

Examining the Impact of COVID-19 on the Banking Industry: A Bibliometric Analysis

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Abstract

The impact of COVID-19 on the banking industry has had a significant effect. This study tries to map the development of research published in this field. The research was conducted using VOSViewer software. The data were analyzed in the form of scientific research related to the impact of COVID-19 on the banking industry, totaling 28 articles indexed by the Scopus database. The results show that the number of research publications on the impact of COVID-19 on the banking industry is quite large. The network visualization shows that the map of developing research on the impact of COVID-19 on the banking industry is divided into several clusters with the most popular keywords, namely COVID-19, banking, and viral disease. Strongbayefa A, Akhmetov Y, Mohan T, and Baskaran A are the top authors. The top institutions are the Technical Expert Group on Sustainable Finance, Brussels, and the Department of Accounting Finance, Rennes School of Business. The most popular countries are India, Canada, and Saudi Arabia. Besides, it was found that research on the impact of COVID-19 on the banking industry was felt recently due to credit and non-performing loans which then had implications for restructuring policies. In the end, conventional banking is more affected by COVID-19 than Islamic banking in terms of its problematic financing ratio.

Keywords: Banking Industry, Covid-19, Bibliometrics

JEL Classification : G21, O16.

A. INTRODUCTION

The banking industry, in general, has the aim of serving both the surplus and deficit people to increase their standard of living. However, there is intense global competition in the banking industry (Julia & Kassim, 2020). Various countries have

currently implemented a dual banking system mechanism where there are a conventional banking system and an Islamic banking system in the banking industry (Yunita, 2020). Therefore, banks continue to strive to grow and seek to increase their market share. Islamic banking

Examining the Impact of COVID-19 on the Banking Industry:
A Bibliometric Analysis

itself has been around for more than three decades, but its market acceptance is relatively lower when compared to conventional banks (Shaikh et al., 2020). However, Islamic banking specifically seeks to develop the economy by increasing real economic activities that remain compliant with sharia principles (Muneeza & Mustapha, 2020).

Various policies issued by governments in various countries aim to be able to realize financial prosperity and will lead to economic equality, especially in the era of the COVID-19 pandemic, where most countries in the world are affected and declared as an emergency solution to break the COVID-19 chain (Jamaruddin & Markom, 2020). COVID-19 has become a global challenge with a significant prevalence rate and has had devastating consequences in terms of the pandemic, economic and social issues (Shahabi et al., 2020), including in the banking industry.

According to the Islamic Finance Development Report 2020, the Islamic finance industry experienced double-digit growth of 14% in 2019, bringing total assets to 2.88 trillion in the US. This achievement was obtained even though the Islamic financial market had experienced uncertainty over the past few years due to falling oil prices and weak industrial growth in 2018 (Refinitiv & Islamic Corporation for the Development of the Private Sector, 2020).

Among the factors that played a role in the 14% growth of global Islamic finance industry assets, namely the increase in the level of Sukuk issuance in traditional markets in the GCC and Southeast Asia

(Rahman et al., 2020). This relatively new market has also attracted non-Muslim issuers from Europe, Asia, and Africa. The Sukuk market emerged as a new phenomenon in the global financial system after the global financial crisis. This is a potential alternative to increase capital to meet corporate financial needs and promote sustainable economic development (Paltrinieri et al., 2019).

This rapid growth has also been driven by continued growth in Islamic banking assets, which account for the majority of industrial assets. The fastest expansion is seen in non-core markets such as Morocco, where 'participatory banking' was introduced in 2017. Other markets that are likely to see further expansion in Islamic banking include Indonesia, which shows the most notable increase in the ranking of IFDI countries. Indonesia moved into second place for the first time because its Knowledge and Awareness indicators were driven by a large number of Islamic finance education providers in the country and the high number of research papers produced and Islamic finance (Marlina et al., 2021). This reflects the ongoing implementation of the 2019-2024 Islamic Economic Master Plan introduced by the National Committee for Sharia Economics and Finance (KNEKS).

