

Islamic Crowdfunding: A Twitter Sentiment Analysis

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This research aims to measure public sentiment related to Islamic crowdfunding on the Twitter social media platform. The research method involves the extraction and classification of tweet data using a Python Library called VADER (Valence Aware Dictionary and Sentiment Reasoner). The research utilized tweet data posted in the past one year. The results showed fluctuations and decreases in the number of tweets discussing Islamic crowdfunding. Word cloud analysis on keywords shows that in positive sentiments, words such as "crowdfunding platform," "crowdfunding impact," "crowdfunding," "Islamic finance," and "inclusivity Islamic finance" dominate the visualization. Overall, the majority of tweets expressed a positive attitude towards Islamic crowdfunding, with 44.0% positive sentiment. A total of 47.2% of tweets showed neutral sentiment, while 8.7% showed negative sentiment. These results illustrate that people generally give positive support to the concept of Islamic crowdfunding, although there is still a small proportion of tweets that express less favorable views. This research provides valuable insights into people's perceptions and responses to Islamic crowdfunding in cyberspace.

Keywords: Islamic crowdfunding, Sentiment, Twitter, VADER

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INTRODUCTION

The recent rapid growth of businesses has increased the need for greater funding. Limited banking support for micro, small and startup businesses, due to risk and lack of ability to provide collateral, has created a significant gap between these businesses and larger, more established businesses. This difficulty triggers various investment mechanisms that go beyond conventional investment patterns and financial support from banking institutions. (Andaleeb & Mishra, 2016; Marzban et al., 2014). In order to overcome this gap, crowdfunding is present as a digital-based funding innovation without collateral. Crowdfunding is a collaborative strategy that connects three main parties, namely investors, entrepreneurs, and platforms as intermediaries. A platform, which is an online community, serves as a link between investors and entrepreneurs globally. (Achsien & Purnamasari, 2016).

The crowdfunding process is a method used by communities, organizations, and businesses, to support or refinance their business activities. (Wahjono et al., 2015). In its implementation, crowdfunding utilizes the internet as a means to interact with thousands or even millions of potential funders. Fund seekers generally profile their projects on specialized websites, and then use social media along with their social networks, such as friends, family, and coworkers, to raise funds. In other words, crowdfunding is a method of raising capital that involves collaboration from friends, family, customers, and individual investors. This approach relies on the collective participation of a large number of individuals, mainly through crowdfunding platforms and social media, to achieve a broader scope. (Fundable, 2024).

There are three main types of crowdfunding, namely Donation-Based, Loan-based, and Equity-based. (Lawton & Marom, 2013). In Donation-Based crowdfunding, individuals invest because they support the project's cause without expecting a concrete material or financial return. Rewards may be given to donors, such as thank-you notes on album covers, event tickets, regular news updates, or other free gifts. The main motivation of donors in this type of crowdfunding is social or personal, and they do not expect financial rewards. Meanwhile, in Loan-based crowdfunding, investors provide funds to borrowers with the expectation of returning the funds along with interest. This type is also known as peer-to-peer (p2p) lending, which allows borrowers to obtain funds without involving traditional financial institutions. The return of funds is financial, but investors can also benefit from

their contribution to the success of the idea or project they are backing. The third type of crowdfunding is Equity-based crowdfunding, where investors contribute funds in exchange for shares or a small stake in a business, project or venture. As with other types of investments, the value of the shares can rise or fall depending on the success of the project or business. (Rees-Mogg, 2013).

In recent years, crowdfunding has become an increasingly popular global phenomenon and proved to be a lifesaver for many businesses, especially during the pandemic. (Achsien & Purnamasari, 2016). This phenomenon is reflected in the global transaction value of crowdfunding in 2023, which reached \$100 billion, showing a growth of 1.8% compared to the previous year. This projection shows an upward trend that is expected to continue in 2024. (Statista, 2023).

