The Covid-19 Pandemic and Farmer Livelihood in a Rural Area: a Bibliometric Analysis

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Abstract. The COVID-19 pandemic since 2020 has impacted people's lives, including farmers' livelihoods in rural areas. During this period, many studies have also been conducted on the COVID-19 pandemic. This paper aims to provide a bibliometric analysis of the COVID-19 pandemic research across the livelihood and the relationship between the COVID-19 pandemic and farmers' livelihoods in rural areas. The method used in writing this paper is to use the bibliometric stage. The data source comes from the article database on Scopus published from 2020 to 2022, selecting the document type, journal articles, and conference proceedings. The results show that the COVID-19 pandemic has significant impacted livelihoods such as decreased prices, sales, income, access to inputs and labour, etc. At the same time, the COVID-19 pandemic has impacted related community innovations, such as storage, marketing strategies, and plant planning.

Keywords: COVID-19 pandemic, farmers' livelihood, rural area, VOS Viewer

1 Introduction

The COVID-19 pandemic has had various impacts on various aspects of life and caused a shock to all sectors, including the agricultural sector [1]. Various policies, such as restrictions on public activities, impact community activities in earning a living, either directly or indirectly. The impact of the COVID-19 pandemic on livelihoods includes those in rural areas where their livelihoods are dominated by land-based work or agriculture.

Many studies have been conducted in various fields since the COVID-19 pandemic [2]. The research results [3]show that physical, social, and humanities subjects lag far behind regarding overall citations and the number of relevant publications. Research on the impact of the COVID-19 pandemic on farmers' livelihoods in rural areas is exciting because the disruption of farmers' livelihoods will affect many aspects of life.

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The academic literature can be analyzed using bibliometrics, including journals, authors, countries, and institutions. The bibliometric analysis may be a well-known and thorough strategy for investigating and analyzing expansive volumes of logical information [4]. The paper's main aim is to provide a bibliometric analysis of COVID-19 research across the livelihood and the relationship between the COVID-19 pandemic and farmers' livelihoods in rural areas.

2 Method

Bibliometric data on COVID-19-related research was obtained in several stages, as presented in Figure 1. The first stage involved identifying all relevant documents or publications from 1 June 2020 to 1 June 2022 in the Scopus database. The applied search query extended previous narrowly-defined queries by including a broad range of COVID-19 and farmer livelihood. Searching for keywords was set to include titles, abstracts, and keywords. Then, only documents in English and articles in the journal and/or proceeding were considered for the review process. Finally, we screen according to the paper's abstract and content.

The data were downloaded and converted into a format that fit the bibliometric tools and data were converted into comma-separated values (CSV). The data was imported with a map to find the bibliographic data. The data can be displayed through the network, overlay, and density visualization, so we can see the clustering of the data obtained. The VOS viewer collects data sets and visualizes the terms of bibliographic coupling, citation, co-citation, co-authorship, and co-occurrence of the keywords by authors. The results from the VOS viewer were keyword network co-occurrences.

