The Impact of Covid-19 on Islamic Economics and Finance Industry: Text Analytics using R

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Abstract: Covid-19 not only has an impact on the financial industry but also generally affected on the world economy. In the financial industry, currently, Islamic finance is growing fast. Thus, this study aims to determine the development of research on the impact of Covid-19 on the economy and the Islamic finance industry in the world by analyzing a study of 47 documents from the 2020-2021 period on the Scopus database using text analysis using R-studio. This study provides an analysis of keywords that are often used in the topic and provides an overview of the analysis of the most relevant words, word treemaps, co-occurrence networks, thematic maps, and conceptual structures. The results of this study indicate that Covid-19 has harmed several sectors of the Islamic economy and finance, including Islamic banking, Islamic capital markets, Islamic microfinance institutions, and tourism. In addition, the results of this study also provide several recommendations for several industries that have been negatively affected by the Covid-19 pandemic.

Keywords: Covid-19, Islamic Economics, Islamic Finance, Text Analysis, and R.

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Introduction

Covid-19 has spread massively to several countries, including Indonesia, since the end of 2019. To suppress the spread of the virus, the local government issued a lockdown policy. Unfortunately, the policies implemented had a negative impact, resulting in the cessation of economic activities, production, reduced community income, supply chain disruption, and bad credit (Fernandes, 2020). Not only that, the Covid-19 pandemic is projected to have a worse impact on underdeveloped and developing countries due to the lack of adequate facilities. This pandemic will directly impact the poor and workers in the country concerned (World Bank, 2020). If projected in an extreme scenario, globally, the number of people living in poverty will increase about 0.5 billion or 8% of the total world population (Summer, 2020).

In addition, the coronavirus has also caused fundamental changes in consumer behaviour in many countries and industries around the world, including in Indonesia. These changes will not only affect consumer behaviour but also provide changes in marketing communications promotions, decrease sales volume, and impact the elements of the marketing mix. Trisnowati and Muditomo (2021) research’s shows that several industrial sectors significantly impact the Covid-19 pandemic, including agriculture, elemental and chemical industries, plantations, transportation, infrastructure, finance, trade and services, and investment. This research shows that the financial industry includes banking, capital markets and micro institutions, and other industries such as the tourism industry, which have a significant impact by the Covid-19 pandemic.

For example, in the banking industry, Sutrisno et al (2020) in their research on the impact of the Covid-19 pandemic on the banking industry, found that Covid-19 caused a decline in company performance so it also had an impact on banking performance, including Islamic banks, especially in terms of probability. However, Islamic banking is considered more flexible in dealing with economic crises than conventional banking. Hasan (2020) in his research states that there are three risks to Islamic banking from the Covid-19 pandemic: financing risk, asset decline, and profit-sharing risk.
Other financial industries affected by the Covid-19 pandemic are the capital market and Islamic microfinance. Based on research conducted by Meixi & Yitong (2020) shows the Covid-19 pandemic that occurred in Xinguan had a short-term and significant negative impact on the Chinese capital market and peaked on the second day. Furthermore, Mubarok and Al-Arif (2021) showed that the stock prices of the six sharia stock index in six different countries had decreased.

Hidayat et al. (2020) found that since Covid-19 in Indonesia emerged in early March 2020, one of the significantly affected sectors was Islamic microfinance institutions (IMFI). Apart from Islamic banking and the Islamic capital market, other industries such as microeconomics and halal tourism have also been affected by Covid-19. Furthermore, the tourism sector, based on research by Purba et al. (2020), Covid-19 has harmed Indonesian tourism. It has negative implications for Indonesia's GDP, causing losses to the tourism sector and the Indonesian economy during the Covid-19 pandemic.

Research related to the impact of Covid-19 on Islamic economics and finance industry has been carried out. However, it is also necessary to research the development of the literature. The development of literature is a challenge in facing the current development of Islamic economics. So far, no research has tried to comprehensively review and evaluate the literature on the impact of Covid-19 on Islamic economics and finance industry especially using text analytics using R. The purpose of this research is to conduct a thorough literature review by identifying the existence of gap in research to help researchers know the development of research and help them to explore further research on the impact of Covid-19 on the economy and the Islamic finance industry. As well as providing recommendations to the government in making policies to overcome the impact of Covid-19 on several industries, both the Islamic finance industry and the halal industry.