In recent years, Islamic finance and Shariah-based business concepts have become increasingly relevant. Islamic crowdfunding is emerging as a solution, with Islamic crowdfunding platforms being a mechanism that funds halal projects and products according to Islamic provisions. Funding in Islamic crowdfunding does not only pay attention to the halal or haram aspects of projects and products, but also the entire funding process must comply with sharia principles. This concept is presented as an alternative for small companies seeking funding, in addition to options from banking institutions. (Marzban et al., 2014). Islamic crowdfunding has the potential to be the next financial innovation in the Islamic finance industry. Its goals and philosophical underpinnings are in line with conventional crowdfunding, namely building communities, encouraging risk sharing, democratizing wealth, and allocating capital into real economic activities. Therefore, Islamic crowdfunding can be defined as a platform specifically designed to comply with Shariah principles. Islamic crowdfunding is further explained as the use of small amounts of funds obtained from a large number of individuals or organizations to fund projects, business or personal loans, and other needs through an online web-based platform in accordance with sharia principles. (Achsien & Purnamasari, 2016).

Islamic crowdfunding refers to a financial model that adheres to Islamic principles and guidelines while using a crowdfunding platform to raise funds for various projects or ventures. It operates within the framework of Shariah law, which prohibits certain elements such as interest (riba), uncertainty (gharar), and investing in businesses considered haram (forbidden) according to

Islamic teachings, such as those involving alcohol, gambling, or other unethical practices.

Islamic crowdfunding serves as a means for entrepreneurs, startups, and individuals to raise capital while adhering to Islamic principles. It provides an avenue for Muslims to invest in projects that align with their ethical and religious beliefs, fostering financial inclusion within the boundaries of Shariah-compliant finance.

With its potential, Islamic finance needs to further explore crowdfunding as it is mathematically proven to have an impact on the real sector. While there is skepticism in the sector as to whether crowdfunding requires much revenue or not, Islamic finance should take an aggressive approach to penetrate the market and keep up with the momentum (Saiti et al., 2018). (Saiti et al., 2018). Islamic crowdfunding has some basic characteristics that distinguish it from conventional crowdfunding, including, Islamic crowdfunding only invests only in halal projects, the absence of interest rates, the prohibition of gambling and speculation (*riba*, *maysir*, and *gharar*), and the existence of a sharia supervisory board. For Islamic crowdfunding, there is a formal certification process to ensure the platform's compliance with sharia. In addition, as with Islamic banks, a Sharia Supervisory Board may also play a role as part of its governance. (Achsien & Purnamasari, 2016).

Along with the increasing use of Islamic crowdfunding, this research tries to measure public sentiment towards Islamic crowdfunding, and this will be implemented through analyzing tweet data available on the Twitter social media platform. The approach used includes monitoring the development of tweet data, identifying keywords that often appear in conversations, and analyzing the polarity of sentiments related to Islamic crowdfunding. The sentiment analysis method used in this research includes three main classifications, namely positive, negative, and neutral. To carry out this analysis, Python Library is used as a tool. By using this approach, this research seeks to provide a holistic understanding of people's views on Islamic crowdfunding. By exploring the positive aspects, advantages, potential, and benefits that arise from positive sentiment data, this research can provide in-depth insights into how Islamic crowdfunding is accepted and appreciated by the community. On the other hand, by identifying potential weaknesses and threats through negative sentiment analysis, this research can help in understanding the challenges that may be faced by Islamic crowdfunding and contribute to

relevant parties to take appropriate actions. Thus, it is expected that the results of this research will make a meaningful contribution to relevant parties in taking strategic steps to strengthen the Islamic crowdfunding ecosystem. In addition, raising awareness and gaining further support from the public regarding Islamic crowdfunding.

METHOD

This research is a qualitative study with a sentiment analysis approach, also known as opinion mining. This approach aims to automatically evaluate views, feelings, judgments and attitudes towards a target, such as products and services (Cambria et al., 2013; Liu & Zhang, 2013; Ravi & Ravi, 2015; Vinodhini & Chandrasekaran, 2012). The main data source for this study was Twitter tweets, which were collected automatically using Twitter's official application programming interface (API). Data collection was carried out in the time span of January to December 2023, resulting in more than 100,000 tweets related to the topic of Islamic crowdfunding. A web scraping technique was also used to retrieve data from the Twitter website.

