 million researchers, 90 million curated documents, 80,000 institutional profiles, and 7,000 publishers (Scopus, 2023). This highlights the database's broad scientific scope, making it a valuable resource for achieving the study's objectives. The process of identifying relevant research papers involves employing well-constructed search strings and precise phrases to locate articles pertinent to the current topic of interest.

A total of 298 articles were identified by using the first search equation with terms "Youth" AND "Agripreneurship", "Youth" AND "Agribusiness Development", "Youth Empowerment" AND "Agripreneurship" (Table 1). The second search equation combined terms like "Youth" AND "Employment" AND "Agriculture", "Youth" AND "Motivation" AND "Agribusiness", "Youth" AND "Agribusiness" AND "Opportunities", "Youth" AND "Innovation" AND "Agriculture", "Youth" AND "Agricultural" AND "Policies", "Youth" AND "Entrepreneurship" AND "Agriculture" resulting in 974 potential articles (Table 2).

From the two search equations, a total of 1272 articles were identified in the initial search and a total of 877 articles were excluded based on the inclusion and exclusion criteria. The inclusion criteria combine with the year from 1987 to 2024, subjects including Agricultural and Biological Sciences, Environmental Science, Social Sciences, Economics, Econometrics and Finance, Business, Management and Accounting, Multidisciplinary, Earth and Planetary Sciences. It includes only articles from journals in English. The articles with open access and fully published were only selected.

Table 1: search equation

Terms used	Initial results	Results after exclusion
“Youth” AND “Agripreneurship”	32	15
“Youth” AND “Agribusiness Development”	265	95
“Youth Empowerment” AND “Agripreneurship”	01	01
Total	298	111

Table 2: Second search equation

Terms used	Initial results	Results after exclusion
“Youth” AND “Employment” AND “Agriculture”	339	95
“Youth” AND “Motivation” AND “Agribusiness”	5	4
“Youth” AND “Agribusiness” AND “Opportunities”	31	12
“Youth” AND “Innovation” AND “Agriculture”	111	26
“Youth” AND “Agricultural” AND “Policies”	396	117
“Youth” AND “Entrepreneurship” AND “Agriculture”	92	30
Total	974	284

From these 395 articles, they were further screened and 98 duplicates were excluded. Now from these 297 articles, 201 articles were excluded after going through the titles and abstract. Finally, 96 articles with relevant titles and abstract were included for the further analysis. This was diagrammatically shown in the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram which is a visual representation of the stages of a systematic review or meta-analysis (Fig 1).

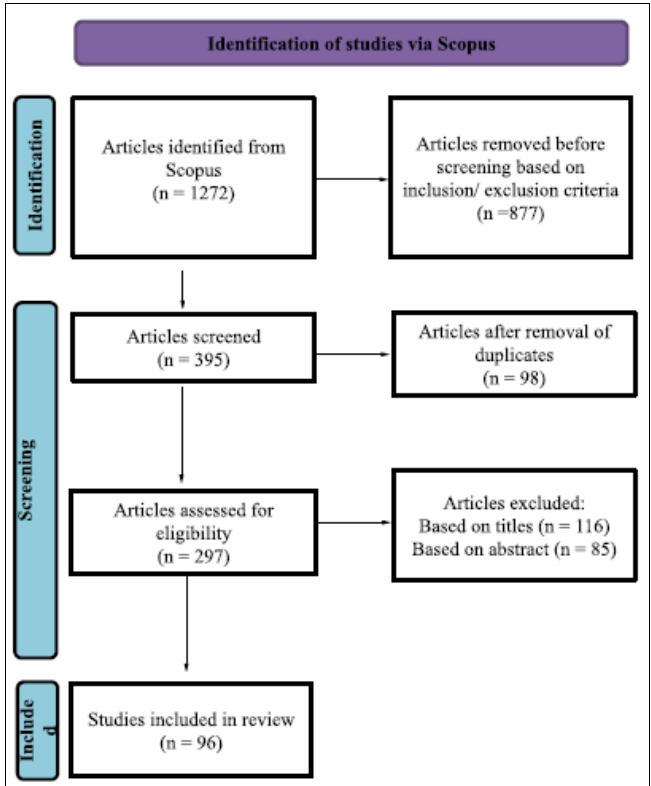


Fig 1: PRISMA flow diagram for the systematic review

2.2 Analysis of search results

The value of a systematic review in research largely relies on the application of rigorous methodologies, clear reporting, and scientific strategies to minimize potential errors and biases (Moher *et al.*, 2009; Linnenluecke *et al.*, 2019). In this study, the systematic literature review process

was effectively supplemented with bibliometric analysis, descriptive statistics, and visual charts to derive meaningful insights on the topic under consideration. Scholars have long contended that a comprehensive review combined with bibliometric analysis can establish robust foundations for advancing a field in innovative and impactful ways. Such an approach enables researchers to (a) gain a comprehensive overview of the field, (b) identify knowledge gaps, (c) generate new research ideas, and (d) strategically position their contributions to the domain.

To address the research questions and test the hypotheses, we utilized a combination of R-Package Bibliometrix and VOSviewer software, both of which are widely recognized as powerful tools among scholars. Bibliometrix provides interactive analysis through web applications and features a user-friendly interface built on Shiny under the R-package framework, which can be accessed via RStudio without requiring coding expertise. Similarly, VOSviewer offers diverse functionalities for conducting performance analysis, science mapping, and network analysis.

3. Results and Discussion

The dataset spans from 1987 to 2024 and includes a total of 95 documents sourced from 70 different journals, books, and other academic publications, reflecting a wide range of sources/. With an annual growth rate 6.42%, the research has steadily increased over the years, contributing to a moderate body of work. The average age of the documents is 5.13 years, indicating that the studies are relatively recent and relevant. On average, each document has been cited 16.78 times, reflecting a moderate academic impact, with a total of 4432 references cited across all publications, demonstrating the depth of research. The dataset includes contributions from 333 unique authors, and while only 11 documents are single-authored, most involve collaborative efforts, as shown by an average of 3.85 co-authors per paper. Additionally, 38.95% of the publications feature international collaborations, highlighting the global nature of the research. All 95 documents are journal articles, underscoring the focus on peer-reviewed publications as the primary medium for disseminating findings. Keywords and author-defined terms (291 and 329, respectively) further show the diversity of topics explored in the field.