There are 28 scientific research papers published by various journals, both national and international, in the period of one-year observation until the time this paper was written, namely February 2020,

Examining the Impact of COVID-19 on the Banking Industry: A Bibliometric Analysis

which discusses the impact of COVID-19 on the banking industry. The paper with this theme is interesting to discuss, considering the importance of scientific research to be carried out to generate ideas and innovations that can answer economic problems, especially the banking industry on facing the impact of Covid-19 on the middle and lower class.

This research is structured as follows. The second part reviews, in general, the research method, namely the bibliometric method. The third part presents and reports the results of the bibliometric mapping visualization ranging from trends in keywords, authors, journals, and author-affiliated institutions, to the top citation in a paper on the theme of the impact of COVID-19 on the banking industry. The fourth part is the closing of the paper, which contains a summary of the main discussion and conclusions.

B. LITERATURE REVIEW

Islamic banking is a banking system developed based on the provisions of Islamic law as a substitute for conventional banking because it contains cases that are prohibited in Islam (Muneeza & Mustapha, 2020). The existence of Islamic banks aims to make it easier for Muslims to achieve economic empowerment through permitted financial and financing institutions. The various forms of financial transactions that exist in Islamic banking are

carried out using various Sharia contracts for commercial and social activities.

Islamic banking also has the goal of being an intermediation between people who have enough assets and those who are deficient to improve the standard of living of the community. In addition, Islamic banking also plays a role in developing the economy by increasing real economic activities through real business activities, including sales, leasing, or partnerships with customers (Shaikh et al., 2020).

Although high expansion was seen in 2019, industrial growth is expected to slow down to single digits, reaching US \$ 3.69 trillion by 2024, as the world seeks to deal with the Coronavirus pandemic that occurred on a global scale in the first quarter of 2020 (Refinitiv & Islamic Corporation for the Development of the Private Sector, 2020). The pandemic has harmed the Islamic economy and finance, several Islamic financial institutions, including Islamic banks, have reported losses or decreased profits caused by an increase in credit value depreciation related to Covid. This has resulted in the attention of countries around the world shifting from the problem of the spread of disease to a focus on the economic and financial consequences for nations and peoples (Rusydiana, 2021).

Between January 2008 and December 2019, before the pandemic, financial crises in the financial sector occurred several times. Recorded 2008 as a global financial

crisis that had a major impact on the stability of the financial sector, including Islamic banking. However, the capital of the Islamic banking industry was still able to survive (Yunita, 2020). The occurrence of the COVID-19 pandemic then had a negative impact in the form of a very severe health crisis, as well as its impact on changing the structure of the global economic order (Shahabi et al., 2020).

The shocks that are occurring around the world as a consequence of the actions taken to contain the virus have severely hindered the economic and financial sectors. Funds channeled from financial institutions to community businesses, as well as companies, are affected. The existence of regional quarantine also causes banking products not to be distributed properly (Aisyah et al., 2020). This caused the financial system to erode, including the interest in conventional banks, because many banks had to lower their loan interest.

As a result of this pandemic, the financial sector, including Islamic financial institutions, as one of the industries predicted to be affected, needs to develop innovations that take advantage of technological developments (Afandi, 2020). Islamic banking can utilize technology as a competitive advantage through Financial Technology (Fintech).

It is hoped that Islamic banking will get wider market opportunities with the fintech collaboration. The most important goal is to present Islamic financial services

digitally in an easily accessible way. This growth will pave the way for the production of Islamic market goods that are compliant with sharia to sell a more durable competitive advantage for the Islamic financial sector (Jamaruddin & Markom, 2020).

C. RESEARCH METHODS

Bibliometric mapping is an important research topic in the bibliometric field (Börner et al., 2003). Two distinguishable bibliometric aspects are the construction of the bibliometric map and the graphical representation of the map. In the bibliometric literature, the greatest concern is in the construction of the bibliometric map. Research related to the effects of differences in similarity measures (Ahlgren et al., 2003; Klavans & Boyack, 2006; Van Eck & Waltman, 2009) and tested with different mapping techniques (Boyack et al., 2005; Van Eck & Waltman, 2007a; White, 2003). The graphic representation of the bibliometric map has received less attention. Although some researchers seriously study issues related to graphical representations (Chen, 2003, 2006; Skupin, 2004), most articles published in the bibliometric literature rely on simple graphical representations provided by computer programs such as SPSS and Pajek.