The selection of Twitter as a social media research platform was based on the availability of relatively accessible data. Twitter has unique characteristics in the social media realm with two main features: public messaging and short message length limits. This limit on message length gives it an advantage in conducting faster analysis compared to other social media platforms. In addition, Twitter facilitates research that includes both individual and media analysis within one analytical framework (Vargo et al., 2014).

This research uses Python Library software called VADER (Valence Aware Dictionary and Sentiment Reasoner) to perform sentiment analysis on tweet data related to Islamic crowdfunding. VADER is a lexicon-based sentiment analysis tool, which has been specially adapted to handle sentiments commonly found in the context of social media (Liu, 2012). The use of VADER Python in this research focuses on two main objectives: first, to classify the sentiment in tweets into three main categories, namely positive, negative, and neutral; second, to identify the keywords that appear most frequently in tweets discussing the topic of Islamic crowdfunding.

The composite sentiment score, which is calculated from the lexicon scoring by VADER, gives an idea of the overall level of sentiment in each tweet. This score is normalized to range between -1 (strongly

negative) to +1 (strongly positive). This approach helps in determining the polarity of the sentiment, i.e. the extent to which the tweet is positive or negative, and also measures the intensity of the emotions expressed. Emotion intensity is calculated by dividing the sum of the positive, negative, high positive-negative, and neutral elements contained in the tweet, with the total reaching 1 (Roe et al., 2021).

VADER evaluates the polarity of the text (positive, negative, neutral) and provides a sentiment score for the input text. It considers both the individual words and their context to determine the sentiment expressed in a piece of text. VADER also takes into account the intensity of emotions conveyed by words (e.g., extremely positive or slightly negative) to provide a more nuanced sentiment analysis.

In addition, VADER was also used to identify the most significant keywords in tweets related to Islamic

crowdfunding. This analysis provides further insight into the words that appear frequently and can help further understand the focus of conversations on the Twitter platform on this topic. By using this sentiment analysis tool, this research seeks to present more comprehensive results regarding people's attitudes, perceptions and views towards Islamic crowdfunding. This approach method has been adopted in several studies in the field of Islamic economics and finance, such as Alamoodi et al. (2021), Maulida & Rusydiana (2022), Maliha (2023), Hakim et al. (2022), Hassan et al. (2022), Rusydiana & Marlina (2020), and Maulida & Hakim (2022).

