

## **Agripreneurial skills among farmers: A bibliometric analysis**

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### **Introduction**

Agri-preneurship is a form of entrepreneurship that derives inputs from agriculture and allied sectors. In short, it means an entrepreneurial venture taken up in the field of agriculture and allied activities. The agri-preneurship activity can be undertaken as an extension to the agriculture activity or can be set on as a new profession. The major aim of undertaking agri-preneurship activities involves improvement in agricultural productivity as well as income and wealth creation. An entrepreneur whose main business is agriculture or related to agriculture is referred to as an agripreneur. In other words, the entrepreneur who runs agripreneurial ventures is termed an agripreneur.

Agri-preneurship has too many benefits as it contributes to the economy in multi-dimensions. It creates numerous job opportunities for the community, ensures food security, enables optimum utilization of resources, raises the standard of living of people, etc. agri-preneurship paves way for several business projects ranging from marketing agricultural produce in varied forms, food processing, value-added products, dealing with agricultural implements and so on.

A transformation from farmer to agripreneur is essential to boost agripreneurial activities and at the same time, it is the need of the hour for the agriculture sector. There should be a change in the mindset of the farmers to adapt to the role of an agripreneur; because agripreneurship is not all about increasing the production. Farmers should equip themselves

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to identify the opportunities in this field and seize them, trace the clients and deliver them the values of superior quality. Therefore, the farmers should possess certain agripreneurial skills for carrying out agripreneurial activities and to fetch prosperity in this regard.

The present study deals with the bibliometric analysis of agripreneurial skills literature to unveil the trend of research in this area and to present the knowledge base of agripreneurial skills among farmers.

## **Literature Review**

Agri-preneurship is a discipline that is being explored more in recent times. Several pieces of research have been carried on in this area for the relevance it has in the economy. Agri-preneurship is the major means of creating employment opportunities and thereby leads to the overall economic development of the country. The employment opportunities created by the agripreneurial ventures take the form of self-employment and employment for the community as well. The agri-preneurship offers several untapped avenues, but a lack of investment hinders the growth of this sector (Jimoh & Ogunsanwo, 2018). The factors contributing to the success of the agri-ventures mainly comprise the skills possessed by the agripreneurs such as marketing skills, psychological skills, behavioral skills, technical skills, communication competency, and cognitive skills (Elakkiya and Asokhan, 2021).

The farm and non-farm-related activities undertaken by the farmers ignite a positive attitude among them towards agripreneurial ventures (Vik and Mcelwee, 2011). Besides the agripreneurial skills possessed by the farmers contribute to the farmer's performance in a positive way (Lanka and Lanka, 2014). In developing the entrepreneurial intent among farmers, their orientation and competencies in terms of entrepreneurship play a significant part (Ibrahim and Lucky, 2014).

Identifying and seizing the opportunities, developing and implementing business strategies, and building and strengthening networks and contacts are major entrepreneurial skills possessed by the farmers (Morgan et al., 2010). Whereas, Rezai, Mohamed, and Shamsudin (2011) state that innovative, risk-taking, profit-oriented, visionary, managerial skills and self-confidence are the major entrepreneurial skills required by the farmers and these skills can be improved through imparting proper training to the farmers. Thus, the farmers require more entrepreneurial training than managerial skills (Jones, 2015). Bolarinwa

and Okolocha (2016) state that, farmers should try to excel in carrying out their farm operations by possessing and updating the right skills. But, farmers do not engage in the practice of updating their skills (McElwee, 2006). Entrepreneurial training has to be imparted to the agripreneurs to build their capacity concerning need for achievement, leadership capability, self-confidence, ability to take risk, management orientation, and anxiety to gather information (Ahmed, Hasan, & Haneef, 2011).