This section discusses the use of VOS, which is to build a bibliometric map. The purpose of VOS is to place items in such a

low dimension that the distance between the two items accurately reflects the uniformity or association of the items. For each pair of items i and j , VOS requires a similarity input s_{ij} ($s_{ij} \geq 0$). VOS treats the equation s_{ij} as a measure on a ratio scale. The equation s_{ij} is usually calculated using the strength of the association defined in Equation 1 (Van Eck et al., 2006; Van Eck & Waltman, 2007b). VOS determines the location of items on the map by minimizing

$$V(x_1, \dots, x_n) = \sum_{i < j} s_{ij} \|x_i - x_j\|^2 \dots \dots \dots (1)$$

to:

$$\frac{2}{n(n-1)} \sum_{i < j} \|x_i - x_j\| = 1 \dots \dots \dots (2)$$

Therefore, the idea of VOS is to minimize the weighted sum of the squares of the distance between all pairs of items. The square of the distance between pairs of items is weighted by the equation between those items. To avoid worthless solutions, where all items have the same location, a limit is imposed so that the average distance between two items must be equal to one.

Two computer programs have implemented the VOS mapping technique. Both are available free of charge. A simple open-source program is available at www.neesjanvaneck.nl/vos/, and a more advanced program called VOSviewer (Van Eck et al., 2010) is available at www.vosviewer.com. Both programs use the variant of the SMACOF algorithm

mentioned above to minimize Equation 1 to Equation 2.

This research uses paper publication data sourced from various journals with research on the theme of the role of sharia economics and finance during the Covid-19 pandemic. Data collection through tracing papers within the last year. From the search results, there were 28 published articles indexed by the Scopus database. Data in the form of trends in the publication of the theme of the role of the economy and Islamic finance during the Covid-19 pandemic were analyzed using the VOSviewer software.

D. RESULTS AND DISCUSSION

This section explains the number of published papers on the theme of the impact of COVID-19 on the banking industry. 28 documents consist of published papers published and indexed by Scopus during the last year of observation. The distribution of papers with a large numbers dominates the themes in economic and financial journals. The publication of a paper with the theme of the impact of COVID-19 on the banking industry until February 2021, which we made as the object of study, totals 28 papers. However, this is because 2021 has not been completed until the period December 2021, the number of papers is still possible to increase and increase, and the data collection of papers studied in this study is until February 2021.

Examining the Impact of COVID-19 on the Banking Industry: A Bibliometric Analysis