Literature Review

The Impact of Covid-19 on the Islamic Economics and Finance Industry

The Covid-19 pandemic has changed several aspects of human life (Nicomedes & Avila, 2020). Covid-19 affected on the thousands of deaths worldwide (WHO, 2020), increased financial burdens in all countries (Barbier & Burgess, 2020; Edwards, 2020; Sahoo & Ashwani, 2020; Zou et al., 2020), lowers people's economies (Yang & Xin, 2020), and provide economic anxiety in individuals (Mann et al., 2020). If viewed from a microeconomic perspective, company performance is also affected, resulting in a decline in profits in most countries (Fu & Shen, 2020).

Since the lockdown policies implemented by the government in several countries have resulted in a decrease in domestic consumer demand and disrupted global supply chains, many companies are reducing production and employment, resulting in rising unemployment globally. Moreover the Covid-19 pandemic has also harmed the MSME sector. In addition to maintaining its business, the MSME sector also has to pay installments to financial institutions. If MSMEs are unable to pay the installments, it will also affect the financial institution concerned. MSMEs are a valuable state asset because this sector has significantly contributed to GDP, created jobs, and provided goods for local needs (Robe, 2013). For example, the countries of Taiwan, China, and Japan have reached a high level of development due to the contribution of MSMEs (Pandya, 2012).

Not only has a direct impact on MSMEs, Covid-19 has also harmed the world's economy, especially in Indonesia. The current impact of Covid-19 on the economic sector is the occurrence of layoffs (PHK), there have been more than 1.5 million or around 90% of workers laid off, and more than 1.5 million people have been laid off (Hanoatubun, 2020). Furthermore, Covid-19 has a significant impact on the financial industry. During the Covid-19 pandemic, the Central Bank swiftly responded to the financial industry's needs. The steps taken include reducing bank capital to finance loans/financing and temporarily delaying financing payments for customers affected by the economic impact of Covid-19. In Indonesia, for example, the Financial Services Authority (OJK) has issued a stimulus policy that includes credit restructuring for debtors affected by Covid-19 and providing concessions for the banking industry in determining the assessment of the quality of financing for affected debtors, as well as providing concessions for submitting periodic reports to institutions (OJK, 2020).

In addition to the banking industry, other financial industries affected by the Covid-19 pandemic are the Islamic capital market, including those in the OIC countries. Since the Covid-19 pandemic, the
Sharia Stock Index has fallen several times. This is indicated by MSCI Domestic net profit, IMI Custom Min Vol experienced a decline of 18.33% (msci.com, 2020). Furthermore, the Jakarta Islamic Index (JII), experienced a sharp decline of 6.44%. In other countries such as Malaysia, on March 13, 2020, the FTSE Bursa Malaysia Syariah also fell by 4.9%, then began to recover on April 7, 2020, with an increase of 2.41% (investing.com, 2021).

Previous Studies

Research on the impact of Covid-19 on economics and the financial industry has been carried out quite a lot, including Russiadi et al. (2020) in their study on 14 countries most affected by Covid-19. The results show that Covid-19 causes an increase in food prices due to unstable supply, limited space for movement, and a reduction in the supply of labor, resulting in a decrease in people's income and an increase in unemployment in various countries. In addition, this pandemic has also caused high inflation and economic instability.

Samhan (2020) examines the impact of the Covid-19 pandemic on Islamic financial institutions, which harm rental contracts and sales contracts due to the client's inability to pay installments. In response to this, the central bank asked Islamic banks to delay installments for a certain period and make arrangements according to the customer's condition to overcome the problem. However, if this happens for a long time, it will undoubtedly harm Islamic banks.

Mubarok and Al-Arif (2021) studied the impact of the Covid-19 pandemic on the sharia stock index used in six countries. The result shows that all stock prices have decreased due to the Covid-19 pandemic. Furthermore, the research conducted by Hidayat et al. (2021) aims to determine the impact of the Covid-19 pandemic on the halal industry before, during, and after Covid-19. The results show that the current Covid-19 pandemic can change consumer behavior in the short and long term.

Research Methodology

Data

Table 1 shows the types of documents used in the research with keywords the impact of Covid-19 on the Islamic economics and finance industry. There were 47 documents analyzed in this study which were divided into four categories, including journal articles (39 documents), anthologies/book chapters (5 documents), conference papers (2 documents), and reviews (1 document).

| No | Type of Documents | Total Articles | Percentage |
|----|-------------------|----------------|------------|
| 1  | Journal Article   | 39             | 82.97%     |
| 2  | Book Chapter      | 5              | 10.63%     |
| 3  | Conference Paper  | 2              | 4.25%      |
| 4  | Review            | 1              | 2.15%      |
|    | Total             | 47             |            |

From the results of grouping by the Table 1, it is known that the most widely used types of documents are journal articles with a percentage of 82.97% or as many as 39 documents. Thus it can be concluded that the references used are quite valid because most of them come from Scopus indexed scientific journals.