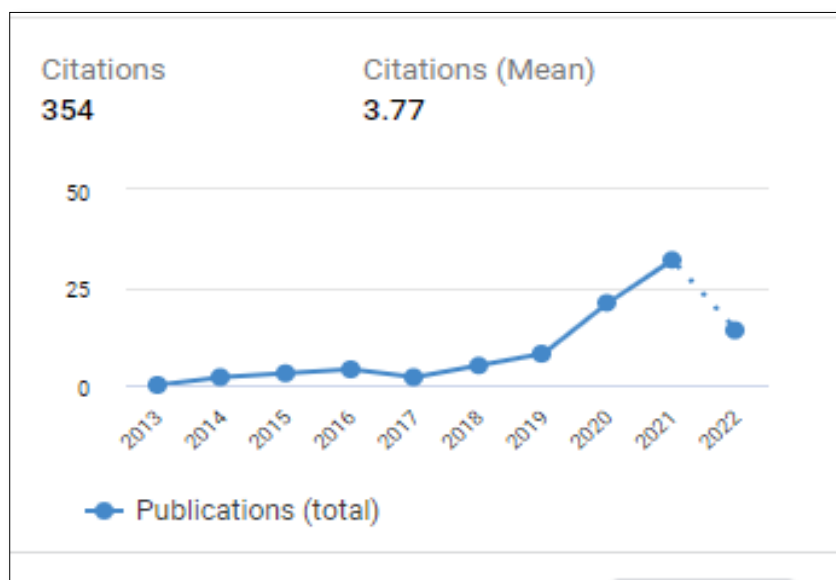
Balasarayanan and Vijayadurai (2012) carried out a study in the Regulated Markets in Thanjavur district focused on examining entrepreneurial characteristics among the farmers and understanding the level of entrepreneurial behavior among the farmers. It was found that innovation is low among the small and marginal farmers. And on the other hand, the level of leadership ability and ability to assume risk is also found low and requires the improvement in the entrepreneurial behavior, particularly among the marginal farmers.

## **Methodology**

A bibliometric analysis approach to agripreneurial skills has been adopted to meet the objective of the study. The citation analysis, co-citation analysis, bibliographic coupling network analysis, and term co-occurrence analysis are performed with the bibliographic data to assess the trend of research in the area of agripreneurial skills as well as to capture the knowledge base in this area.

### **1. Data Extraction**

The bibliographic data on agripreneurial skills for the study was retrieved from the Dimensions database by employing the keyword **Agripreneurship skills**. Since the database contained only a few works on this topic, the search was not limited to any publication year. However, the initial search fetched 254 full data documents. To meet the purpose of the paper the search was limited to article publication type and it generated 94 articles that were sorted based on the citations. The bibliographic data on the 94 articles were extracted from the Dimensions database. The publication matrix of the documents on agripreneurial skills based on the search in the Dimensions database is given in figure 1.

**Figure 1.** Publication Matrix

Source: Dimensions Database

## 2. Data Analysis

The data extracted from the Dimensions database are analyzed through VosViewer software to gather the research trend and knowledge base on agripreneurial skills. In addition to this, the data from Scopus Preview is also employed to have an advanced understanding of the concerned literature. Citation Analysis, Co-citation Analysis, Bibliographic Coupling Network Analysis, and Term Co-occurrence Analysis are performed through VosViewer to obtain the study results.