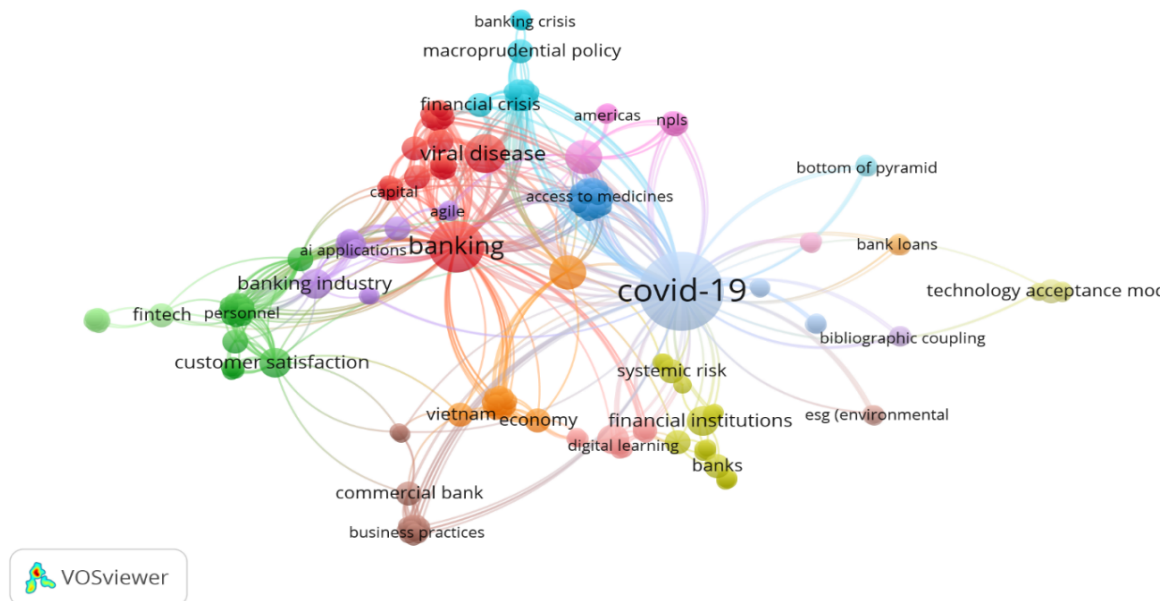


Figure 1. Bibliometric Keyword Mapping

This section will present a graphical visual mapping of the publication of a paper with the theme of the impact of COVID-19 on the banking industry. The results of the keyword mapping analysis form the basis for the co-occurrence mapping of important or unique terms contained in the theme of this research article. Mapping is a process that enables the recognition of elements of knowledge and their configuration, dynamics, interdependencies, and interactions.

Related to bibliometrics, science mapping is a method of visualizing a field of science. This visualization is done by creating a landscape map that can display topics from science. The results of the visualization of the co-word map network for the publication of a paper with the theme of the impact of COVID-19 on the banking industry can be seen above.

In this mapping, several keywords that have frequently appeared in the paper on the theme of the impact of COVID-19 on the banking industry in the past year are displayed, and their relation to other keywords in 18 clusters, which are shown by different colors. Circles indicate groupings of frequently used words together.

The keywords that are divided into all of the clusters above are arranged in the form of a colored circle indicating the cluster group, the bigger the word circle, the more the number of occurrences of these words in this research theme. Meanwhile, the line relationship between keywords shows how much it is related to other keywords. This data can then be used in determining keyword trends in the past year. The bibliometric

Examining the Impact of COVID-19 on the Banking Industry: A Bibliometric Analysis

analysis shows several keywords that are widely used in the paper, which is the object of study. It was found that the most familiar keywords were *COVID-19*, *banking*, and *viral disease*.

The financial sector is experiencing the negative impact caused by the COVID-19 crisis. The financial markets of various countries experience massive capital outflows, and some borrowing customers face liquidity and repayment challenges. Efforts have been drawn up by policymakers with the aim of restoring markets and credit to the real economy to a large extent defended. However, downside risks still exist, and challenges from rising debt and bad credit levels could have negative implications for the impact of the pandemic in some countries.

Various restrictions have been made by various countries with the aim of breaking the chain of spreading the COVID-19 virus. One of the policies enforced is working from home, which is applied to many business sectors, one of which is the Islamic banking sector (Masyhuri et al., 2021).

Working from home is a new phenomenon, especially in developing countries, but this system still has to do it to protect the common interest. Working from home has both positive and negative effects. The positive impact is helping the government reduce the spread of the coronavirus, but the negative impact, the more frequent conflicts that occur with employees who have to work from home. This conflict causes employees to feel stressed because of difficulty balancing work time and family time. This condition can make employees feel bored at work and confused about doing their work because of the directions given during shorter meetings.

In this situation of high uncertainty and uneven impact, it is debatable how the economic and financial recovery will take place, and it is questionable how long it will take to recover from the economic damage caused by the pandemic. The role of banks and financial institutions will be very large in recovery during and after COVID-19 (Rabbani et al., 2021). Financial institutions are the backbone of any financial system as they are responsible for the smooth functioning of the economy and ensure a high level of liquidity in the economy. Financial institutions also have a role in offering credit, managing markets, and pooling risk among consumers. Recovery after COVID-19 will be hard work, and Islamic finance institutions will be very important, as during the post-2008 financial crisis recovery. Islamic finance is a financial system whose principles are based on ethics and morality. It is a financial system that ensures public participation, social and economic stability, encourages financial inclusion, and supports and promotes comprehensive human development. Islamic finance also places great importance on improving the quality of life, equitable distribution of income, and social justice for all. Islamic finance is also sustainable in nature as it offers financial services that are asset-backed, ethical, and based on a profit and loss sharing method, which means sharing risks fairly.