Table 3: Key bibliometric details about research

Description	Results
Main information about data	
Timespan	1987:2024
Sources (Journals, Books, etc)	70
Documents	95
Annual Growth Rate per cent	6.42
Document Average Age	5.13
Average citations per doc	16.78
References	4432
Document contents	
Keywords Plus (ID)	291
Author's Keywords (DE)	329
Authors	
Authors	333
Authors of single-authored docs	11
Authors collaboration	
Single-authored docs	11
Co-Authors per Doc	3.85
International co-authorships per cent	38.95
Document types	
Article	95

3.1 Most relevant sources

The given bar chart (Fig.2) illustrates the number of documents published in various journals related to sustainability and agriculture research. “Sustainability (Switzerland)” stands out as the most significant contributor, with around 11 documents, indicating its prominent role in disseminating knowledge on sustainability. Following this, the “IDS Bulletin” and the “Journal of Development Studies” each have a smaller, yet notable, contribution, with around 4 and 3 documents respectively. Other journals, such as “Agricultural and Resource Economics”, “Cogent Economics and Finance”, “Cogent Social Sciences”, “Economic Affairs”, “Frontiers in Sustainable Food System”, “Heliyon”, “Indian Journal of Extension Education” each contribute 2 documents, showcasing the wide range of sources that researchers in this field use to share their findings. This distribution highlights the diversity of journals contributing to sustainability and agriculture research, with some focusing on broad international perspectives while others bring in more specialized, regional views. This ensures that research on sustainability and agripreneurship benefits from both global and local insights, encouraging collaboration across different regions and disciplines.

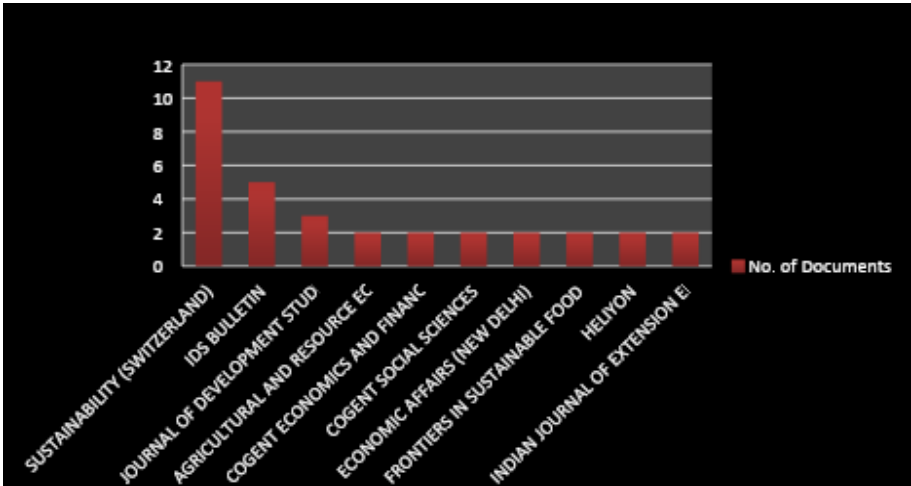


Fig 2: Most relevant sources

3.2 Annual Scientific Production

Imagine a quiet stream that begins as a trickle, flowing slowly through a vast landscape of scientific discovery. From 1997 until 2015, the flow of research on this topic remains small, like tiny ripples in a calm pond, with only a handful of articles being published each year. These early years symbolizes the seeds of thought –small, yet carrying potential. Then, in 2016, something shifts. The water begins to pick up speed, and by 2017, a wave of curiosity surges, doubling the number of articles compared to the quiet past. This represents a moment where the stream becomes a river – more researchers are jumping in, and the field starts to gain momentum. By2018, this river transforms into a powerful current, with research productivity nearly doubling again. The surge continues through 2019 and 2020, as the scholarly community becomes increasingly captivated by this area, producing more than ever before. The years 2021

and 2022 reflect a flood of interest. With over 30 articles in 2021 and 50+ articles in 2022, it’s as if a research dam has broken, releasing an outpouring of insights and discoveries. This rapid rise indicates a major turning point –this is no longer just a niche subject; it’s an essential stream of knowledge in global scientific discourse. However, like all dynamic systems, the flow starts to stabilize by 2023 and 2024. Though still strong, with article counts in the 40s and 50s, the pace has slightly dipped compared to its 2022 peak. This could signify a maturation of the research field –now evolving from rapid growth to consolidation, where researchers refine and build upon earlier work. In essence, the graph tells a story of a once-overlooked area of study that has evolved into a force of nature in the scientific community, spurred by increased global awareness, collaboration, and the urgency of addressing complex challenges like sustainability and food security. It’s the journey of an idea growing into a wave of innovation.