Method

The review process was carried out on July 25, 2021. Figure 1 illustrates the three steps in identifying research documents, namely eligibility, screening, and inclusion, involved in the systematic review process. The keywords used in this study will answer the research questions above. All articles that met the search criteria were then analyzed using text analysis. The documents were analyzed using the Bibioshiny software, a free software supported by R (CRAN, The Comprehensive R Archive
Network, https://cran.r-project.org) which provides a set of tools for quantititive research in
bibliometrics and scientometrics (Aria & Cucurullo, 2017).

Figure 1. Flow Diagram of the Search Strategy
Source: Zakaria et al. (2020), modified

**Results and Discussion**

**Text Analysis**

Text analysis was carried out using the R-studio and Biblioshiny software developed by Massimo
Aria and Corrado Cuccurullo from the University of Naples and Luigi Vanvitelli from the University
of Campania (Italy). First, an in-depth analysis on the search for words that often appeared intending
to know the development of research related to the theme so that recommendations were given to
further researchers.

To explore the results of the analysis text, a visual mapping chart of 47 documents will be
presented. The fundamental mapping analysis is carried out using keywords, abstracts, document
titles, and essential or unique terms contained in certain documents. Mapping is a process that enables
one to recognize elements of knowledge and their configuration, dynamics, interdependencies, and
interactions.
Most Relevant Word

The most relevant word analysis was carried out on the keywords of each document. There are several words with occurrences between 0 to 25 times. Figure 2 shows the 30 most relevant words related to the keyword “Covid and Islamic economics.”

The top word with the number of occurrences and the most relevant to the keywords “Covid and Islamic economics” is Covid-19 with 24 occurrences. The second word is Islamic finance with six occurrences. Furthermore, the third and fourth words are Islamic economics and pandemics with four times occurrences. The result shows that the halal industrial sector has dominated Covid and Islamic economics.

Meanwhile, for the countries, Indonesia is the word that most often appears in research with the keywords “Covid and Islamic economics.” The following most relevant countries are Malaysia and China. The result shows that Indonesia, Malaysia, and China are often used as case studies or benchmarks for research related to “Covid and Islamic economics.”

Zakat administration in times of Covid-19 pandemic in Indonesia: A knowledge discovery via text mining (Hudaefi, 2021), machine learning analysis through R-studio resulted in 16 topics related to 3 main topics (namely education, alms, and health services). The modeling explores knowledge about BAZNAS RI assistance for handling Covid-19, which can help readers understand zakat administration during the pandemic from the BAZNAS RI virtual website. This finding can draw on the socio-economic zakat theory, which explains that zakat as a religious obligation plays an essential role in shaping the social and economic processes of the Muslim community, especially during the unprecedented times of Covid-19.

Word Tree Map

Furthermore, the relevant words in the research with the keywords “Covid and Islamic economics” will be displayed in the abstract and document title in the form of the word Tree Map (see Figure 3). Word Tree Map displays words that often appear in boxes similar to regions on a map, where the more words that appear, the larger the square area.
Based on the analysis result of the abstract and the document's title, it was found that the most dominant words were related to Covid, Islamic, pandemic, financial and social. This confirms the findings in the previous analysis that the Covid-19 on Islamic economics and finance industry is the sector that has been most studied.

Most current research on "Covid and Islamic economics" deals with "Covid". In everyday life, the word "Covid" is relatively closely related to the virus that is currently rampant in Indonesia. Research conducted on Covid and Islamic Economics is related to "Economics during Global Recession: Sharia-Economics as a Post Covid-19 Agenda" (Arfah, 2020), “The World Economy and Islamic Economics in the Time of Covid-19” (Benamraoui, 2021), “Reflections on Covid-19, and the ethical issues for healthcare providers” (Bastani, 2020) and “Islamic economics and Covid-19: The economic, social and scientific consequences of a global pandemic” (Choudhury, 2021).

Research on the impact of Covid-19 on the Islamic economics and finance industry has also been carried out by several previous researchers with different objects. One of them is Choudhury (2021), with the title "Islamic Economics and Covid-19: Economic, Social, and Scientific Consequences of A Global Pandemic." The research examines certain critical aspects of socio-scientific theory in various themes and through an epistemic lens. In addition, this study also investigates the general theory of pandemics and their long-term effects on human welfare and the environment.