### Analysis and Discussions

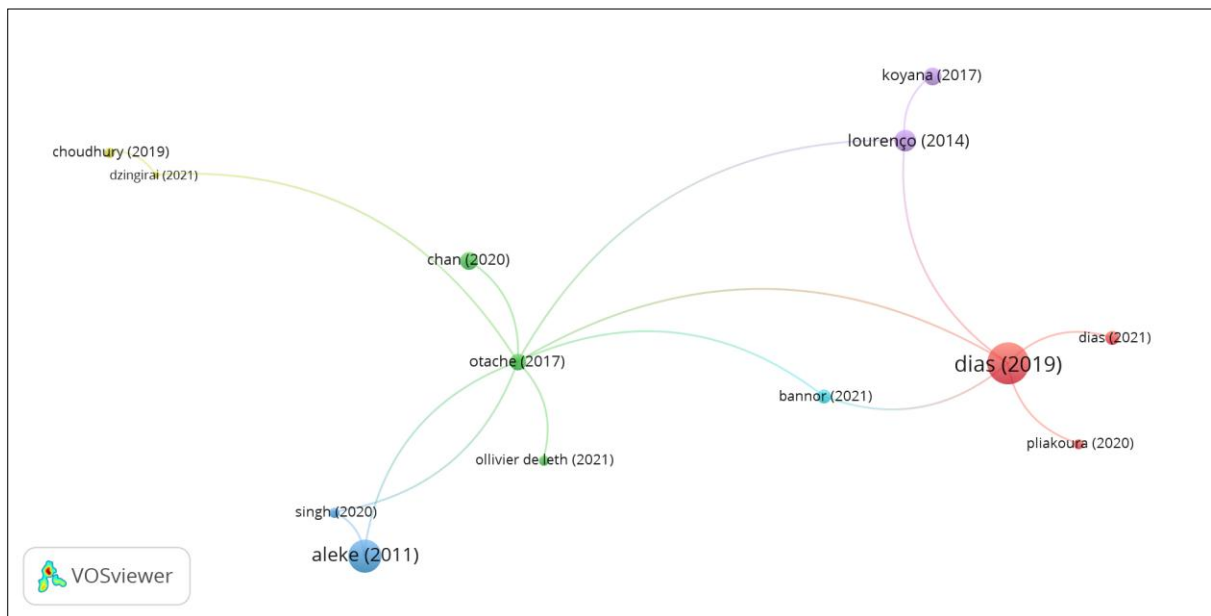
#### Citation Analysis

It is employed to estimate the relevance and impact of an article, author, institution, etc. based on the number of times the work, author, or the institution is cited by others. Here in the study, citation analysis is performed in two ways. One with documents as the unit of analysis and the other with authors as a source of the unit of analysis.

## 1. Document Citation Analysis

The document citation analysis is performed with the minimum number of citations of the documents limited to 2. It generated 32 documents satisfying the minimum citation criteria. However, of the 32 documents, only 13 items were found to be connected to the network. Hence, it went final analysis.

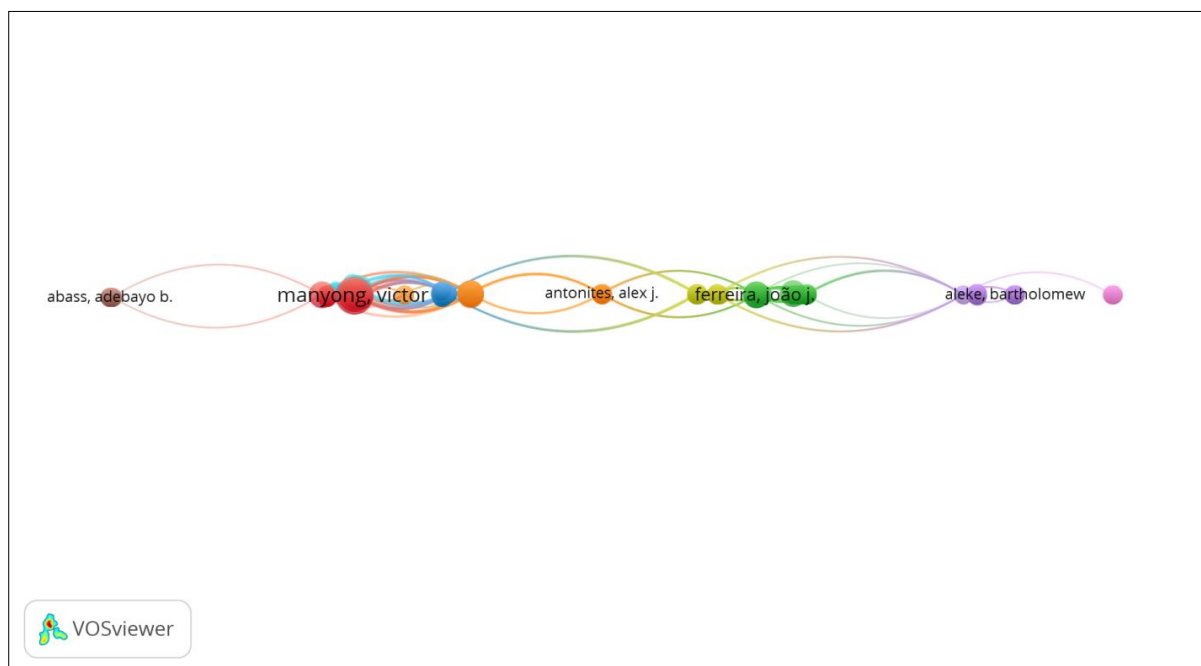
**Figure 2.** Network Visualization of Document Citation Analysis



