

Islamic Financial Technology Sentiment Analysis: A SentiStrength Application

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This research was conducted to examine Islamic Financial Technology in the scope of the economy in terms of scientific research in journals published and indexed by Scopus. The method used is sentiment analysis from secondary data in the form of 66 journals published in the last five years and then processed using Ms. software. Excel 2016 and SentiStrength. The results showed that Islamic Financial Technology in the scientific literature has increased. The results of the sentiment analysis show that there is a tendency for a neutral perception in the scientific literature towards Islamic Financial Technology, with a neutral sentiment of 53%. Then followed by negative sentiment by 24%. Then the positive sentiment whose results are not much different from the negative sentiment, namely the positive sentiment of 23%. The benefit of this research is for literature material and considerations related to Islamic Financial Technology. As well as efforts to find out the threats, negative perceptions, and shortcomings of Islamic Financial Technology. In addition, to find out positive perceptions, advantages and benefits of Islamic Financial Technology.

Keywords: Islamic Financial Technology; Sentiment Analysis; Fintech

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INTRODUCTION

Islamic finance continues to pique the curiosity of the general public, both Muslims and non-Muslims, across the world (Darmansyah, Fianto, Hendratmi, & Aziz, 2020). FinTech is projected to play an important role in the growth of Islamic finance (Reuters, 2018). Furthermore, numerous elements, such as Islamic financial technology, impact the rise in the usage of technology. Higher bank efficiency as a result of decreased opportunity costs and increased customer satisfaction since consumers may access financial services at any time and from any location as long as they have access to internet services are two of these factors (Asmy, et al., 2018). FinTech also aids in increasing transparency, accessibility, and flexibility, as well as lowering risk and increasing shareholder returns (Zhang, Lu, & Kizildag, 2018).

FinTech, as a new business model in the financial industry, is expected to threaten traditional banking in four areas: market share, profitability, information system security, and client switching (PriceWaterhouseCoopers, 2016). Traditional bank consumers who convert to FinTech financing services, however, are restricted, according to Maier (2016). Furthermore, client transfers, such as customer migration from one bank to another or from one form of FinTech to another, are still often divided. (Lee, Ryu, & Lee, 2019).

In this sense, the financial services business is undergoing tremendous change as a result of the fast advancement of digital technology. FinTech service innovations have been impacted by technology advances, and they have become a hot issue among academics and government officials (Marzuki & Nurdin, 2020). Digital financial services will continue to evolve in response to shifts in consumer behavior in the future. To provide financial services, society adjusts and uses digital technologies. Currently, technology firms provide a wide range of Financial Technology solutions (Marzuki & Nurdin, 2020).

There are various perceptions about Islamic Financial Technology. Where the thing that underlies the debate is the role, advantages, and disadvantages of the development of Islamic Financial Technology. Therefore, it is important to examine the perceived value of literature publications on Islamic Financial Technology to become additional literature and as material for evaluation and consideration for the economy. As well as efforts for things that need to be evaluated from threats, negative perceptions, and shortcomings of Islamic Financial Technology itself. In addition, this research is also important to know the good sides, advantages, and positive perceptions of Islamic Financial Technology.

LITERATURE REVIEW

Islamic Financial Technology

Islamic financial technology is the use of technology to make the financial system more efficient while adhering to sharia rules (Hui et al., 2019; Oseni et al., 2016). The fatwa No. 117/DSN-MUI/II/2018 of the Indonesian Ulema Council [Indonesian Ulema Council (MUI)] defines sharia fintech as the provision of financial services based on sharia principles. In other words, Islamic fintech encompasses the use of technology in both bank and non-bank financial services (Muryanto, Kharisma, & Nugraheni, 2021).

FinTech, according to (Aaron, Rivadeneyra, & Sohal, 2020) is the use of digital technology to solve challenges related to financial intermediation. FinTech plays a major part in society and in people's everyday lives all over the world, implying that the advent of FinTech is ushering in a new age in financial services for banks (Milian, Spinola, & Carvalho, 2019). FinTech, as defined by the Financial Stability Board (FSB), is a type of technology-based financial innovation that can result in new business models, applications, processes, or products, all of which have major implications for financial markets, institutions, and financial services providers (Rasyid, 2019).

FinTech is a financial technology innovation, according to the National Digital Research Center (NDRC) (Rasyid, 2019). FinTech strives to provide easy services to the general population in terms of obtaining financial goods, facilitating transactions, and increasing financial literacy through this digital development (Marzuki & Nurdin, 2020). Social finance, insurance, wealth management, deposits and loans, and finance are the five categories covered by the global Islamic fintech framework. Enabling technologies including artificial intelligence, distributed ledger technology, security, and the cloud are all used in these services (Muryanto, Kharisma, & Nugraheni, 2021).