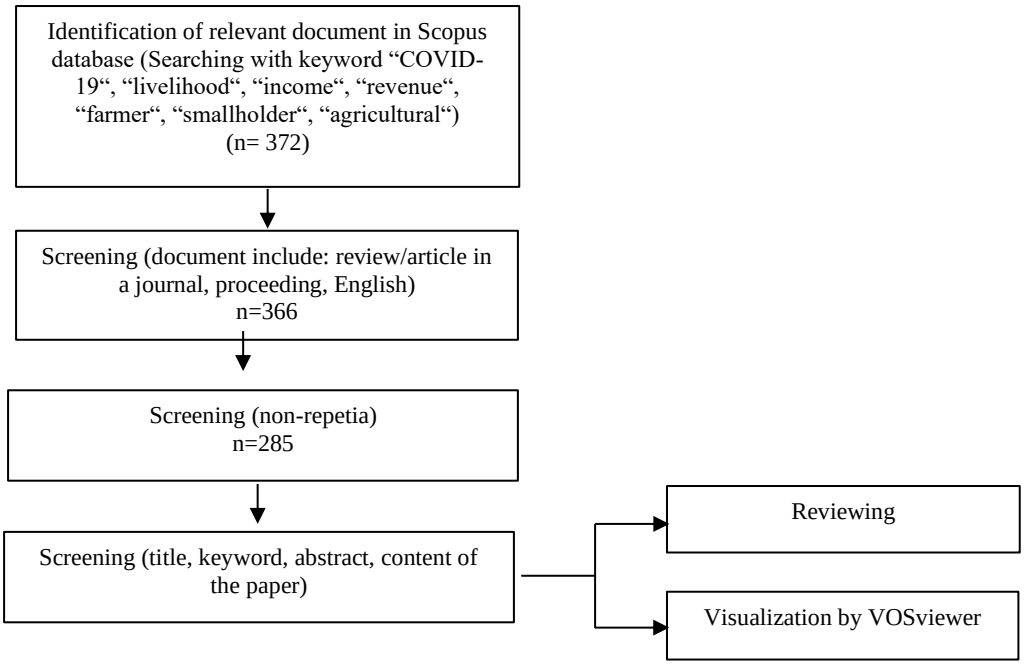

Fig. 1. Stage of the selection process

3 Result and Discussion

3.1 Description of the country of origin of the paper

The impact of the COVID-19 pandemic is felt by many parties in various parts of the world, so research on the COVID-19 pandemic that is linked to the livelihoods of farmers in rural areas is being conducted by many researchers in various locations. In the picture, it can be seen that research on COVID and livelihoods comes from India, Indonesia, and America. In general, research on the COVID-19 pandemic is mainly related to public health. This makes sense given that the virus originated in China [2] The network visualization of country area is presented in Figure 2.

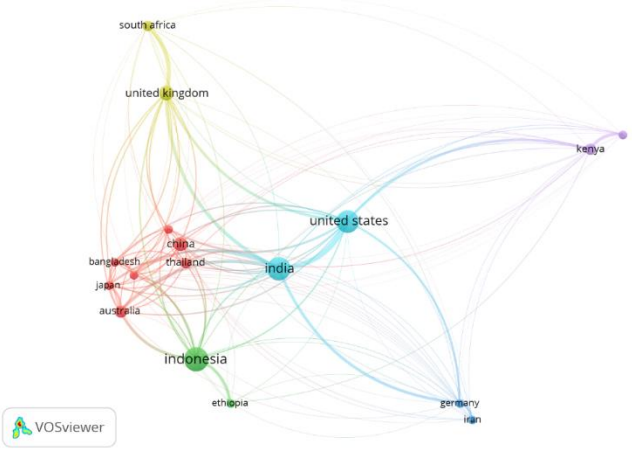

Fig. 2. Network visualization of country area research of the COVID-19 pandemic and livelihood

3.2 Description of the research theme of the COVID pandemic and livelihoods

Based on the analysis results, it is known that the COVID-19 pandemic and livelihood research are related to several topics, which are divided into five clusters (red, green, yellow, blue, and purple). The bibliometric results are presented in three different visualizations, namely network visualization (Figure 3), display visualization (Figure 4), and density visualization (Figure 5). Keywords are marked with a circle colour, while the size of the circle is positively correlated with the appearance of keywords in the titles and abstract. The frequency of occurrence determines the size of the letters and circles. The more often a keyword appears, the greater the size of the letter (Ida Hamida et al., 2020).

In Figure 3, we can see that the COVID-19 pandemic, livelihood, resilience, and smallholder farmer are in one cluster (yellow). This shows that there is a close relationship between them. Figure 4 shows the trend of COVID-19 pandemic research and livelihoods yearly. The figure shows that most of the research on the COVID-19 pandemic and livelihoods was carried out in 2020 and 2021. In Figure 5, density visualization shows the depth of the research. From Figure 3, we can see that the keywords often appear in papers are related to the COVID-19 pandemic and livelihoods, livelihood, and food security. This shows that a lot of research on livelihoods

in rural areas during the COVID-19 pandemic has been carried out, but other aspects related to livelihoods still need to be the attention of researchers.

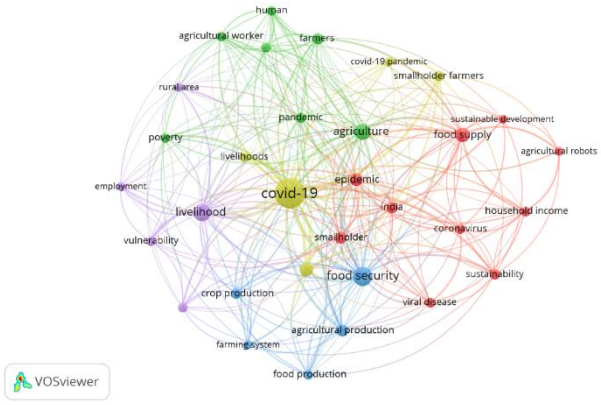

Fig. 3. Co-occurrence network visualization in the COVID-19 and farmer‘s livelihood research

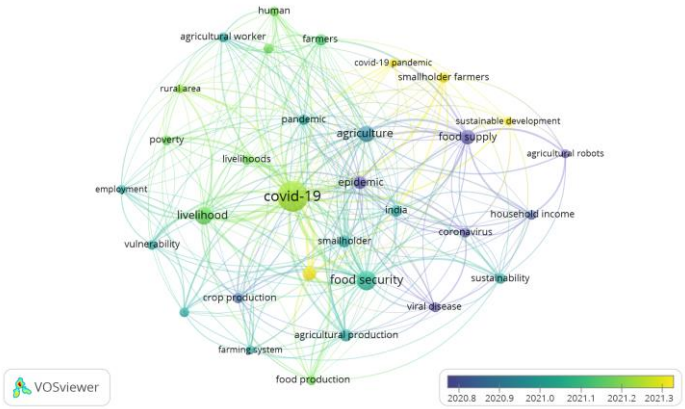

Fig. 4. Co-occurrence overlay visualization in the COVID-19 and farmer‘s livelihood research