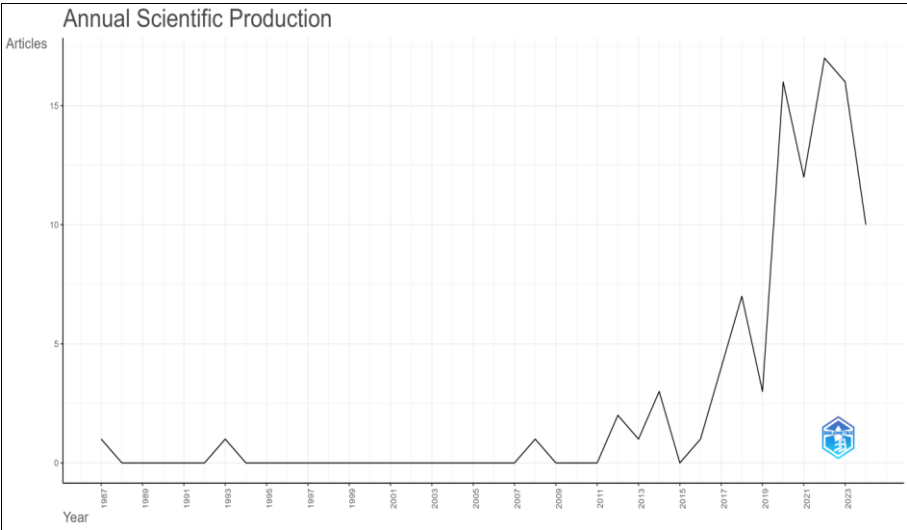


Fig 3: Annual scientific production

3.3 Most Relevant Words

The given figure showcases the most relevant keywords associated with this research. The term “Employment” is the most prominent, with 31 occurrences, reflecting the crucial role of agripreneurship in generating job opportunities for the youth. Employment is often a key motivator for youth involvement in agripreneurship, as the agriculture sector can provide sustainable livelihoods for young entrepreneurs. This makes employment a central theme in understanding how agripreneurship empowers youth. Following closely is “Young Population”, with 19 occurrences. This highlights the focus on youth as the primary demographic being empowered through agripreneurship. By concentrating on this group, the research emphasizes the potential of young people to drive agricultural innovation and sustainability, creating a new generation of agripreneurs. “Agriculture” and “Livelihood” are also significant, with 15 and 13 occurrences, respectively. These terms underscore the centrality of agriculture in providing a sustainable source of income and employment. Agripreneurship is not just about cultivating crops, it’s about creating long-term livelihoods that can uplift rural communities and reduce youth unemployment. The keywords “Agricultural Development” and “Rural

Development” both appear seven times, indicating the broader impact of agripreneurship on community growth and development. The research reflects how empowering youth through agripreneurship contributes to the development of rural areas, where agriculture is often the backbone of the economy. These keywords point to the transformative potential of agripreneurship in revitalizing rural regions. Other notable terms include “Adolescent”, “Agro-industry”, “Education”, and “Female”, each occurring six times. These keywords suggest important subtopics within the research, such as the inclusion of adolescents in agricultural entrepreneurship, the role of education in empowering youth, and the involvement of women in agripreneurial activities. Together, these terms emphasize the need for inclusivity, innovation, and capacity-building in fostering youth agripreneurship. In summary, the graph highlights the intersection of employment, agriculture, and rural development as key areas in empowering youth through agripreneurship. It also emphasizes the importance of engaging the young population and creating sustainable livelihood opportunities to foster growth and development in the agricultural sector.

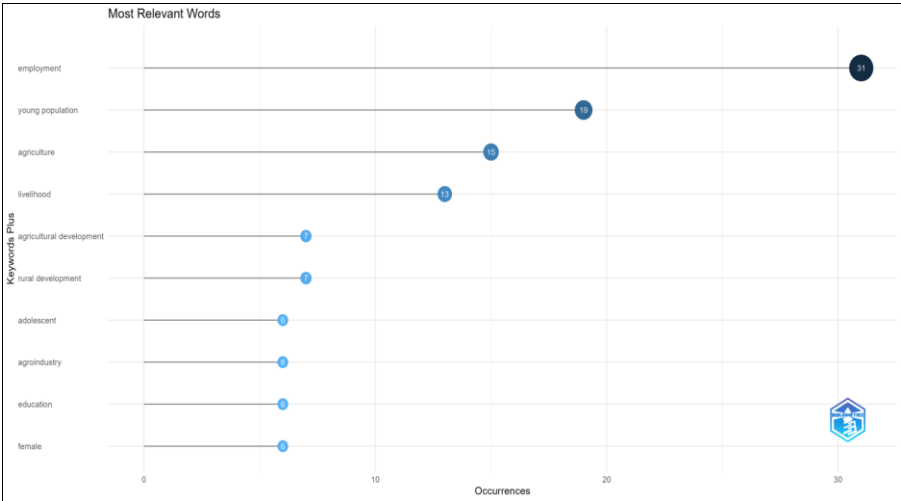


Fig 4: Most relevant words

3.4 Most global cited documents

The given graph illustrates the most globally cited documents that are highly relevant to the research. These influential papers contribute significantly to discussions on youth involvement in agriculture, rural livelihoods, and agripreneurial activities. Each document is ranked by the number of global citations it has received, showcasing its academic impact.

As the top of the list is White B. (2012) ^[27], IDS Bulletin, which has amassed 248 citations, making it the most globally influential document in the field. This paper likely discusses broader rural development issues, emphasizing the importance of youth engagement in agricultural activities, aligning closely with your research interests in agripreneurship.

Following closely is Bezu S. (2014) ^[3], World Development, with 230 citations. This document likely explores global development issues, with a particular focus on the role of agriculture in poverty alleviation and youth employment. It may delve into how agripreneurial initiatives can help address these issues, which would be highly relevant to your topic.

With 76 citations, Bilsborrow R.E. (1987), Demography ranks third. This document may provide insight into key demographic trends, such as population growth population growth and migration, which affect rural areas and agricultural practices. It likely touches on the role of young people in maintaining agricultural productivity, making it valuable for understanding the demographic context of your research.

Bisht I.S. (2020), Sustainability, with 71 citations, contributes to discussion on sustainability within agricultural systems. This paper is likely focused on how youth-led agripreneurial solutions can promote sustainable agriculture, ensuring both environmental and economic stability, which aligns with your research on empowering youth in agribusiness.

Next is Kosec K. (2018) ^[9], American Journal of Agricultural Economics, which has 59 citations. This document likely explores the economic aspects of agriculture, potentially examining how youth-driven

agripreneurship can contribute to the financial viability of rural communities. It may provide insights into the economic challenges and opportunities faced by young agripreneurs.