Research on Islamic Financial Technology has been widely studied by previous researchers such as (Aaron, Rivadeneyra, & Sohal, 2020), (Nasir, et al., 2021), (Rasyid, 2019) and others. The research Darmansyah, Fianto, Hendratmi, & Aziz (2020) show that latent factors such as intended behavior, acceptance model, and technology use all have a substantial influence on behavioral intentions to utilize Islamic FinTech. The most significant component is the latent variable "acceptance model."

While in the Afandi & Muta'ali (2019) research The PPM impact implies a trend for traditional bank clients to transfer to FinTech lending services, according to the findings. Traditional bank clients who switched to FinTech lending services had a 98.82 percent chance of switching. The findings of this study may be used by managers as a strategic step in determining the best policy for the banking sector, FinTech lending, and

regulators in Indonesia when it comes to possible consumer switching.

According to Hudaefi (2020) research, the fintech companies examined encouraged financial inclusion by, for example, supporting neglected areas like agriculture and small and micro businesses (SMEs). Furthermore, fintech businesses were discovered collecting and distributing Islamic social monies such as infaq (charity expenditure), waqf (waqf), and alms (voluntary charity). Aside from that, the corporation was discovered to be launching a charity initiative for the poor. These findings are similar in some ways to the company's efforts to support the SDGs to eliminate poverty (SDG 1) and hunger (SDG 2), as well as reduce inequality (SDG 10).

RESEARCH METHODOLOGY

This study uses data in the form of research journals and other research publications during the period 2017 to 2021 which have been published on the theme of the perception of Islamic Financial Technology in Islamic economic research and is indexed by Scopus. The methodology used in this study is a qualitative method approach with descriptive statistics, a literature study of 66 publication papers related to Islamic Financial Technology.

The approach used in this research is sentiment analysis or opinion development. Sentiment analysis is a research commonly used to measure public sentiment towards an issue theme. Sentiment Analysis is a branch of research in the Text Mining domain which began to be widely used in early 2002. Sentiment analysis is a research commonly used to measure public sentiment towards a theme. Researchers use SentiStrength software which is widely used in sentiment analysis research.

Simply put, text analysis is meant for word processing and does not process numbers. Sentiment analysis consists of three main subprocesses, namely: Subjectivity Classification, Detection Orientation, and Holder's Opinion & Target Detection. To date, most of the research in the area of sentiment analysis has been devoted to English because there are so many tools/resources for English. Some frequently used sources for sentiment analysis are SentiWordNet and WordNet. The basic task in sentiment analysis is to classify the polarity of the text at the level of documents, sentences, or features and aspects, whether the opinions expressed in documents, sentences, and feature entities have positive, negative, or neutral aspects.

Data in the form of trends in the development of the number of publications on Islamic Financial Technology theme papers and top authors who are the locations of research objects related to published articles were analyzed using Microsoft Excel 2016. As for measuring the sentiment map on the results of the Islamic Financial Technology perception questionnaire,

researchers used SentiStrength software which was widely used. used in sentiment analysis research.

RESULT AND DISCUSSION

Meta-Analysis

The author tries to calculate the sentiment of published journals that discuss Islamic Financial Technology. As is known, sentiment analysis is a research commonly used to measure public sentiment towards a theme. As a secondary data source, the research was conducted on 66 literatures. The tool used in this research is SentiStrength as a tool to process data obtained from Scopus indexed published journals. Then the results obtained are opinions which are classified into 5 types of ratings, namely opinions that are positive (very good), positive (good), neutral (neutral), negative (bad) and high negative (very bad). The results of sentiment analysis on Islamic Financial Technology which are divided into 5 types of categories can be seen in the following figure:

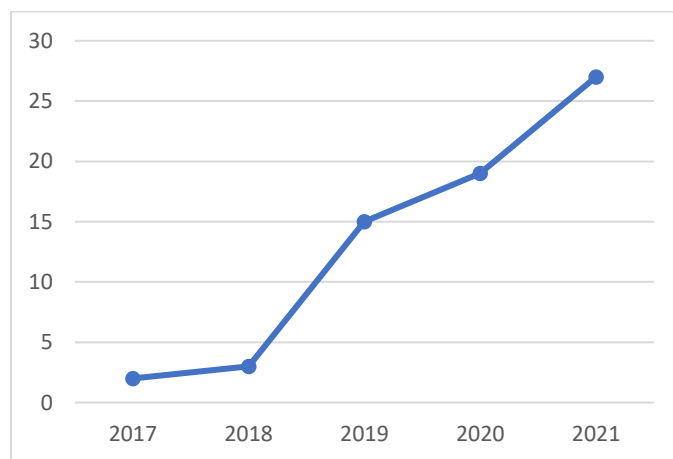


Figure 1: Number of Islamic Financial Technology Perception Theme Papers

Table 1: Number of Islamic Financial Technology Perception Theme Papers

Years	Number of Articles
2017	2
2018	3
2019	15
2020	19
2021	27
Total	66

Based on the tables and graphs above, there is a tendency for papers published with the theme of Islamic Financial Technology to increase. Where almost every year there are publications indexed by Scopus. There was a significant increase in 2018 to 2019. It was also found that there was no decrease in Scopus indexed publications in the last five years from 2017 to 2021. Scopus indexed publication data related to Gold

Currency used in this study amounted to 66 papers in the last five years, namely 2017 to 2021.

Sentiment Analysis

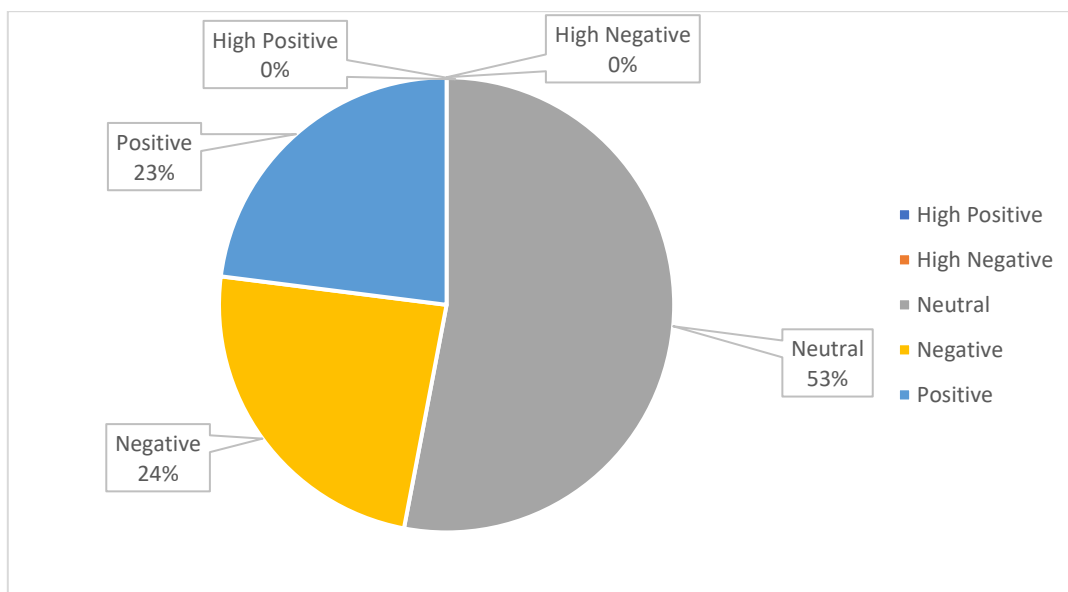


Figure 2: Sentiment Analysis

From the picture above, it can be seen that the existence of Islamic Financial Technology in the published economic literature indexed by Scopus is quite a lot and has various sentiments according to the SentiStrength grouping, namely the very good category (high positive) at 0%, then positive sentiment as much as 23%, bad sentiment (negative) as much as 24%, very bad sentiment (high negative) 0% and the rest have a neutral sentiment (neutral) 53%.

Sentiment results are obtained from the opinions expressed by researchers in their research, then the words in the form of written text are sorted from very negative intervals (-5) to very positive (5) with a value of 0 being neutral. The opinion score of the sentence submitted by the respondent is calculated by adding up the sentiment score of each word listed in SentiStrength. Positive sentiment is the opinion of researchers who are positive and tend to be optimistic in responding to the existence of Islamic Financial Technology by looking positively at the existence of Islamic Financial Technology and supporting the development of Islamic Financial Technology. While negative sentiment is a negative opinion and tends to provide criticism in reviewing the development of Islamic Financial Technology, or in other words its existence is still not optimal and requires improvement, and states that Islamic Financial Technology has not been applied professionally for various reasons.

These data indicate that the majority of researchers have a more neutral sentiment in responding to the existence of Islamic Financial Technology. The next sentiment that is quite a lot is negative sentiment. Then the next biggest portion is positive sentiment.

There are no proportions for High negative and High Positive.

FINDING

Table 2 summarizes the research findings, which cover the main characteristics that influence positive and negative public sentiment, based on 66 data articles published on the topic of Islamic Financial Technology over the past Five years.