The document citation analysis of 13 documents reveals that the documents by Dias (2019), Aleka (2011), and Lourenco (2014) are the most relevant ones.

## 2. Author Citation Analysis

Author Citation Analysis is performed to find out the most prominent authors in the area of agripreneurial skills. The minimum number of documents of an author for the Author Citation Analysis is fixed as 1, and it produced 276 authors meeting this criterion. However, the largest set of connected items included only 112 items and hence they were chosen for the final analysis.

**Figure 3.** Network Visualization of Author Citation Analysis**Table 1.** Author Citation Analysis

Authors	Documents	Total Link Strength
1. Manyong, Victor	4	60
2. Ferreira, Joao	2	27
3. Adeyanju, Dolapo	2	22
4. Mburu, John	2	22
5. Kontogeorgos, Achilleas	2	7
<i>Source: VosViewer</i>		

The Author Citation Analysis resulted in 11 clusters covering 112 items. Table 1 depicts the 5 most prominent authors in the area of agripreneurial skills. Manyong, Victor tops the table with 4 documents and 60 total link strengths.

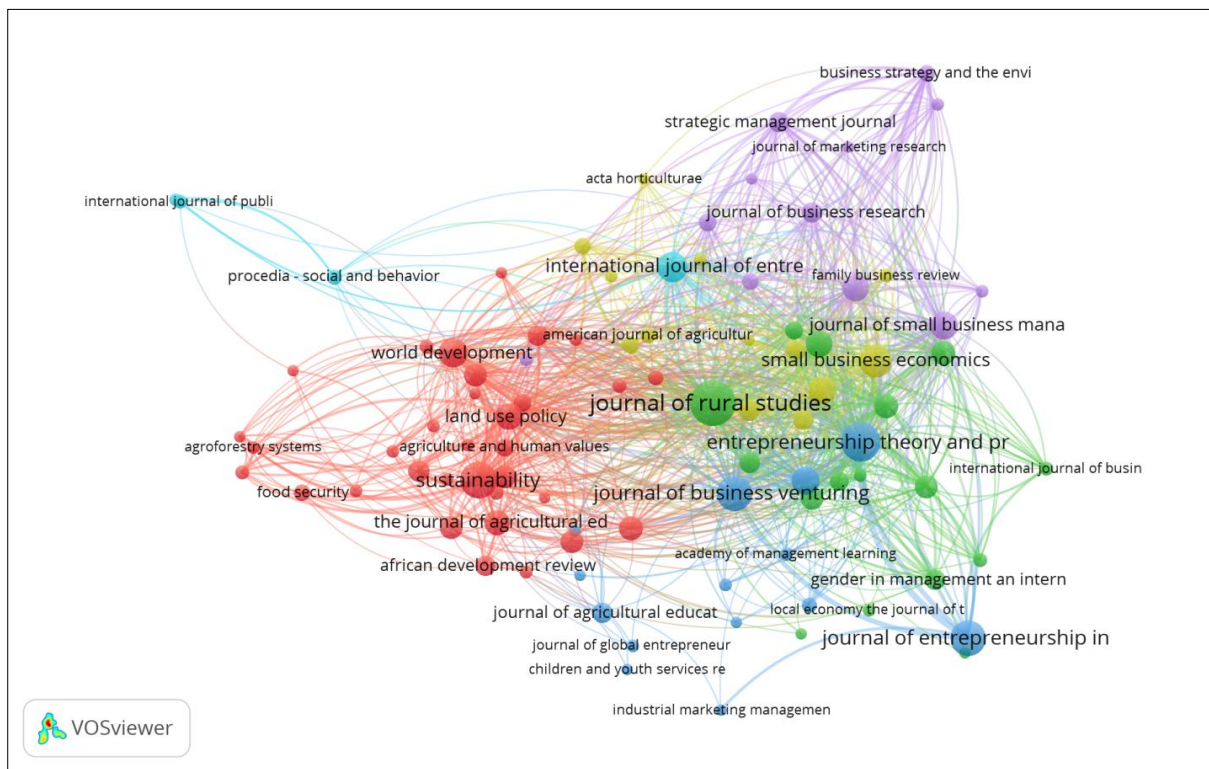
### Co-citation Analysis

Co-citation analysis is used to ascertain the relationship between the articles and sources that which articles or the sources cited other pairs of articles or sources.