RESULT AND DISCUSSION

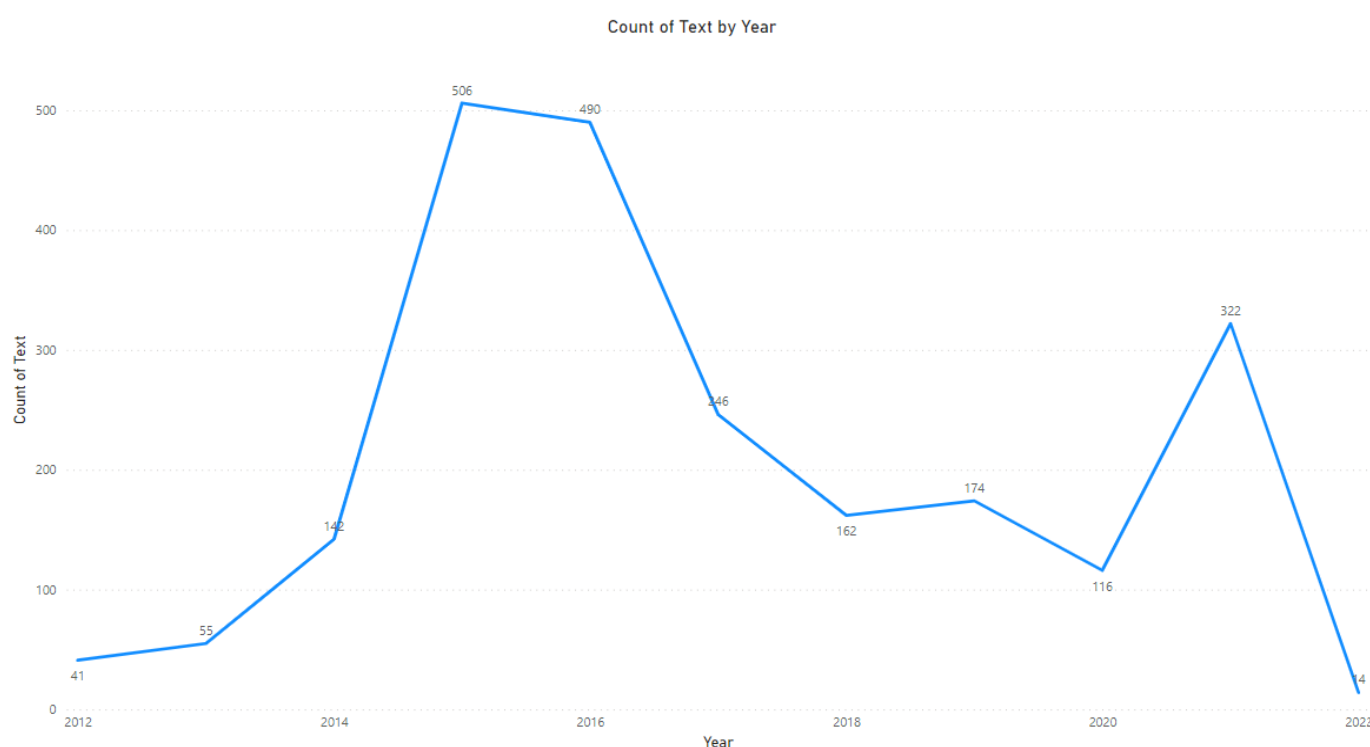
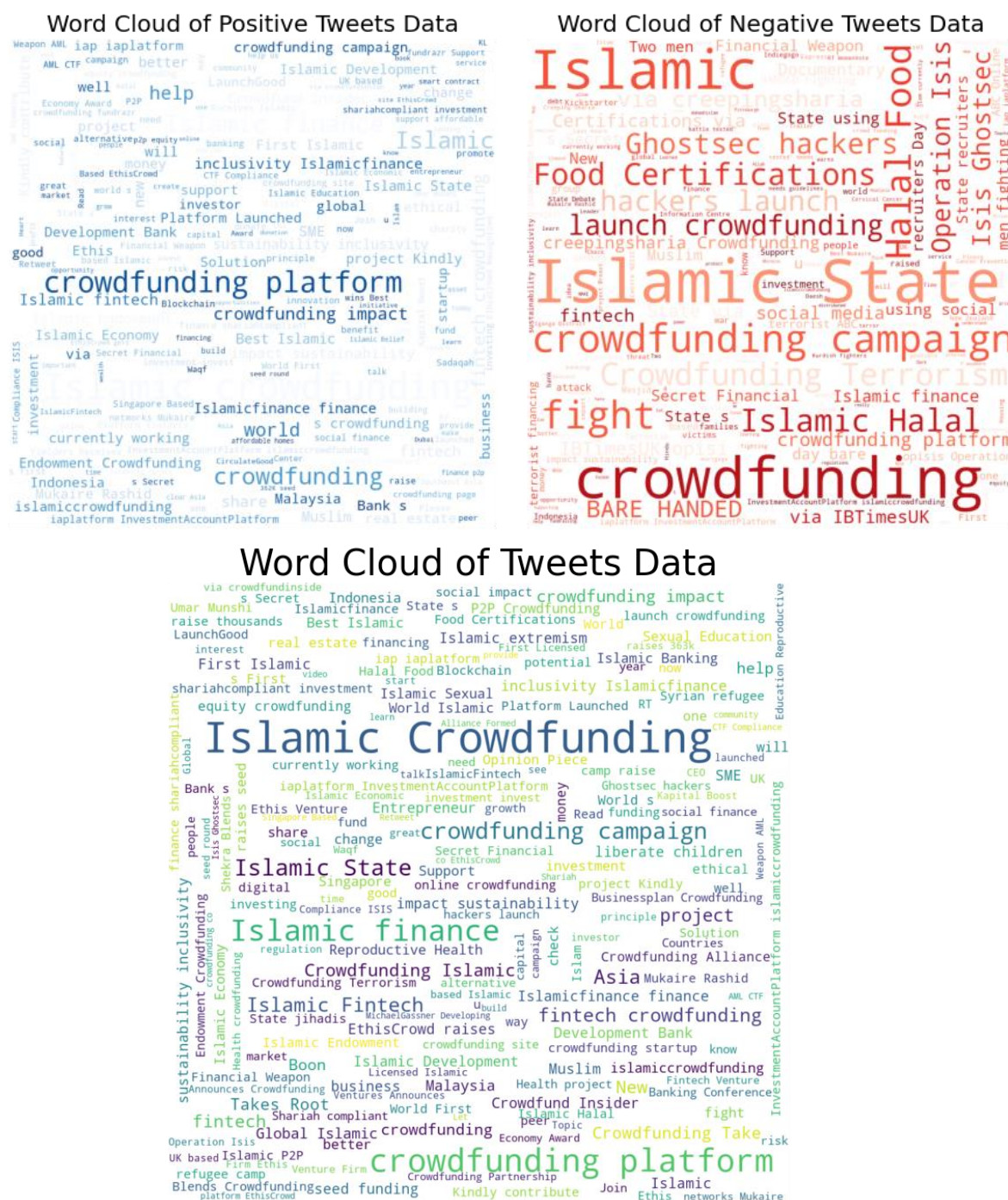