Sumberg J.(2017) ^[24], Food Security, with 57 citations, likely addresses the role of agripreneurship in ensuring food security. It may highlight how empowering youth in agriculture can contribute to sustainable food systems, a critical issue in both developing and developed countries.

Davila F. (2021), Agricultural Systems, which has 50 citations, probably explores the role of agricultural innovation system and how youth can drive modernization in agricultural practices. This paper is likely relevant to the research, as it may discuss the potential for young people to lead innovation in agripreneurial ventures.

With 48 citations, Liu Y. (2020), Food Policy focuses on the policy aspects of agriculture. This document may investigate how government policies can support youth in agripreneurship, providing a framework for creating a conducive environment for young entrepreneurs in the agricultural sector

Yeboah T. (2020) ^[28], Journal of Rural Studies, with 40 citations, is likely centered around rural studies, particularly the challenges and opportunities for youth in rural areas. This document may explore the intersection of rural development and youth entrepreneurship, highlighting the importance of empowering young people in agribusiness.

Finally, Simoes F. (2020), Journal of Rural Studies, with 36 citations, is likely examines the role of youth in rural entrepreneurship, focusing on the challenges they face in starting and sustaining agripreneurial ventures. This paper may provide valuable insights into the barriers to entry for young agripreneurs, making it highly relevant to the research.

These globally cited documents represent key contributions to the fields of agricultural development, rural livelihoods, youth entrepreneurship, and sustainability. Their relevance to your research on empowering youth to thrive in agripreneurship is clear, as they address critical issues such as rural development, economic viability, policy frameworks, and sustainability within agriculture.

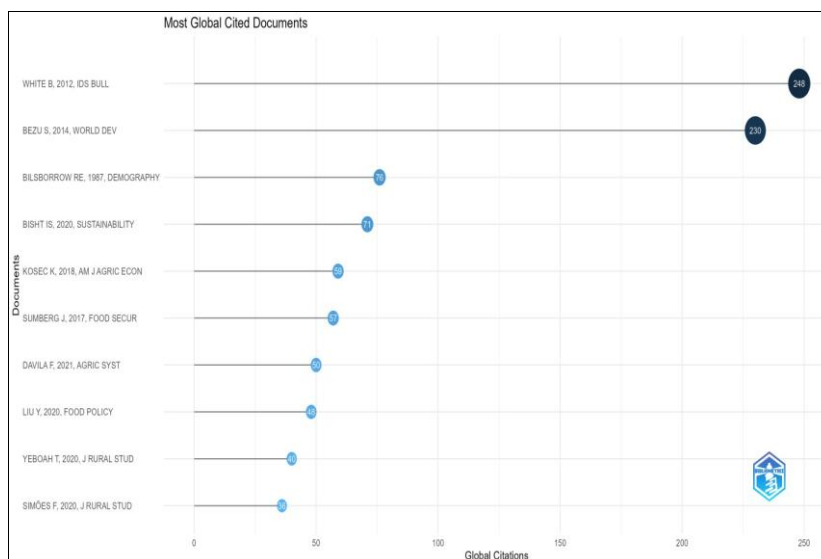


Fig 5: Most global cited documents

3.5. Most relevant authors

The figure highlights the most relevant authors who have made significant contributions to research in fields likely related to agriculture, agripreneurship, and youth empowerment. Each author’s work contributes to various aspects of agripreneurship, such as capacity building, market access, policy, and technological innovations, which are crucial for empowering youth in agricultural sector. Manyong V stands out as the most influential author, with 6 documents to his credit with fractionalized score 1.00, which suggests that this author has contributed significantly to multiple papers and possibly collaborated on various research topics within the field. Following by Abdoulaye T and Bamba Z, with 5 documents each and Fractional Score of 0.76 and 0.71, respectively, are also key contributors in this area. Sumberg J, with 4 publications and 0.74 fractionale score, likely explores the role of education and capacity building in empowering youth in agripreneurship. Several other authors, including Awotide BA, Flynn J, Yami

M, and Yeboah T, each with 3 documents and 0.45, 0.49, 0.43 and 0.89 fractional scores respectively, are likely contributing to different dimensions of agripreneurship. Finally authors like Ali A and Anyidoho NA with 2 documents and fractional scores of 0.45 and 0.39 respectively. The data highlights that authors with higher fractionalized scores likely played more diverse or integral roles in several papers, indicating a higher level of collaboration or multi-disciplinary contributions. Authors with lower fractionalized scores may have had more focused contributions, either as single authors or within a smaller scope of collaboration. In conclusion, their work collectively addresses the key factors that enable young people to engage in agriculture, from providing education and skills development to improving access to markets, technology, and policy support. By studying these authors’ work, you can gain a deeper understanding of the strategies and interventions necessary to empower the next generation of agripreneurs