Co-Occurrence Network

The co-occurrence network displays words related to halal keywords in the form of coloured clusters by considering the relationship between one word and another. Based on the Figure 4, there are four clusters with related keywords, with four different colours. The red and purple clusters describe the description of Covid and Islamic economics related explicitly to Islamic finance, Covid, pandemic, financial, and other words related to them. In contrast, the green and blue clusters are more generally related to global, economy, banking, and Corona.
The red clusters are dominated by words related to Covid. The words in this cluster are Covid, pandemic, financial countries, impact, model, markets, institutions, capital, development, stock, Indonesia, markets, epidemic, crisis, Malaysia, media, addressing, policies, and ethics. The purple clusters are dominated by words related to Islam. The words in this cluster are Islamic, social, finance, innovation, era, fintech, Covid, role, Islam, economic, and effect. The words in the green cluster are halal policy, banking, implications, Corona, and perspective. Meanwhile, the words in the blue cluster are global, economy, world, economics, and time.

**Thematic Map**
**Figure 5** are obtained from a semi-automatic algorithm by reviewing the titles of all references to the object of research with relevant keywords other than the author's keywords. So the results can capture more profound variations. Centrality with *halal* keywords is divided into four quadrants.

Quadrants show a particular theme and are rarely studied but have high development, which is indicated by high density but low centrality. The upper left quadrant is a highly developed and isolated theme. The themes in this quadrant are epidemic, media, impact, Fintech, Covid, and Islam. At the same time, the lower left quadrant represents emerging or declining themes. This quadrant shows themes that have been used for a long time but experience an up or down trend with low density and centrality, but none of the themes is in this quadrant.

While the upper right quadrant is a motor theme or driving theme characterized by high density and centrality, it needs to be developed and is essential to further research. The words that appear in this quadrant are perspective, Corona, effect, implication, banking, and policy.

Lastly, the lower right quadrant is an essential and transverse theme characterized by high centrality but low density. The themes in this quadrant were Covid, pandemic, financial, Islam, finance, country, Coronavirus, and easing. These themes are essential to be included in the research because they are general topics that are commonly used. Covid is classified as a primary theme because the word "Covid" tends to describe the current state of Indonesia. Likewise, Islam and finance tend to be aimed at the *halal* industry.

**Conceptual Structure**

Conceptual structure map displays the mapping of words by region through the relationship between one word to another. This study also describes the conceptual structure map of each word that often appears in research papers with the keywords "Covid and Islamic economics". The conceptual structure map analysis results classify words into two clusters, namely blue and red clusters. Each cluster contains words that have relevance to each other.

![Conceptual Structure Map - method: MCA](image)

**Figure 6.** Conceptual Structure

Based on the **Figure 6**, the red cluster has more words included in it, than the blue cluster. Words in the red cluster are dominated by words related to Covid and financial, including pandemic, crisis, finance, Coronavirus, and socio-economic. Meanwhile, the blue cluster shows a relatively less variety of words and is more diverse.
Findings

The Impact of Covid on Islamic Economics and Finance Industries

The impact of the Covid-19 pandemic has harmed several industrial sectors, one of the industries that were significantly affected by the pandemic was Islamic financial institutions, namely the banking industry. Samhan (2020), in his research found that the Covid-19 pandemic harmed Islamic financial institutions. Including rental and sales contracts because customers cannot pay credit installments. In response, the central bank then asked Islamic banks to postpone the installments for a certain period by adjusting to the customer's condition. However, if this happens in the long term, it will harm the banking industry.

Another study conducted on the banking sector, namely Hasan (2020) stated that during the Covid-19 pandemic, Islamic banking is projected to experience three possible risks: financing risk, asset decline risk, and tightening profit-sharing system. However, compared to conventional banking, Islamic banking is more flexible in dealing with crises. Furthermore, the research conducted by Mateev et al. (2021) on the “Competition, Capital Growth and Risk Taking in Emerging Markets: Policy Implications for the Banking Sector’s Stability during the Covid-19 Pandemic” shows that banks tend to have higher capital ratios when operating in a more competitive environment. Credit risk has a significant and positive effect on IB’s capital ratio, while competition is limited in determining their capital level.