Figure 1. Count of Text by Year

The graph above illustrates how the number of net tweets about Islamic crowdfunding has changed every year during the research period. From the graph analysis, it can be seen that the number of clean tweets related to Islamic crowdfunding fluctuates significantly from year to year. For example, it can be observed that in 2015, there was a peak in the number of tweets that reached a maximum of 506 tweets, specifically related to

the topic of Islamic crowdfunding. However, after reaching this peak, there was a sharp decline in the following year. This decline reflects the change in interest or focus of conversations on social media platforms (in this case twitter platform) related to Islamic crowdfunding. Therefore, the graph reflects the changing dynamics of public attention and conversation on the topic over time.



The visualization of keywords in the tweet data on Islamic crowdfunding provides a deep understanding of the patterns and trends of social media conversations on this topic. In the context of the word cloud of positive tweets, where key words such as "crowdfunding platform," "crowdfunding impact," "crowdfunding," "Islamic finance," and "Islamic finance inclusivity" dominate, it can be inferred that when users express positive views on Islamic crowdfunding, their focus tends to be on elements such as crowdfunding platform, positive impact, and Islamic finance inclusivity.

On the other hand, in the word cloud of negative tweets, with key words such as "Islamic state," "crowdfunding campaign," "Islamic halal," "halal food," and security-related elements such as "GhostSec hackers" and "ISIS operations," it can be seen that there is an association between controversy or negative issues and Islamic crowdfunding. The presence of words such as "fight" and "bare-handed" indicate an element of tension or conflict that may be associated with this conversation.

Meanwhile, when looking at the keyword visualization of the overall tweet data, it can be seen that

"Islamic crowdfunding," "crowdfunding platform," "Islamic finance," and "Islamic fintech" take center stage. This shows that the general discussion about

Islamic crowdfunding involves a wide range of issues, including platforms, aspects of Islamic finance, and technological innovations in Islamic finance.