### 1. Co-citation Analysis of Cited Sources

Here co-citation analysis is performed with cited sources as the unit of analysis. The minimum number of citations of a source is fixed as 5 and of the 977 sources, 92 sources meet the criteria. Thus, these 92 sources are used for co-citation analysis.

**Figure 4.** Network Visualisation of Co-citation Analysis of Cited Sources



<b>Table 2. Co-citation Analysis of Cited Sources</b>	
<b>Journal</b>	<b>Citation</b>
1. Journal of Rural Studies	79
2. Entrepreneurship Theory and Practice	58
3. Sustainability	50
4. Journal of Entrepreneurship in Emerging Economies	47
5. Journal of Business Venturing	46
<i>Source: VosViewer</i>	

Table 2 deals with the result of the co-citation analysis of cited sources. It shows the top 5 sources based on co-citations. The journal matrix of the sources in detail is given in table 3.

<b>Table 3. Journal Matrix</b>						
<b>Journal</b>	<b>Publisher</b>	<b>TP</b>	<b>TC</b>	<b>Cite Score</b>	<b>SNIP</b>	<b>SJR</b>
1. Journal of Business Venturing	Elsevier	217	3167	14.6	4.534	5.829
2. Entrepreneurship Theory and Practice	Wiley-Blackwell	163	2235	13.7	3.353	3.353
3. Journal of Rural Studies	Elsevier	905	5946	6.6	2.075	1.292
4. Sustainability	Multidisciplinary Digital Publishing Institute (MDPI)	36485	181699	5.0	1.31	0.664
5. Journal of Entrepreneurship in Emerging Economies	Emerald	142	660	4.6	1.491	0.577
TP= Total Publications    TC= Total Citations    SNIP= Source Normalised Impact per Paper SJR= SCImago Journal Rank						
<i>Source: Author's Construct from Scopus Data</i>						