Positive	Negative
Islamic Fintech finances the agricultural sector and small micro businesses.	Inadequate regulation
Contribute to social funds (infaq, waqf, Sadaqah)	Complicated licensing procedures
Reduce poverty	Misuse of fintech for terrorism financing
Reducing social inequality	The rise of illegal fintech businesses
Easy to Serve Customers	Consumer disputes in the fintech sector
Fast and Cheap Information	Internet Connection Required
Guaranteed Security	Only Reaching Internet-savvy Businessmen
Fast Process	Fraud Prone
Efficient Service	High cost

The results of this study found the level of sentiment analysis of various published papers in assessing opinions about the existence of Islamic Financial Technology. Neutral sentiment dominates with the percentage yield of 53%. This shows that there is still a knowledge gap about Islamic Financial Technology. This is a challenge for every element involved in the field to increase the quantity and quality of Islamic Financial Technology. In addition, educational facilities that are suitable and easily accepted by all parties related to Islamic Financial Technology are also needed so that information and knowledge about Islamic Financial Technology can be absorbed by all elements of society.

More than half of the portion is dominated by neutral sentiment. This shows that education related to Islamic financial technology may not have spread to all circles of society, and entrepreneurs. So that literacy related to Islamic financial technology is needed. In addition, the public also assumes that there are laws that are still biased in some transactions in Islamic financial technology.

Many studies on Islamic Financial Technology have been carried out based on a literature review. Sentiment analysis provides an overview of responses and opinions about Islamic Financial Technology. However, Islamic Financial Technology is still a debate, where there are pros and cons related to it. Sentiment analysis results show that negative sentiment of 24% occupies the second largest position after neutral sentiment. This shows that the negative perception of Islamic Financial Technology is quite high. This means that there are still many pessimistic perceptions and do not agree with Islamic Financial Technology.

This negative perception is based on the risks, shortcomings and weaknesses of Islamic Financial Technology itself. Where the reasons include inadequate regulation, complicated licensing procedures, abuse of fintech for terrorism financing, as well as the rise of illegal fintech businesses, as well as consumer disputes in the fintech sector (Muryanto, Kharisma, & Nugraheni, 2021). In addition, another weakness of Islamic financial technology is that an Internet Connection is required. If there is no internet, it cannot operate or transact. In addition, Islamic financial technology also only reaches entrepreneurs who understand the Internet, where entrepreneurs who do not understand the Internet cannot access it. Islamic Financial Technology is also prone to fraud and has high costs as well.

Positive perceptions of Islamic financial technology have a portion that is not much different. where the positive proportion is 23%. This is due to an optimistic and positive view of the existence of Islamic financial technology as well as the advantages or advantages of the existence of Islamic financial technology itself. Where Islamic Financial Technology has a role in financing the agricultural sector and also

financing small micro businesses (Muryanto, Kharisma, & Nugraheni, 2021). In addition, Islamic financial technology also has a role in contributing to social funds such as infaq, waqf, and alms (Muryanto, Kharisma, & Nugraheni, 2021).

Islamic Financial Technology is considered to play a role in the SDGs, which can reduce poverty levels and reduce social inequality (Hudaefi, 2020). Another advantage of Islamic financial technology is that it provides convenience in serving customers, provides information easily and quickly, guarantees security, can process quickly, and also provides efficient services.

CONCLUSION

This study presents an overview of the meta-analysis in the form of tables and graphs of the main trends in the perception of Islamic Financial Technology in the last 5 years, from 2017 to 2021. The content analysis is carried out by the number of publications per year. The results show that the quantity of research publications on Islamic Financial Technology has increased in the last 5 years so that it has the potential to continue to be studied and developed.

Regarding sentiment analysis, the assessment of Islamic Financial Technology from various literatures indexed by Scopus shows a neutral sentiment of 53%, while 23% shows positive sentiment and 24% shows negative sentiment. This shows that the scientific literature shows variations in sentiment which are dominated by neutral sentiment, followed by negative sentiment, then positive sentiment.

It should be noted that the purpose of this research is to present an overview of the perception of Islamic Financial Technology from the Scopus indexed scientific literature, but the limitation is only on publications from 2017 to December 2021. The benefit of this research is for literature and considerations related to Islamic Financial Technology. As well as efforts to find out the threats, negative perceptions, and shortcomings of Islamic Financial Technology. In addition, to find out positive perceptions, advantages and benefits of Islamic Financial Technology. This research is conducted using specific meta-analytic indicators and sentiment analysis so that the reader can get a general representation of the most significant data. However, the results presented are still dynamic and may change over time, with new trends emerging or variables increasing and decreasing in the future.

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