Sentiment Polarity on Tweets Data

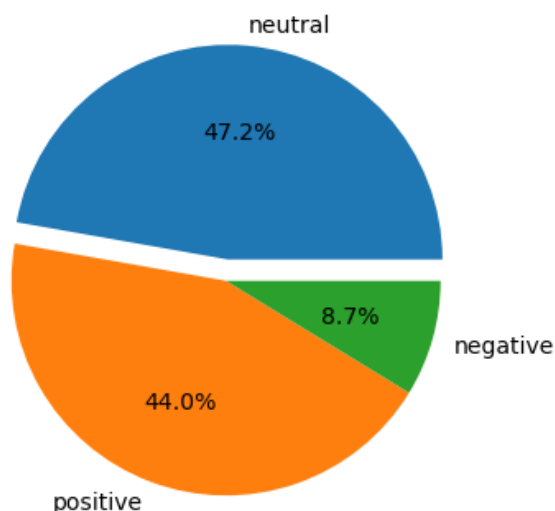


Figure 3. Sentiment Polarity on Tweets Data

The pie chart above reflects the sentiment polarity in the tweet data related to Islamic crowdfunding. These sentiments were analyzed from tweets sent by Twitter users during the period 2012-2022 and classified using the VADER algorithm, which ranks positive, neutral, and negative intervals automatically. From the analysis, neutral sentiment dominated with a percentage of 47.2%. This shows an attitude that does not show partiality, often reflects information without clear opinions, only conveys facts or data related to Islamic crowdfunding. Positive sentiment is in second place with a percentage of 44%. This sentiment shows that the majority of Twitter users tend to positively welcome and support the existence of Islamic crowdfunding, reflecting optimism towards this concept. On the other hand, negative sentiment reached 8.7%, indicating that a minority of Twitter users expressed critical views or negative attitudes towards Islamic crowdfunding. This could include concern, criticism or disapproval of certain aspects of the Islamic crowdfunding concept.

Findings

The results show that neutral sentiments dominate people's perceptions of Islamic crowdfunding. Nonetheless, the main findings show the dominance of positive sentiments compared to negative sentiments in the tweet data related to Islamic crowdfunding. Analysis

of the tweet data (Appendix 1) revealed several tweets highlighting the serious contribution and commitment of Islamic organizations around the world to the practice of Islamic crowdfunding. For example, IsDB has launched a revolutionary sharia-based crowdfunding platform innovation that aims to support SDG 11. According to Isaac & Rahman (2021), there are more than 1,478 crowdfunding platforms around the world, some of which are sharia-based. Islamic crowdfunding is expected to be a solution for micro, small, and medium enterprises, as well as new businesses, compared to formal financial intermediaries. (Roro et al., 2019). This finding shows that there is positive belief and interest in the community towards the concept of sharia-based crowdfunding.

Islamic crowdfunding was born from a shirkah contract so that the ratio of profit sharing is subject to the provisions of the shirkah contract. In DSN-MUI fatwa No. 114 of 2017 concerning syirkah contracts, profits are divided according to the agreed ratio or proportionally. In Islamic crowdfunding, there is cooperation between the parties to the business, namely the profits and losses are borne together. Profit results in musyarakah are also regulated, as well as in mudarabah, according to the principle of profit sharing (profit or principle). The justice expected from the application of the principle of proportionality is to prevent injustice felt by the parties involved. All parties

must be willing and feel that the distribution of results is in accordance with a fair measure. Therefore, the transactions that occur are expected to strengthen ukhuwah (brotherhood) between the parties involved in Islamic crowdfunding. Unethical practices, such as fraud, dishonesty, covering up defects in goods, or reducing scales, are not justified in this context. Even small things such as unauthorized use of goods are considered as actions that are not in accordance with the principles of fairness in Islamic crowdfunding. (Roro et al., 2019).

In the opposite context, negative sentiments were also reflected in a number of tweets related to Islamic crowdfunding, which are described in more detail in Appendix 3. Criticism of funding terrorism activities using halal certification fees was highlighted in several tweets. Twitter users expressed concern and criticism of the potential misuse of funds in the context of Islamic crowdfunding. In addition, some users also highlighted that global regulations and immature guidelines pose serious challenges for the Islamic crowdfunding sector, which is still in its infancy. This understanding is in line with research by Saiti et al. (2018) which shows that, of the various issues related to crowdfunding, regulatory issues are considered the main challenge. Judging from the regulations, Islamic crowdfunding faces potential and challenges under certain conditions. For example, OJK Regulation No. 77 of 2016 requires risk mitigation in credit risk, where crowdfunding organizers must take out credit insurance or credit guarantee. However, since Islamic crowdfunding utilizes mudharabah, there is still a big question on how this model can guarantee returns in accordance with legal principles.