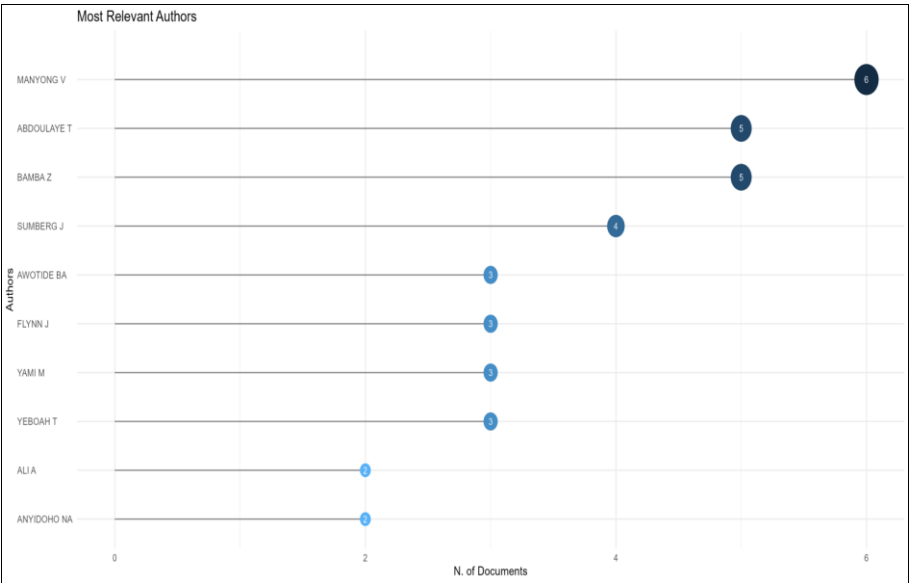


Fig 6: Most relevant authors

3.6 Country scientific production

The graphs showcases the frequency of scientific production by country, likely related to research on empowering youth to thrive in agripreneurship. It includes how many relevant publications or research outputs have been produced by each country, shedding light on where the most academic or scientific attention is being paid to this important topic. India leads the chart with the highest frequency, producing around 40 documents. This suggests that India is a major contributor to the research on youth empowerment in agripreneurship, which could be linked to the country’s focus on youth in agriculture, rural development initiatives, and promoting entrepreneurship as a pathway for economic growth. Given India’s large youth population and agrarian economy, the high frequency of research aligns with the nation’s strategic focus on fostering innovation and entrepreneurship in agriculture. Nigeria follows closely with a significant number of contributions. As one of the largest economies in Africa with a substantial youth population and reliance on

agriculture, this high scientific production likely reflects efforts to empower youth through agripreneurship, given the country’s need for job creation and sustainable agricultural development. The USA and South Africa also show strong contributions, reflecting their involvement in global agricultural innovation, youth entrepreneurship programs, and support for agribusiness development. South Africa’s position might specifically highlight its role in supporting youth entrepreneurship within the agricultural sector across Sub-Saharan Africa. Countries like the UK, Indonesia, Australia, Kenya, Tanzania, and Ethiopia have a moderate number of contributions. This could suggest an emerging interest in youth-focused agripreneurship, possibly driven by policy initiatives aimed at addressing unemployment and economic empowerment through agriculture. Overall, the graph highlights the global engagement in research on empowering youth to thrive in agripreneurship, with notable contributions from both developing and

developed countries. These nations are likely leading or participating in programs, policies or scientific inquiries to

enhance the role of youth in agriculture, fostering innovation and sustainability in agripreneurship

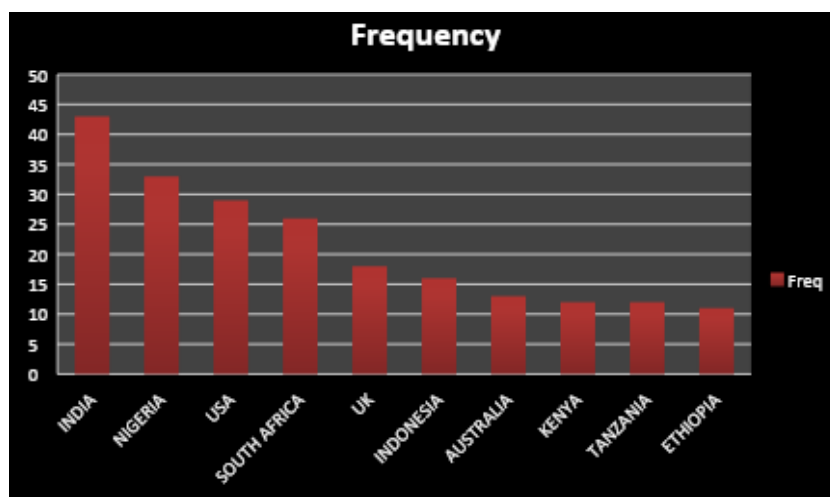


Fig 7: Country scientific production

3.7 Thematic map

The thematic map offers a comprehensive view of the research landscape by categorizing topics based on their level of development (density) and relevance (centrality). Divided into four quadrants: Motor Themes, Basic Themes, Niche Themes, and Emerging or Declining Themes (Figure 8). The map provides a clear depiction of the interconnectedness and maturity of various research areas.

1. Motor Themes (Top Right Quadrant): These themes are highly developed and central, indicating their importance and strong connection with other themes in the field. In this quadrant the most prominent themes are:

- **Agriculture, Rural Population and Female:** These themes highlight the focus on agricultural activities in rural areas, specifically involving women. It shows that the intersection of gender, agriculture, and rural livelihoods is a well-developed and highly relevant topic, likely linked to empowering youth towards agripreneurship by promoting rural women's involvement.
- **Employment, Young Population and livelihood:** These themes indicate that empowering youth through employment opportunities and improving livelihoods is a critical and highly relevant aspect. This highlights the role of agripreneurship in addressing youth unemployment and livelihood security, making it a motor theme for the topic.

2. Basic Themes (Bottom-Right Quadrant): These themes are important but not very developed. They are fundamental and need further research.

- Nigeria, India and Ghana appear here, indicating that while these countries are central to discussions on agripreneurship and youth empowerment, the research surrounding them may require further development to explore their full potential.
- Rural development, rural economy, and farming system are also present. This implies that while rural

development and the rural economy are central to the broader topic of youth empowerment in agriculture, the exploration of farming systems in relation to youth agripreneurship is fundamental but requires further attention.

3. Niche Themes (Top-Left Quadrant): These themes are well-developed but less central, meaning they are specialized and may not connect strongly to the broader research.

- **Food Security, Climate Change, and Timor-laste** are the key niche themes. These topics are well researched and developed but not as directly related to the central discussions of youth agripreneurship. They may represent specialized topics, such as the impact of Climate Change on food security and its relationship with agricultural practices in specific regions like Timor-Laste.

4. Emerging or Declining Themes (Bottom-Left Quadrant): These themes are both underdeveloped and less relevant, either because they are emerging areas of study or because they are declining in importance.