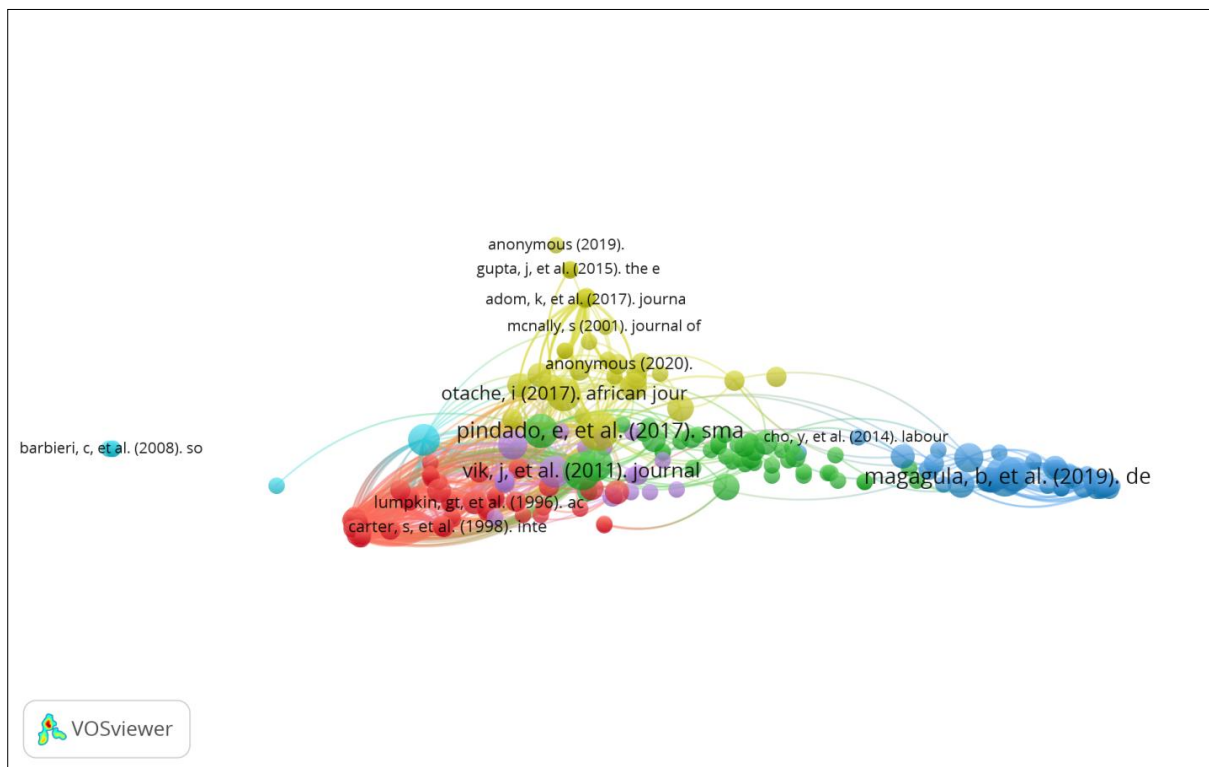
Table 3 shows the journal matrix of the top 5 sources obtained based on bibliometric co-citation analysis. The journal matrix is retrieved from Scopus Preview and the cite score is computed based on the total publications and total citations received by the documents during 2018-21. The SCImago Journal Rank (SJR) and Source Normalised Impact per Paper (SNIP) also pertains to this period. Here Journal of Business Venturing tops the table with a cite score of 14.6 though it comes 5th in the co-citation analysis.

## **2. Co-citation Analysis of Cited References**



The minimum number of citations of a cited reference is fixed as 2. Of the 2293 cited references, 203 references meet the threshold, and thus these are used for the analysis.

**Figure 5.** Network Visualisation of Co-citation Analysis of Cited References



<b>Authors</b>	<b>Source</b>	<b>Citations</b>
1. Pindado et.al., 2017	Small Business Economics	11
2. Magagula et.al., 2019	Development in Practice	11
3. Vik et.al., 2011	Journal of Small Business Management	10
4. Otache, 2017	African Journal of Economic and Management Studies	8
5. Mcelwee, 2006	Journal of Developmental Entrepreneurship	7

