

Business Skills Among Farmers: A Bibliometric Review

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Abstract

The development of certain business skills among farmers becomes necessary as it brings prosperity as well as ensures the sustainability of the farming community. The present paper is carried out to capture the knowledge base and trends in research in the field of business skills of farmers. The bibliographic data extracted from the Dimensions database are analyzed with VosViewer software by performing citation analysis, co-citation analysis, bibliographic coupling network analysis, and term co-occurrence analysis to meet the study objective.

Keywords: Business skills, Farmers, Bibliometric analysis, Bibliometric data

Introduction

The modern world is revolving around business and its ancillary activities. It is the business activities which stabilize and enables the economy to flourish through the establishment of more and more business ventures, produce a wide variety of commodities, exploit the export possibilities, bring foreign exchange to the nation, and bring a share to the country's GDP. A country cannot merely focus on achieving social and welfare gains; rather, it has to equally emphasize attaining economic gains. Moreover, it is the economic gain that opens the way for achieving social and welfare gains for a nation. The role of business activities is pivotal in bringing economic returns to the country, as the prime objective of the business is to generate profits.

A business mind and approach are essential to carry out the operations of any sector to ensure its sustainability and existence in the long run. The generation and exploitation of novel business ideas from time to time have brought significant changes at the global level and have paved the way for the introduction

of innovative products and services. The adoption of various business skills by people in their respective disciplines is the need of the hour. Likewise, the incorporation of business skills, as well as business planning in farming and the life of farmers, is essential to keep the sector alive and competitive.

Farmers who adopt business skills and strategies in their farming activities are clearly distinguished from those farmers who follow conventional ways of farming. The farmers who have business skills will find better methods and practices in managing their farms, try new breeds of crops, diversify their production activities to reduce risk, and will fetch higher profits. They will be more market-oriented as they know the pulse of the customers and will be able to supply products as per the demands of the customers as well as will also create new markets for their produce. On the other hand, farmers with business skills will be highly innovative and futuristic and are capable of scanning and exploiting opportunities as and when they arise.

It is inevitable for farmers to possess certain business skills to survive in this competitive

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world. A farmer who is good at sensing the dangers ahead and seizing the upcoming opportunities can only succeed in the long run. In light of the above discussion, the current paper aims to understand the knowledge base and pattern in the area of business skills of farmers. The research undertaken on the business skills of farmers is explored on account of the study.

Review of Literature

The previous studies conducted on the topic related to farmers, farming activities, skills possessed by farmers, and their problems are examined in connection with the present study.

The development of business entities in the field of agriculture assists the farmers in terms of support services and also promotes entrepreneurship among them (Cheng et al., 2022). Farmers' business capacity is positively influenced by the factors such as level of education, organizational support, access to experts, etc (Suryanti et al., 2019). The entrepreneurial skills of the farmers, to a great extent, are determined by their age, gender, educational qualification, the extent of farmland, and type of farming (Rosairo & Potts, 2016). Farmers are required to develop the skills to build a cordial team and implement the required changes. For example, the skills that are essential to make dairy farming profitable and successful constitute managing risk associated with feed prices, managing marginal costs, managing supplements, ordering supplements at the best price, negotiating with suppliers and contractors, balancing nutritional requirements, and having knowledge of different feeds (Eastwood et al., 2017).

Diversification act as a catalyst for bringing more income to the farmers. The diversification of farm activities is highly dependent on the business skills and strategic capabilities possessed by the farmers. On the other hand, these skills and capabilities are determined by the components such as farm holdings, age, experience, skills, and family conditions of the farmers and are also influenced by environmental factors (McElwee

& Bosworth, 2010). On the other hand, the participation of the farmers in agricultural extension programmes enables them to adopt new technology and innovations in their farm activities. It also makes the farmers capable of accessing information from other farmers and attaining superior business performance (Jack et al., 2020). Business plans have a major part in deciding the performance of the enterprise. The farmers who possess business skills will be able to develop better business plans and will eventually bring better farming results (Wachira & Musyoki, 2015).

Lack of agricultural implements for better production, insufficient land availability to expand production, lack of marketing skills and information, poor market infrastructure, poor physical infrastructure, high transportation cost, poor production and farm management skills, and low education levels are the major factors limiting the farmers from converting farming into a commercial activity (Khapayi & Celliers, 2016). There is a need for establishing more microfinance institutions to meet the financial requirements of the farmers so that they can diversify their operations. In addition to this, there is a need for extending mentoring and training support to the farmers for improving their various skills, including their managerial skills (Ellitan et al., 2018). There is a need for providing training in the field of the agri-food supply chain to the farmers to increase their business skills. Besides, it will help the farmers in improving the quality of products as well as add to the empowerment of farmer groups (Sutopo et al., 2012).