- **Small and medium-sized enterprise (SME)** appears in this quadrant, suggesting that while SMEs play a role in agripreneurship, their connection to youth empowerment in agriculture may either be an emerging area or a declining focus in current research. More exploration is required to determine its future trajectory.

In summary, the map indicates that employment, youth, and livelihood issues, along with agriculture and the rural population (especially females), are critical areas of focus (motor themes) for empowering youth in agripreneurship. At the same time, rural development, farming systems and the involvement of countries like Nigeria, India, and Ghana are foundational but underdeveloped areas needing further research. Specialized themes like climate change and food security are important but not directly central, while SMEs are either emerging or declining as a focus in the field.

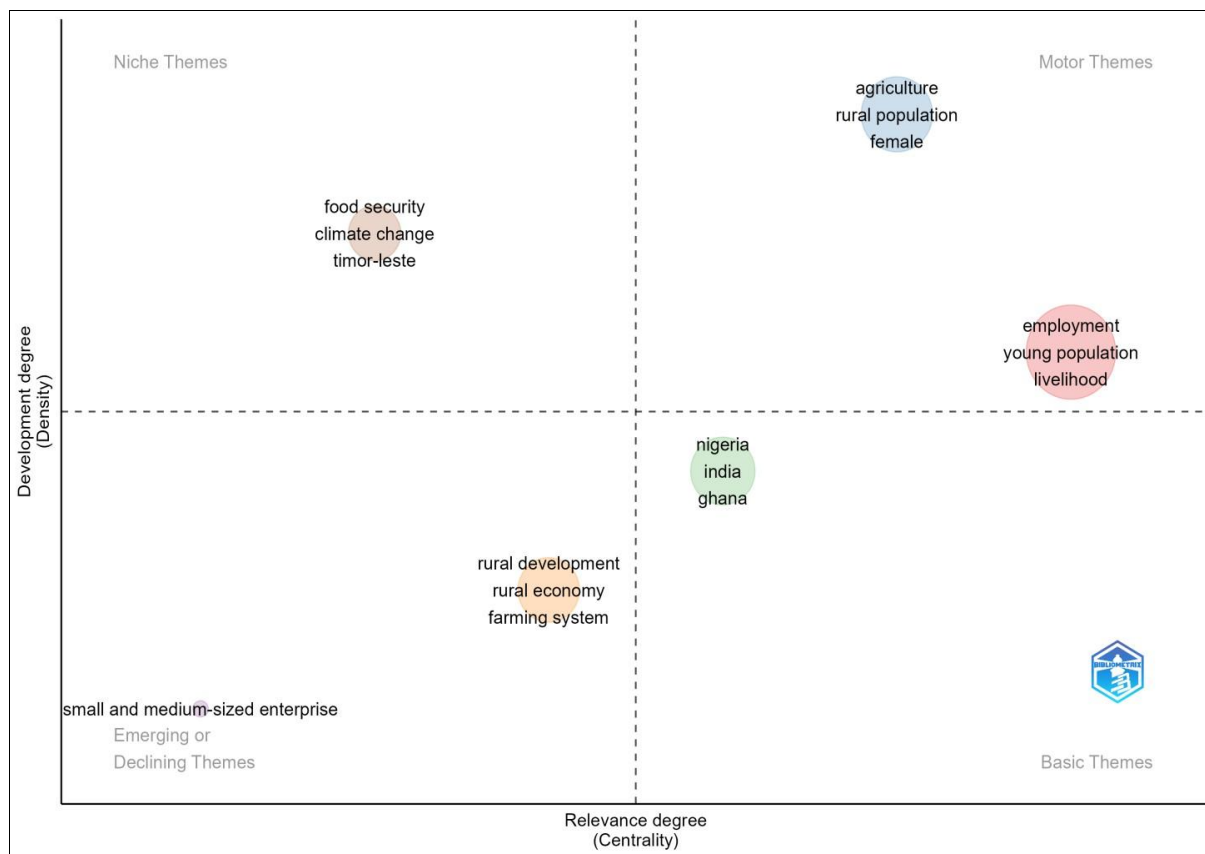


Fig 8: Thematic map

3.8 Co-occurrences of keyword

3.8.1 Word clouding

The word clouding provides a clearer understanding of the subject based on the available articles. Fig. 9 offers insight into the development of articles on this topic. The size of the keywords indicates their frequency in the curated documents analyzed. The largest and most prominent terms, such as Youth, Agripreneurship, and Agriculture, highlight the central focus of the topic, which is the pivotal role of young people in transforming and advancing the agricultural sector through entrepreneurship. The word Youth stands out significantly, indicating that this demographic is the main driving force for change and innovation within agribusiness. It emphasizes the importance of engaging young minds in the agripreneurial ecosystem to harness their potential and creativity for positive transformation in agriculture.

Another key focus is on terms like Empowerment, Employment, Opportunities, and Motivation, which suggest that agripreneurship is more than just a business venture for youth. These words collectively underline the idea that empowering young people to pursue careers in agriculture not only leads to self-employment and job creation but also promotes social and economic growth. Youth Empowerment through agripreneurship creates opportunities for financial independence, better livelihoods, increased community involvement, especially in rural areas. In this context, Opportunities and Motivation highlights the need for support systems that encourage and inspire young individuals to tap into agribusiness ventures.

Moreover, the word cloud incorporates crucial terms like Innovation, Entrepreneurship and Agribusiness, showing the

close connection between fostering new ideas and creating business ventures in the agricultural domain. These words signify that success in agripreneurship requires innovative thinking, creativity, and the ability to adapt to changing market and environmental conditions. By focusing on Innovation, youth can develop sustainable agricultural practices and contribute to solving global challenges like food security and climate change.