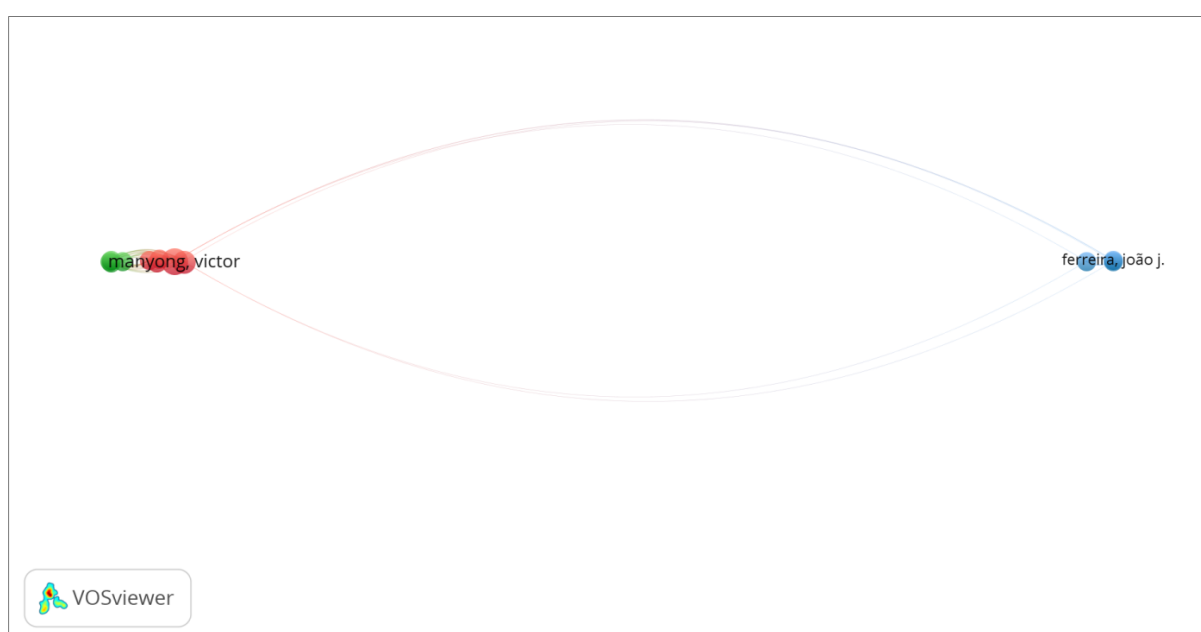
*Source: VosViewer*

The analysis generated 6 clusters covering 207 items. Table 4 exhibits the 5 most cited references based on the co-citation analysis. The work of Pindado et.al., 2017 tops the table with the highest citations.

## Bibliographic Coupling

It is applied to know the similar relationship between documents. Coupling happens when two works or documents reference a common third work in their bibliographies. Thus it is used to ascertain the most coupled document. Here authors are taken as the unit of analysis for the bibliographic coupling network analysis. The minimum number of documents of an author is set as 2. Of the 276 authors, 14 meet the criteria. However, the largest set of connected items was found in 12 items. Hence, they are used for the analysis.