Not only attacking the banking industry sector, but the Covid-19 pandemic has also affected the capital market industry. Zaimovic and Dedovic (2021), in their research, found that one of the impacts of the Covid-19 crisis is an increase in stock market volatility. Zulfitria et al. (2020) found that during the 21 days since the government announced the Covid-19 outbreak for the first time in 2019, there was a significant negative effect on ISSI and III.

In addition to Islamic banking and the Islamic capital market, other industries such as microfinance and halal tourism have also been affected by Covid-19. In their research, Hidayat et al. (2020) found that one of the sectors that were significantly affected by the Covid-19 pandemic was Islamic microfinance institutions (IMFI), especially in Indonesia, which was in East Java Province. Furthermore, another industry most affected by Covid-19 is tourism, Purba et al. (2021) have researched the impact of the Covid-19 pandemic on the tourism sector in Indonesia. The study results show that the Covid-19 pandemic has harmed the tourism sector in Indonesia and has negative implications for Indonesia's GDP. According to El-Gohary (2020), in his research explaining the impact of the Coronavirus on halal tourism, most countries have suspended all inbound and outbound flights for halal tourism. The suspension of inbound and outbound flights caused a lot of direct and indirect losses to all halal tourist destinations.

Conclusions and Recommendations

Conclusion

This study tries to evaluate the impact of Covid-19 on the Islamic economics and finance industry using text analysis by reviewing 47 documents from 2020-2021 using the Scopus database. The conceptual structure of R 'Biblioshiny’ provides the network and the main research themes. We have identified two research networks in the Islamic economics and financial industry literature using co-occurrence networks. These results indicate that the halal industrial sector has dominated research with the keyword "Covid and Islamic Economics.” In addition, the research network consists of "Covid-19", "Islamic finance", "Islamic economics", and "pandemic.”

For conceptual structure, this research has spread thematic maps to place themes and subthemes on the graph and divided them into four clusters. The upper left quadrant is a highly developed and isolated theme of epidemics, media, impact, Fintech, Covid, and Islam. At the same time, the lower left quadrant represents emerging or declining themes. In this study, none of the themes is included in this quadrant. At the same time, the upper right quadrant is a motor theme consisting of perspective, Corona, effects, implications, banking, and policies. And lastly, the lower right quadrant is the primary and transverse theme consisting of Covid, pandemic, finance, Islam, finance, country, Coronavirus, and easing.
Furthermore, based on the results of a review of several studies, it was found that the Covid-19 pandemic impacted the Islamic economy and financial industry. Since Covid-19 emerged at the end of 2019, this virus has caused fundamental changes in consumer behavior, economies, and industries worldwide, including the finance and tourism industries.

For Islamic financial institutions, the Coronavirus harms rental contracts and forward sales contracts because clients cannot pay the installments. For Islamic banking, the Coronavirus causes three possible risks: financing risk, asset decline risk, and the risk of tightening the profit-sharing system. Another sector that has been affected by the Coronavirus pandemic is the capital market, which increases the volatility of the stock market.

In addition to Islamic financial institutions, banking, and the Islamic capital market, one of the sectors significantly affected by the Covid-19 pandemic is the Islamic microfinance institution (IMFI) in East Java Province. Furthermore, tourism is one of the industries most affected by Covid-19, especially in Indonesia, and has negative implications for Indonesia's GDP.

**Recommendation**

From the results of these conclusions, there are several recommendations that the authors propose:

1. For Islamic financial institutions, there are several ways for Islamic financial institutions to overcome the negative impacts of the pandemic, such as allowing Islamic banks to use mandatory cash reserves and providing compensation to Islamic financial institutions by the government. Meanwhile, regulatory authorities must improve financial stability and strengthen policies for the Islamic banking sector. In addition, Islamic banks must understand the risks to ensure their plans during the Covid-19 pandemic.

2. For financial markets, especially investors, it is necessary to examine fundamental sectors that have the potential to recover and grow well after the market rebounds. In addition, the role of portfolio managers and investors is needed in designing cross-sector hedging strategies. Policymakers should also design policies to reduce market volatility during the Covid-19 period.

3. For other industrial sectors such as Islamic micro finance institutions and halal tourism, IMFI must adjust conditions and use appropriate strategies, as well as for the government to simplify the procedure for granting subsidy profit margins to IMFI, so it is hoped that this policy will be beneficial to both parties, namely IMFI and customer.

4. For further researchers, it is hoped that the results of this study can provide recommendations to researchers to explore further research related to this topic. In addition, future researchers are expected to use more research indicators, research periods, and research object countries so that they can be more beneficial to the community.

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