Furthermore, terms such as Policies, Agricultural Development, and Agricultural policies suggests that government interventions and policy support play a crucial role in ceating an enabling environment for young agripreneurs to thrive. The inclusion of these terms points to the importance of policy frameworks, capacity-building programs, and financial incentives that can help young individuals overcome challenges in agribusiness. Government initiatives can help provide necessary infrastructure, access to markets, and knowledge resources that young people need to succeed in the agripreneurship space.

In conclusion, the word cloud encapsulates the idea that empowering youth in agripreneurship is a multifaceted approach. It requires motivation, innovation, support through policies, and access to opportunities that enable youth to make meaningful contributions to agriculture. This representation shows how agripreneurship can provide pathways for employment, leadership, collaboration, market access, and ultimately sustainable development in rural areas, contributing to the overall growth of the agricultural sector.

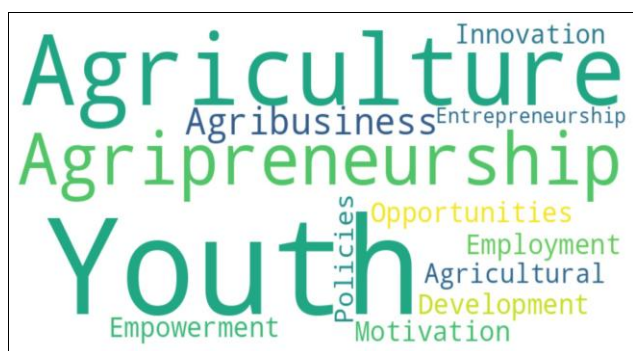


Fig 9: Word clouding

4. Conclusion

This comprehensive bibliometric review highlights the critical role of youth in agripreneurship as a transformative force capable of addressing key global challenges such as Youth unemployment, agricultural stagnation, and rural economic decline. As agriculture continues to evolve in response to pressure from urbanization, climate change, and technological advancements, the integration of young people into agripreneurial activities emerges as a sustainable solution for modernizing the agricultural sector. By combining entrepreneurship with agriculture, agripreneurship creates opportunities for youth to engage in business-oriented agricultural ventures that not only foster innovation but also enhance the sustainability and profitability of agricultural practices.

The research shows a growing body of work focused on the intersection of youth, agriculture, and entrepreneurship, indicating the increasing recognition of agripreneurship as a key strategy for rural development and economic empowerment. The global and national initiatives reviewed, illustrates the commitment to fostering youth-led agricultural ventures through support mechanisms such as training, access to credit, and market linkages. These programs have demonstrated success in helping young agripreneurs overcome challenges such as financial constraints and lack of technical knowledge.

However, the review also reveals persistent barriers that continue to limit the full potential of youth in agripreneurship. Despite the positive trends in research and program development, young agripreneurs still face significant challenges, including limited access to land, capital, and infrastructure, which are critical for scaling agribusiness ventures. Additionally, gender disparities remain a significant hurdle, particularly for young women in agriculture, who often face unequal access to resources and markets. The lack of comprehensive policy frameworks to support youth in agripreneurship further exacerbates these challenges, underscoring the need for more robust and inclusive policy interventions.

The integration of technology into agriculture, such as precision farming, digital platforms, and agri-tech innovations, has been identified as a key enabler of youth agripreneurship. These technological advancements allow young agripreneurs to increase efficiency, reduce costs, and expand their market reach, making agriculture a more attractive and viable career path for youth. However, the

review highlights the need for greater efforts to ensure that young people have the skills and resources necessary to adopt and utilize these technologies effectively.

In the light of these findings, the review concludes that empowering youth in agripreneurship requires a multi-faceted approach that addresses the structural barriers hindering their participation in the agricultural sector. This includes expanding access to financial resources, providing targeted training and mentorship programs, and creating supportive policy environments that promote youth entrepreneurship in agriculture. Moreover, a focus on gender equality is essential to ensure that young women have the same opportunities as their male counterparts in agripreneurial ventures.

The future of agriculture depends heavily on the ability to engage and empower young people as the next generation of agripreneurs. By creating an enabling ecosystem that fosters innovation, supports access to resources, and addresses the specific needs of youth, agripreneurship can contribute to both rural and global development goals. This review underscores the importance of continued research, policy development, and collaboration among governments, academic institutions, and private-sector actors to build a sustainable future where youth thrive as leaders in agripreneurship.

Future Directions

Moving forward, several areas require further research and development to fully realize the potential of youth agripreneurship. First, there is a need for more detailed studies on the specific barriers that young women face in agripreneurship, with a focus on creating gender-sensitive interventions that provide equal opportunities for all youth. Additionally, more research is needed to explore the role of digital technology in empowering youth, particularly in terms of access to information, market integration, and improving agricultural productivity through innovative tools.

Future policies should focus on creating a more inclusive and supportive environment for youth agripreneurs by addressing issues such as access to land, finance, and infrastructure. Developing partnerships between the public and private sectors, as well as fostering international collaborations, will be essential in providing sectors, as well as fostering international collaborations, will be essential in providing young agripreneurs with the necessary resources to grow their businesses. Furthermore, research should also focus on the scalability of youth agribusiness ventures to ensure that small-scale innovations can be expanded to create larger impacts on national and global agricultural systems.

In conclusion, the future of youth agripreneurship holds significant promise, but realizing this potential will require concerted efforts from all the stakeholders. By addressing the existing challenges and building on the successes of current programs and initiatives, we can empower a new generation of agripreneurs to drive sustainable agricultural development and contribute to the achievement of global goals such as food security, Unemployment, poverty reduction, and climate resilience.