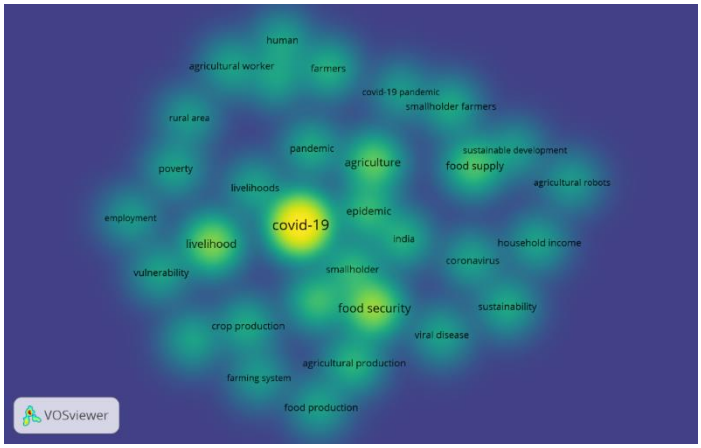

Fig. 5. Co-occurrence density visualization in the COVID-19 and farmer‘s livelihood research

3.3 What is the impact of the COVID-19 pandemic on farmer livelihoods in rural areas?

In general, the livelihoods in rural areas are farmers or farm labourers. Some farmers have a side job, but they are not diverse. Therefore, when there was COVID-19, the people in the village worked as farmers, although they experienced many changes. Based on a review of 99 papers, it is known that the impact of the COVID-19 pandemic on farmers' livelihoods has direct and indirect impacts, both unaffected and positive (Table 1) and negative (Table 2). The negative impact of the pandemic is more significant in developing countries due to their higher dependence on agroecosystems [1]

Table 1. Unaffected and the positive impact of the COVID-19 pandemic

No	Unaffected / Positive Impact	Source
1	Increasing demand for staple foods and purchases from local small shops and online food shopping	[5]
2	Encourage expanded local food sources and a wider variety of agricultural patterns	[6]
3	Fostering regional food innovation to strengthen the neighbourhood economy	[7]
4	To lessen exposure to fluctuations in the food supply, promote food storage	[8]
5	Urban areas had much significant decreases in food spending than rural areas did	[9]
6	Encouraging extension of technical innovation	[10]
7	Increase in the price of ginger and shallot bulbs	[11, 12]
8	Push for digital transformation	[13, 14]
9	Make a plan related to savings and the type of plant to be planted	[15]
10	Agri-food systems are resilient	[16–20]

Table 2. The negative impact of the COVID-19 pandemic

No	Negative Impacts	Source
1	Women, high-production farmers, and farmers with big family sizes are more susceptible to the effects.	[21]
2	Decreased prices, sales, income, access to inputs, and labour.	[1, 6, 22–79]
3	Farmers with a high level of involvement in agricultural	[80]
4	Disrupted food chains and smallholders, tourism, and labour migration.	[81][82]
5	Fluctuations in coffee prices decreased productivity and damage caused by pests and diseases.	[83]
6	Disrupted production, commercialization, income, human health, and forms of communication.	[84, 85]
7	The decline in agricultural yields and vulnerability of women farmers	[86]
8	Decreased sales, daily wages, and food diversity.	[87]
9	Reduced access to clean water, sanitation, and healthcare systems.	[88]
10	Disrupted food availability, agricultural production, decreased working time and increased debt trap.	[82, 89]
11	Reduced access to nutrition.	[82, 90]
12	Inability to repay credit; shift in purchasing and consumption patterns; market disruption; sales changes; decline in agro-tourism; and agricultural worker shortage	[91]
13	Disrupted wage workforce.	[92]

14	Non-agricultural livelihood opportunities.	[93]
15	Lack of livelihood	[94][95][82]
16	It slowed down the commercial and industrial sectors, and many lost jobs.	[96]
17	The competitive dynamics of cocoa commodities.	[97]
18	Disrupted migrant income, livelihood income	[98]
19	Disrupted food security.	[99][100][101][82]
20	Economic vulnerability, the development of grassroots public health care	[102]

4 Conclusion

The impact of COVID-19 on livelihoods is an exciting issue because the disruption of livelihoods will impact other aspects in the short, medium, and long term. There has been quite a lot of research on the relationship between COVID-19 and the livelihoods of farmers in rural areas; both are directly related to the livelihood itself. However, from the themes that have been identified, of course, there are still many opportunities that need to be investigated further, especially during the post-covid period. From a brief review of efforts to mitigate the COVID-19 virus, many policies limit restrictions on the movement of labour, agricultural supplies, marketing channels, and so on. This condition generally negatively impact livelihoods and income because it decreases sales volume, prices, and opportunities to work with daily wages. However, the positive impact is that farmers are moved to make innovations to maintain their livelihoods and incomes, such as in storage, marketing strategy, or planting planning.

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