Several studies provide a cross-border overview of the use of different policy instruments to reduce the impact of the COVID-19 crisis. Some analyzed the determinants of fiscal and monetary policy during the COVID-19 crisis, suggesting that

Examining the Impact of COVID-19 on the Banking Industry: A Bibliometric Analysis

high-income countries, and especially countries with high credit ratings, provided a larger fiscal policy package. Furthermore, high-income countries use unconventional monetary policy when they enter a crisis with interest rates near the zero-lower bound. In addition, several central banks in developing countries were able to cut interest rates in the face of currency depreciation and capital outflows (Feyen et al., 2021).

Other research shows that COVID-19 has also triggered unprecedented action in nearly all countries around the world. The scale of public intervention at the domestic and international levels with the application of government market debt instruments is likely to further strengthen state bank relations. Banks in the European Union will become the dominant group of investors not only in the domestic debt market but also in the EU market. This will be a consequence of increasing domestic debt with the EU's issuance of European bonds and the agenda of the European Commission under the newly launched EU programs and funds. Banks will also be encouraged to acquire sovereign securities through expanding redemption schemes by central banks, including the European Central Bank Pandemic Emergency Purchase Program. Therefore, since the outbreak, the pandemic crisis has required an analysis of the position of the banking sector and its relation to the public sector, including the risks and effects on the economy and the possibility of providing credit (Boitan & Marchewka-Bartkowiak, 2021).

The most important implications of the impact of COVID-19 on banking (Thakor, 2020). First, banks will operate in a financial system

flooded with liquidity, and interest rates are very low. Second, the government will play an important role in the financial sector, both as a borrower (to finance the deficit) and as a risk taker providing guarantees, terminations, and more direct fiscal support for borrowers whose business and cash flow bear the burden of the virus. This means that banks will prefer to provide loans to borrowers whose cash flow is visible and strong while avoiding borrowers whose cash flow and income are at risk of being disrupted. A general rule that banks often follow is that size matters. Larger firms are less likely to default than smaller firms. The health of the banking sector depends on how quickly the economy recovers. All eyes are now on the government's upcoming fiscal stimulus package.

COVID-19 also enhances innovation from researchers to provide the right solutions. Since the focus of the Bank is to take the necessary steps for economic recovery from the effects of the pandemic to fill financial gaps, besides that the banking sector is also one of the sectors affected, so innovative green banking practices can be considered to play an important role in helping regular customers at home and stay safe (Srividya & Vijayalakshmi, 2021). In addition, this innovation is also expected to save nature by following green banking practices.

Furthermore, using the VOSViewer software, we found the bibliometric mapping of the authors, as in Figure 3 below. The bigger and more glowing the circle of light, the density of the author's name indicates the

Examining the Impact of COVID-19 on the Banking Industry: A Bibliometric Analysis

more papers he has published in the paper on the impact of COVID-19 on the banking industry in the past year.



Figure 2. Bibliometric Author Mapping

The cluster density view is the item (label) that is marked the same as the visible item. Each item dot has a color depending on the density of the item at that time. It identifies that the color of the points on the map depends on the number of items associated with other items. This section is very useful for obtaining an overview of the general structure of the bibliometric map by paying attention to which parts of the items are considered important to be analyzed. Through this worksheet, we can see the authors who have written the most publications.

Based on these results, a density map is displayed, which is the result of an analysis using all published articles on the theme of the impact

of COVID-19 on the banking industry, both related and unrelated. There are many clusters when sorted by author. The most popular authors wrote publications related to the impact of COVID-19 on the banking industry based on bibliometric mapping, namely Kuatbayeva A, Akhmetov Y, Mohan T, and Baskaran A.