This is also relevant to research Ishak & Rahman (2021) which states that although Islamic crowdfunding can be an efficient platform through financial technology (Fintech), mudharabah is not a completely ideal instrument, especially for equity-based Islamic crowdfunding due to the high risks associated. These risks involve fraudulent projects, insufficient regulations to protect investors' money, and the mudharabah structure that takes the form of a profit-sharing contract. It is also important to note that the Malaysian Market Guidelines regulate fundraising and set boundaries in the peer-to-peer crowdfunding business. These guidelines create an underlying perception that peer-to-peer crowdfunding should not overlap with existing banking businesses. Unfortunately, in some cases, these regulations can be perceived as barriers for peer-to-peer businesses to make greater contributions to society in

supporting real economic development. (Saiti et al., 2018).

The importance of risk mitigation, investor protection, and transparency in the mudharabah contract structure emphasizes the need to continue to strengthen and improve the Islamic crowdfunding regulatory framework. As a financial innovation, Islamic crowdfunding has great potential to support real economic development, but it needs concrete steps to overcome the challenges it faces. Thus, the development of Islamic crowdfunding can be one of the sustainable solutions and in accordance with sharia principles in supporting the global economy.

CONCLUSION

This study aims to measure public sentiment related to Islamic crowdfunding on the social media platform Twitter. The results showed fluctuations and decreases in the number of tweets discussing Islamic crowdfunding. Word cloud analysis on keywords shows that in positive sentiments, words such as "crowdfunding platform," "crowdfunding impact," "crowdfunding," "Islamic finance," and "inclusivity Islamic finance" dominate the visualization. On the other hand, in the negative sentiment, words such as "Islamic state," "crowdfunding campaign," "Islamic halal," and security-related elements such as "GhostSec hackers" and "ISIS operations," appeared more frequently. Overall, the majority of tweets expressed a positive attitude towards Islamic crowdfunding, with 44.0% positive sentiment. A total of 47.2% of tweets showed neutral sentiment, while 8.7% showed negative sentiment. These results illustrate that people generally give positive support to the concept of Islamic crowdfunding, although there is still a small proportion of tweets that express less favorable views. This research provides valuable insights into people's perceptions and responses to Islamic crowdfunding in cyberspace.

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APPENDIX

Appendix 1 Positive Sentiment Tweet Text

No.	text_clean	vader_label_clean	Retweet	Like Count
1	If you'd like to donate to the victims, the New Zealand Islamic Information Center has set up a crowdfunding site to raise funds for them and their families.	positive	93	279
2	What is Muslim 3D? It is a pick up'n play, one-stop solution designed to educate everyone - Muslims & Non-Muslims - about Islamic lifestyle, rituals & history! Check out the teaser video for our upcoming crowdfunding campaign on LaunchGood more on	positive	79	232
3	Watch our crowdfunding video to produce new episodes of our Islamic cartoon and know more about what we hope to achieve. Please donate, like, comment and retweet. Jazak Allahu Khayran!	positive	74	158
4	A crowdfunding campaign is seeking to raise \$20k for repairs and security to the Islamic Center in Escondido after an arson incident early Sunday.	positive	63	115
5	The NGOs of US who were crowdfunding money to help Indians during 2nd wave from US are now crowdfunding money in India to help people in Afghanistan. Org name - Islamic Relief USA this time!!! Please tag the appropriate authorities and spread the word.	positive	61	210
6	The Medical Students Union at the Islamic University of Gaza has launched a crowdfunding campaign to help medical students pay their remaining tuition fees and graduate as physicians.	positive	48	73
7	4TH WORLD ISLAMIC ECONOMICS & FINANCE CONFERENCE...! A Great Discussion In Panel-II The participants discussed Islamic Finance, Blockchain, and Crowdfunding: Digitalization of	positive	36	45