References

1. Ali S, Khan GA, Iftikhar M, Munir H. Challenges faced by the youth regarding participation in family farming in Punjab, Pakistan. *International Journal of Agricultural Extension*. 2021;9(1).
2. Anyidoho NA, Leavy J, Asenso-Okyere K. Perceptions and aspirations: a case study of young people in Ghana's cocoa sector. *IDS Bulletin*. 2012;43(6).
3. Bezu S, Holden S. Are rural youth in Ethiopia abandoning agriculture? *World Development*. 2014;64.
4. Chandre Gowda MJ, Rana RK, Pal PP, Dubey SK, Kumar A, Meena MS, *et al.* Economic performance of enterprises promoted under ARYA and relationship with entrepreneurial competencies. *Indian Journal of Extension Education*. 2023;59(2).
5. Daudu AK, Abdoulaye T, Bamba Z, Shuaib SB, Awotide BA. Does youth participation in the farming program impact farm productivity and household welfare? Evidence from Nigeria. *Heliyon*. 2023;9(4).
6. Ephrem AN, Nguetzet PMD, Murimbika M, Bamba Z, Manyong V. Perceived social norms and agripreneurial intention among youths in eastern DRC. *Sustainability (Switzerland)*. 2021;13(6).
7. Fasakin IJ, Ogunniyi AI, Bello LO, Mignouna D, Adeoti R, Bamba Z, *et al.* Impact of intensive youth participation in agriculture on rural households' revenue: evidence from rice farming households in Nigeria. *Agriculture (Switzerland)*. 2022;12(5).
8. Huijsmans R, Ambarwati A, Chazali C, Vijayabaskar M. Farming, gender and aspirations across young people's life course: attempting to keep things open while becoming a farmer. *European Journal of Development Research*. 2021;33(1).
9. Kosec K, Ghebri H, Holtemeyer B, Mueller V, Schmidt E. The effect of land access on youth employment and migration decisions: evidence from rural Ethiopia. *American Journal of Agricultural Economics*. 2018;100(3).
10. Ma'ga WHE, Porgo M, Zahonogo P, Amegnaglo CJ, Coulibaly DA, Flynn J, *et al.* A systematic review of employment outcomes from youth skills training programmes in agriculture in low- and middle-income countries. *Nature Food*. 2020;1(10).
11. Magbond KG, Mignouna D, Manyong V, Adoti R, Sossou AO. Impact of informal institutions on youth agribusiness participation in Southern Benin. *Agricultural and Food Economics*. 2023;11(1).
12. Mkandawire D, Gbegbelegbe S, Nsenga JV, Yami M, Kenamu E. Analysing urban and peri-urban youth employment in agribusiness in Malawi. 2023;18(9).
13. Mkong CJ, Abdoulaye T, Donsop-Nguetzet PM, Bamba Z, Manyong V, Shu G. Determinants of university students' choices and preferences of agricultural sub-sector engagement in Cameroon. *Sustainability (Switzerland)*. 2021;13(12).
14. Mujinovi A, Nikoli A, Tuna E, Stamenkovska IJ, Radović V, Flynn P, *et al.* Is it possible to tackle youth needs with agricultural and rural development policies? *Sustainability (Switzerland)*. 2021;13(15).
15. Mulema J, Mugambi I, Kansime M, Chan HT, Chimalizeni M, Pham TX, *et al.* Barriers and opportunities for youth engagement in agribusiness: empirical evidence from Zambia and Vietnam. *Development in Practice*. 2021;31(5).
16. Ngatigwa AA, Hepelwa A, Yami M, Manyong V. Assessment of factors influencing youth involvement in horticulture agribusiness in Tanzania: a case study of Njombe region. *Agriculture (Switzerland)*. 2020;10(7).
17. Ogunmodede AM, Ogunsanwo MO, Manyong V. Unlocking the potential of agribusiness in Africa through youth participation: an impact evaluation of N-Power Agro Empowerment Program in Nigeria. *Sustainability (Switzerland)*. 2020;12(14).
18. Osabohien R, Wiredu AN, Nguetzet PMD, Mignouna DB, Abdoulaye T, Manyong V, *et al.* Youth participation in agriculture and poverty reduction in Nigeria. *Sustainability (Switzerland)*. 2021;13(14).
19. Petesch P, Badstue L, Rahut DB, Ali A. Not raised to make big decisions: young people's agency and livelihoods in rural Pakistan. *Forum for Development Studies*. 2022;49(2).
20. Rietveld AM, van der Burg M, Groot JCJ. Bridging youth and gender studies to analyse rural young women and men's livelihood pathways in Central Uganda. *Journal of Rural Studies*. 2020;75.
21. Ripoll S, Andersson J, Badstue L, Büttner M, Chamberlin J, Erenstein O, *et al.* Rural transformation, cereals and youth in Africa: what role for international agricultural research? *Outlook on Agriculture*. 2017;46(3).
22. Sher A, Adil SA, Mushtaq K, Ali A, Hussain M. An investigation of entrepreneurial intentions of agricultural students. *Pakistan Journal of Agricultural Sciences*. 2017;54(4).
23. Simbeko G, Nguetzet PMD, Sekabira H, Yami M, Masirika SA, Bheenick K, *et al.* Entrepreneurial potential and agribusiness desirability among youths in South Kivu, Democratic Republic of the Congo. *Sustainability (Switzerland)*. 2023;15(1).
24. Sumberg J, Yeboah T, Flynn J, Anyidoho NA. Young people's perspectives on farming in Ghana: a Q study. *Food Security*. 2017;9(1).
25. Thephavanh M, Philp JNM, Nuberg I, Denton M, Alexander K. Narrative insights reveal the motivations of young agricultural entrepreneurs in Laos. *Sustainability (Switzerland)*. 2022;14(20).
26. Thephavanh M, Philp JNM, Nuberg I, Denton M, Larson S. Perceptions of the institutional and support environment amongst young agricultural entrepreneurs in Laos. *Sustainability (Switzerland)*. 2023;15(5).
27. White B. Agriculture and the generation problem: rural youth, employment and the future of farming. *IDS Bulletin*. 2012;43(6).
28. Yeboah T, Chigumira E, John I, Anyidoho NA, Manyong V, Flynn J, *et al.* Hard work and hazard: young people and agricultural commercialisation in Africa. *Journal of Rural Studies*. 2020;76:142-151.