The order in this mapping may have a difference with the author's top-ranking if we calculate manually, but in addition to calculating the number of papers published on the theme of the impact of COVID-19 on the banking industry, VOSViewer also takes into

Examining the Impact of COVID-19 on the Banking Industry: A Bibliometric Analysis

account the number of links and their terms with other authors.

Furthermore, the institutional mapping visualization is depicted in the bibliometric Figure 4. Based on this figure, several institutional

clusters appear to be listed in a glowing circle, indicating the institution's productivity in contributing to publishing its paper on the theme of the impact of COVID-19 on the banking industry.

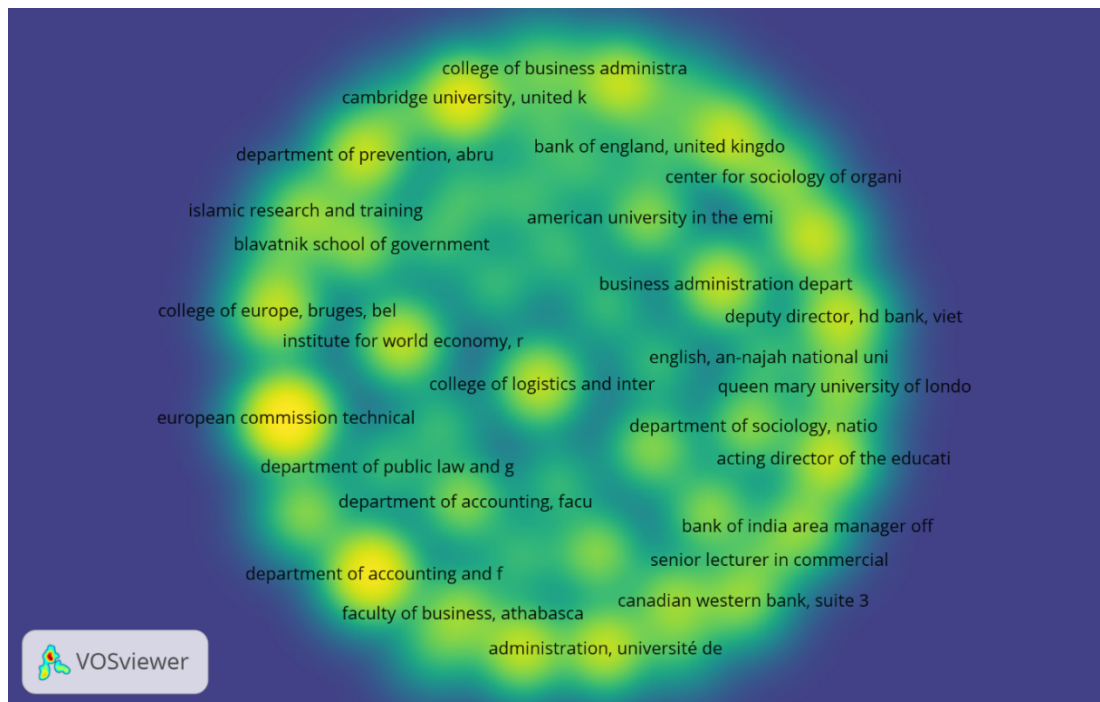


Figure 3. Bibliometric Institution Mapping

The largest institution in terms of the number of publications and a number of links with other institutions, where an institution can produce many authors in different journals. The top-ranking institutions include the first rank, namely the Technical Expert Group on Sustainable Finance, Brussels, Belgium, followed by the

Department of Accounting Finance, Rennes School of Business in second place.

Also, this study looks for countries of origin of authors who write the most on this theme paper, Figure 4 shows the mapping.