No.	text_clean	vader_label_clean	Retweet	Like Count
	Islamic Economy Landscape. The session was great and full of knowledge. mul_wieffc2021			
8	Thinking of crowdfunding your idea? There is a great platform now... IsDB Innovate is a groundbreaking crowdfunding platform created by the Islamic Development Bank. TransformersSummit in Cambridge to reach sdg11 isdb_group	positive	34	135
9	Please RT & donate to our crowdfunding campaign to help us continue providing free legal aid to socially & economically marginalized individuals and groups. Our Bank Account details are as follows: Bank: Maldives Islamic Bank MVR: 90101-55500094-1000 USD: 90101-55500094-2000	positive	32	38
10	4th WIEFC-21 (Virtual) WELCOME TO THE HONORABLE PANELIST...! We are feeling proud to welcome Mr. Umar Munshi, Co-Founder, ETHIS Crowdfunding, Malaysia as a panelist of the 4th WIEF	positive	29	33

Appendix 2 Neutral Sentiment Tweet Text

No.	text_clean	vader_label_clean	Retweet	Like Count
1	Parents and teachers of Salihu Tanko Islamic School told BBC Hausa that they've started crowdfunding to raise the ransom stipulated by the abductors of their children. Parents said they've sold their motorcycles and other values, but are still far short of the kidnappers' demand.	neutral	268	262
2	Islamic State jihadists in Syrian refugee camp raise thousands in online crowdfunding campaign	neutral	26	28

No.	text_clean	vader_label_clean	Retweet	Like Count
3	Global Islamic Crowdfunding 2015 - An Opinion Piece From Singapore - crowdfunding	neutral	22	2
4	4TH WORLD ISLAMIC ECONOMICS & FINANCE CONFERENCE...! Panel Discuss-2 Islamic Finance, Blockchain and Crowdfunding: Digitalization of Islamic Economy Landscape To be held on 30 January 2021. Register Now: mul_wiefc2021 minhajuniversity_wiefc2021	neutral	16	18
5	EThis Targets S\$1 Million Raise at Kuala Lumpur's Global Islamic Finance Forum crowdfunding startup	neutral	14	1
6	Islamic crowdfunding co EthisCrowd raises \$363k in seed funding crowdfunding startup	neutral	14	0
7	What's happening with Bank of Baroda? Islamic Crowdfunding 🤔🤔🤔 Islamic crowdfunding follows maqasid al sharia (objectives of Islamic Law) as per their document Attn: CC Swamy39 PMOIndia narendramodi	neutral	13	7
8	Islamic crowdfunding for social-impact housing (Pt 1) startup crowdfunding	neutral	12	0
9	Lets explore Islamic Crowdfunding in today's Fintalk! Subscribe here to get more such Fintech updates: WorldBank S&P IslamicDevelopmentBank navitweet321 man3388	neutral	10	17
10	EthisKapital Claims "World's First" Licensed Islamic p2p/Crowdfunding Platform	neutral	9	4

Appendix 3 Negative Sentiment Tweet Text

No.	text_clean	vader_label_clean	Retweet	Like Count
1	A crowdfunding campaign organized by Muslim Americans raised over \$130K for the families of 11 people killed in a Pittsburgh synagogue. The Islamic Center of Pittsburgh also offered to protect the area's Jewish services: "We just want to know what you need."	negative	305	778
2	hear space safdar talk about islamic banking. surely die call alternative is crowdfunding/crowdsourcing. of course, why did not think before this. patreon/gofundme/kickstarter literally in front of our eyes.	negative	116	429
3	"Support your local mosque. Support your local Muslim community. Support the New Zealand Islamic Information Center (NZIIC), which has set up a crowdfunding campaign for Al Noor Mosque and Linwood Mosque, the two mosques targeted in the terrorist attacks."	negative	57	109
4	Crowdfunding Terrorism Through Islamic Halal Food Certifications	negative	21	11
5	Operation Isis: Ghostsec hackers launch crowdfunding campaign in fight against Islamic State	negative	10	5
6	"The New Zealand Islamic Information Center (NZIIC) has set up a crowdfunding campaign on Launchgood with all funds raised distributed to the victims	negative	7	11
7	Crowdfunding Terrorism Through Islamic Halal Food Certifications	negative	5	4