Research Methodology

Data Extraction

The bibliographic data for the study is extracted from the Dimensions database by employing the keyword *business skills of the farmers*. Publication year was limited to 5 years from 2017 to 2021, and the publication type was confined to articles. The search fetched 46591 articles, of which bibliographic data on 2500 articles were retrieved based on relevance.

Data Analysis

The knowledge base and trend in research related to the business skills of the farmers are ascertained through bibliometric analysis of the bibliographic data on the same. The bibliometric analysis techniques such as citation analysis, co-citation analysis, bibliographic coupling network analysis, and term co-occurrence analysis using VosViewer software.

Analysis and Discussions

The study made use of citation analysis, co-citation analysis, bibliographic coupling network analysis, and term co-occurrence analysis to capture the knowledge base of the

research on the business skills of farmers. The bibliometric analysis is carried out to find the most prominent authors, journals, articles, and terms used in the research area of business skills among farmers.

Document Citation Analysis

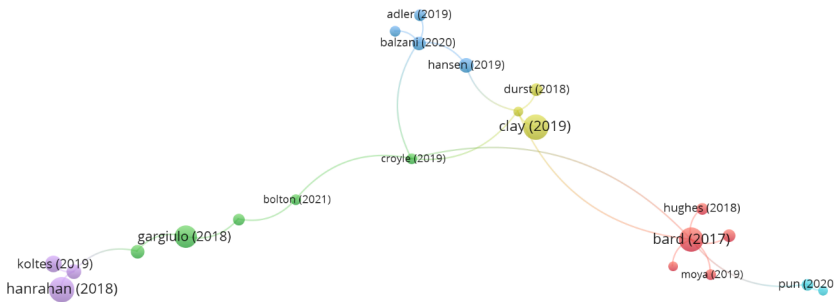
Document citation analysis is undertaken to find the most influential article based on the number of times that particular article is cited by others. Here in the study, the minimum requirement of citations of a document is fixed at five, and it produced 546 documents meeting the criteria. Some items in the network are not connected; hence, 22 items that are connected in the network went into the final analysis.

Table 1
Document Citation Analysis

Author	Title	Citations
Hanrahan et al. (2018)	Factors associated with profitability in pasture-based systems of milk production	98
Clay et al. (2019)	Dairy intensification: drivers, impacts, and alternatives	92
Bard et al. (2017)	The future of veterinary communication: partnership or persuasion? A qualitative investigation of veterinary communication in the pursuit of client behaviour change	85
Gargiulo et al. (2018)	Dairy farmers with larger herd sizes adopt more precision dairy technologies	75
Koltes et al. (2019)	A vision for the development and utilisation of high-throughput phenotyping and big data analytics in livestock	40

Note. Extracted from VosViewer software

Figure 1
Bibliometric Visualisation of Document Citation Analysis



Note. Extracted from VosViewer software

Co-citation Analysis of Cited Sources

It is employed to know the relation between the articles, authors, and sources based on the number of times the articles, authors, and sources are cited by other pairs of articles, authors, and sources. Here for co-

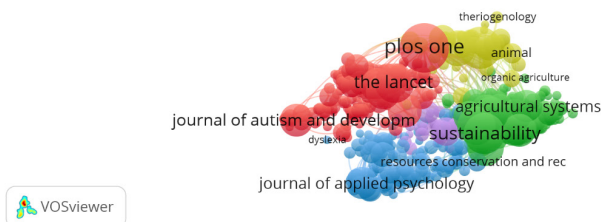
citation analysis, cited sources are taken as the unit of analysis to ascertain the most relevant sources of articles on the business skills of the farmers. The minimum number of citations of a source is set at 35, and it generated 574 sources meeting the conditions.

Table 2
Co-citation Analysis of Cited Sources

Source	Citations
Plos One	1144
Journal of dairy science	834
Sustainability	790
The Lancet	735
Journal of cleaner production	634

Note. Extracted from VosViewer software

Figure 2
Bibliometric Visualisation of Co-citation Analysis



Note. Extracted from VosViewer software

Bibliographic Coupling Network Analysis

It is performed to identify the most coupled author or publication. Here in the study, ‘authors’ are taken as the unit of analysis for performing bibliographic coupling network analysis. The minimum number of citations

of documents of an author is fixed at 10, and the minimum number of documents is fixed at 2,386. The authors met the criteria, but only 371 items connected in the network became part of the final analysis.

Figure 3

Bibliographic Visualisation of Bibliographic Coupling Network Analysis



Note. Extracted from VosViewer software

Term Co-occurrence Analysis

It attempts to discover the terms that are highly used in a particular research domain. Here in the study, term co-occurrence analysis is performed to identify the terms that are frequently used in the research related to the business skills of farmers. The minimum occurrences of a term are fixed at 25, and it produced 583 terms. However, 272 items based on relevance score became part of the final analysis.

Table 3

Term Co-occurrence Analysis

Terms	Occurrences
Farmer	472
Paper	468
Intervention	399
Year	399
Gray	348

Note. Extracted from VosViewer software

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