Examining the Impact of COVID-19 on the Banking Industry: A Bibliometric Analysis

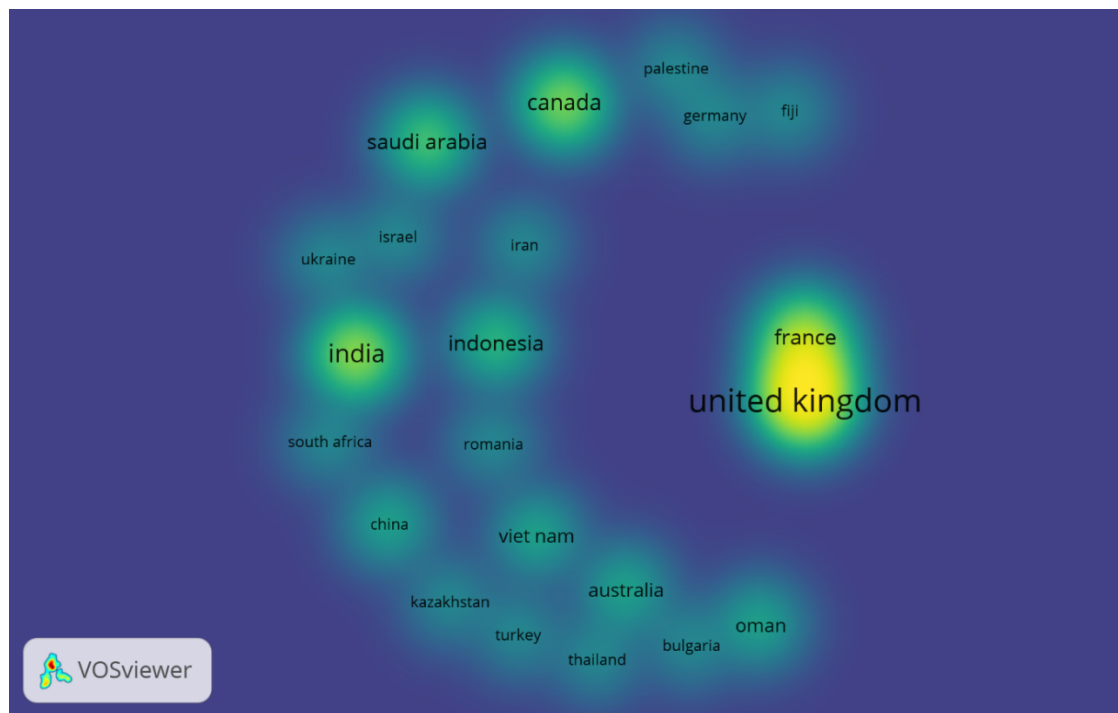


Figure 4. Bibliometric Country Mapping

The results of the visualization of the author's country of origin mapping network in the development of research on the impact of COVID-19 on the banking industry are divided into several clusters as in the picture above, but only one cluster has connections, namely the United Kingdom and France. Other large clusters that show the most productive countries are India, Canada, and Saudi Arabia.

Findings

Based on the results of the bibliometric mapping visualization that was carried out, it was found that there have been several scientific articles published by researchers discussing the impact of COVID-19 on the banking industry around the world. However, the impact felt by the banking industry has only recently emerged, so it

can be said that there is a time lag between the spread of COVID-19 and the significant impact that has emerged on world economic development, including on the banking industry (Mardhiyaturrositaningsih & Mahfudz, 2020).

This is because the COVID-19 pandemic that is spreading around the world for the first time has an impact on the real business sector, however, they should keep their business as far as possible. When the pace of the economy slows down further, the banking industry sector will be affected because many business owner customers have difficulty paying their obligations to the Bank, resulting in bad credit. The increase in the ratio of non-performing loans (NPL) and freezing of funding is one of

Examining the Impact of COVID-19 on the Banking Industry:
A Bibliometric Analysis

the direct impacts of COVID-19 in the banking industry (Baldwin & Weder, 2020).

Efforts that were then made by the government and the banking sector included providing relaxation to banking customers (Jaelani & Hanim, 2020), either through the restructuring process, increasing the financing period, or providing a grace period of 3-6 months ahead for affected customers. COVID-19 (Habibah, 2020).