**Figure 6.** Network Visualisation of Bibliographic Coupling Network Analysis



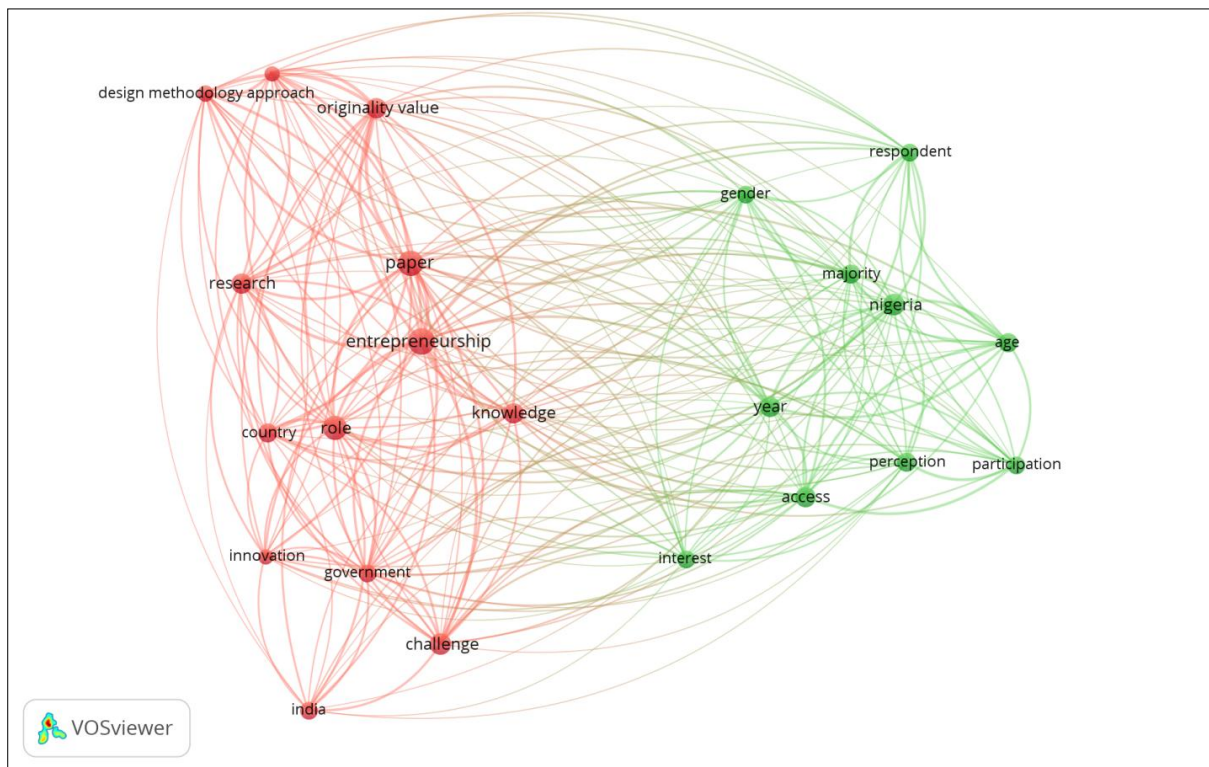
<b>Table 5. Bibliographic Coupling Network Analysis</b>		
<b>Authors</b>	<b>Documents</b>	<b>Citations</b>
1. Manyong, Victor	4	39
2. Bamba, Zoumana	3	30
3. Abdoulaye, Tahirou	2	28
4. Ferreira, Joao	2	77
5. Rodrigues, Ricardo Gouveia	2	77
<i>Source: VosViewer</i>		

Table 5 exhibits the 5 most coupled authors based on bibliographic coupling network analysis. Manyong, Victor is the most coupled author.

## Term Co-occurrence Analysis

It is performed to understand the terms that are highly used in the area of agripreneurial skills. For the analysis title and abstract field of the bibliographic data are retrieved. The minimum number of occurrences of the term is fixed as 10. Of the 2592 terms, 39 terms met the threshold. However, only 23 terms went to the final analysis.

**Figure 7.** Network Visualisation of Term Co-occurrence Analysis



<b>Table 6. Term Co-occurrence</b>	
Terms	Occurrences
1. Entrepreneurship	28
2. Role	23
3. Challenge	19
4. Nigeria	18
5. Knowledge	17

*Source: VosViewer*

Entrepreneurship, role, challenge, Nigeria, and Knowledge are the 5 most commonly and frequently used terms in agripreneurial skills literature.

### Conclusions

The present study attempted to understand the trend in research and knowledge base in the field of agripreneurial skills with the aid of bibliometric analysis. The study made use of

bibliographic data of 94 articles on agripreneurial skills. The analysis such as citation analysis, co-citation analysis, bibliographic coupling network analysis, and term co-occurrence analysis performed with a different unit of analysis helped to meet the study objectives.

The study throughs light on agripreneurial skills literature and acts as a foundation for the researchers who intend to explore this field. A researcher, who starts his career in this field cannot ignore the literature quoted in the study on account of several bibliometric analyses. The study highlighted the most influential authors, impactful works, and dominant sources of agripreneurial skills literature.

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