The restructuring policy has been carried out by many conventional banks and Islamic banks (Iskandar et al., 2020). However, restructuring is not a write-off but provides leeway to pay off debt or financing payments, so that these funds are not recorded as bad credit. In the Islamic banking system, this restructuring policy follows the principle of giving deferrals to customers who are in trouble, as stated in the Al-Quran letter Al-Baraqah verse 280.

In the end, the COVID-19 pandemic still has an impact on the banking industry, both conventional and sharia. However, these two types of banking seem to have different responses in the ratio of problem financing according to their respective systems. Based on Indonesian Banking Statistics data, until November 2020, the NPL ratio (Non-Performing Loans) of conventional banking reached 3.15% (Financial Services Authority, 2020a), while in the Sharia Banking Statistics December 2020, the NPF (Non-Performing Financing) ratio of Islamic banking until December 2020 it reached 3.13% (Financial Services Authority, 2020b).

Islamic finance is based on the principles of ethics and morality and has the following characteristics (Rabbani et al., 2021):

- Its services are supported by underlying assets, so various derivative products such as options, futures contracts, and swaps are prohibited.
- Islamic banking is also based on the PLS (profit and loss sharing) method of doing business. Contracts such as musyarakah (a joint company in which partners contribute capital and share profits and losses) and mudaraba (joint ventures in which only one partner contributes capital and shares losses, the other partners work and only shares profits) are quite widely used and profitable for both sides.
- It is ethical because it prioritizes honesty, honesty, integrity and respect for others. Islamic financial institutions must not only follow the contract norms but must also follow Islamic transaction laws.
- Islamic finance is also subject to good governance because it is regulated by sharia; Sharia principles must come from the Qur'an and the Sunnah of the Prophet Muhammad (*Peace be Upon Him*). Islamic finance must adhere to the principles of the Qur'an and Sunnah with the category of permissible (halal), otherwise it is declared prohibited (haram). The above characteristics make Islamic finance more suitable for alignment with the Sustainable Development Goals proclaimed by the United Nations (UN-SDGs).

The concept of prohibiting usury and profit-sharing in the Islamic banking system has been proven to reduce disparities, injustice, and economic instability (Aisyah et al., 2020).

So, it can be concluded that conventional banking is more affected than Islamic banking, and Islamic banking is more able to withstand crises. However, banking as part of a financial institution that is needed by the community must be able to adapt and have a strategy to establish good communication and service with its customers (Sodikin, 2020), especially during the COVID-19 pandemic.

E. CONCLUSION

The focus of this research is to try to find out the development of the theme of the impact of COVID-19 on the banking industry in research, especially in papers with the theme of economic research and Islamic finance. The results show that there is a fluctuation in the number of publications of this theme paper which has received quite a lot of attention with a total of 28 paper publications.

The visualization of bibliometric mapping shows that the map of the development of this research theme is divided into several clusters, both in terms of the linkages between the themes and the coloring of the publication year. In terms of relation, it was found that the most popular keywords were COVID-19, banking, and viral disease. The most popular authors in research on the theme of halal tourism are Strongbayefa A, Akhmetov Y, Mohan T, and Baskaran A. The most productive author-affiliated institutions are the Technical Expert Group on Sustainable Finance, Brussels, and the Department of Accounting Finance, Rennes School of Business. The countries that are most widely used as objects of study are India, Canada, and Saudi Arabia.

This study found that the banking industry felt the impact of COVID-19 later than the real sector due to the time lag, where the impact on banking was caused by bad credit and financing from customers. The government and banks have issued policies to respond to this obstacle by implementing credit restructuring for customers affected by COVID-19. This policy is also following the principles of Islamic law in Islamic banking. Besides, COVID-19 has had more of an impact on conventional banking than on Islamic banking.

The purpose of this study is to present an overview of the research trends on the theme of the impact of COVID-19 on the banking industry, but the limitation has only been in the past year. Although research has been carried out using specific bibliometric indicators so that readers get a general representation of the most significant data on this theme, the results presented are still dynamic and may change over time with new trends emerging.

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A Bibliometric Analysis

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Examining the Impact of COVID-19 on the Banking Industry:
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