

What Do Indonesian Think About Waqf? A Sentiment Analysis Using Machine Learning

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Abstract: *This study aims to identify the most popular topics and words in conversations on Twitter with the topic of waqf in Indonesia. This study also aims to identify the sentiments and emotions of netizens about waqf in Indonesia. This study uses a qualitative method with a sentiment analysis approach. This study used Orange Data Mining software in gathering and analyzing the data. The data used are tweets from Twitter taken from April 10, 2023, to April 24, 2023. The data were gathered by entering a keyword "Wakaf" to get 1,000 tweets. The results of the study showed that the words "Wakaf," "Masjid," and "Tanah" are the three words that most often appear in discussions on the topic of waqf on Twitter. These three words refer to the people in Indonesia, where the majority of people donate part of their wealth in the form of land designated as a mosque. On social media, Twitter is dominated by tweets with neutral sentiments shown by happy emotions, as much as 76.37% of the total tweets. Waqf management institutions can increase the intensity of using social media in publicizing activities related to collecting waqf donations. It also able in managing and distributing the benefits of waqf funds to mauquf alaih as a form of transparency to increase the credibility of waqf management institutions.*

Keywords: *Waqf; Sentiment Analysis; Twitter; Machine Learning; Orange Data Mining*

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INTRODUCTION

Islamic philanthropy is a sector that has an important role in the socio-economic development of society in Indonesia (Medias et al., 2021; Ratnasari et al., 2023).

In Islam, philanthropy is manifested in several types of actions, such as Zakat, Infaq, Sadaqah, and Waqf or also commonly known as ZISWAF (H. Usman et al., 2022). From an economic standpoint, Islamic philanthropy can have a positive impact on the welfare of recipients of ZISWAF funds through poverty alleviation (Alam et al., 2022; Hudaefi et al., 2022), job creation (Mawardi et al., 2022), economic empowerment (Mutmainah et al., 2021; Widiastuti et al., 2021) and construction of various public facilities (M. K. Khan et al., 2022; Shabbir, 2018). From a social perspective, Islamic philanthropy plays a role in realizing social services to the community through social activities (Che & Rahman, 2018) and educational services (Sulaeman et al., 2021; Widiastuti et al., 2021).

Waqf is a form of Islamic philanthropy that has enormous potential in Indonesia. On the other hand, the amount of waqf crowdfunding in Indonesia is still very far to reach its potential. Many people in Indonesia are not yet interested in channeling their donations in the form of waqf compared to other types of philanthropy (Wadi & Nurzaman, 2020). Only IDR 819.36 trillion, or around 0.45% of Indonesia's overall cash waqf potential, has been realized in terms of cash waqf receipts (BWI, 2021). Indonesian Ministry of Religion (2020) noted that there are only 161,579 hectares of registered waqf lands dispersed throughout 366,595 locations. Limited public awareness of waqf in Indonesia contributes to the limited realization of the potential of waqf in Indonesia (Laallam et al., 2020; Mutmainah et al., 2021). Public trust in waqf institutions is still poor as a result of the widespread perceptions of the openness and accountability of these organizations (Abu Talib et al., 2020). Indonesian Waqf Council (BWI) (2020) reported that population literacy index survey in Indonesia yielded a score of 50.48, placing it in the poor group. The community's choice for cash waqf receives only 12% of the vote.

According to language etymology, Waqf means to hold back (Badan Wakaf Indonesia, 2019). Waqf is a form of philanthropy that retains material objects (Al 'Ain), manages, then distributes benefits to beneficiaries of waqf benefits or mauquf alaih. Waqf is unique because it can be used for anything and anyone without being limited to anything (UNDP & Baznas, 2018). In general, the form of using waqf is widely used for the construction of mosques (Pikoli et al., 2021; M Usman & Ab Rahman, 2021), graves (M. T. Khan, 2015), dan Islamic boarding schools (Muhammad Usman & Ab Rahman, 2023).

In its development, the government, academics, and waqf management institutions (nazhir) have innovated by launching various forms of waqf innovation to attract the attention and intention of the community to support waqf development. Some examples of waqf innovation include cash waqf (Berakon et al., 2022; Kasri & Chaerunnisa, 2022), stock waqf (Abdullah & Ismail, 2017), cash waqf linked sukuk (Mutmainah et al., 2022). Cash waqf for example has a flexible and universal nature. Cash waqf can be donated in small amounts to attract millennials to donate in the form of cash waqf (Wadi & Nurzaman, 2020). The cash waqf principal can be used as a source of financing for developing state

assets. Meanwhile, the benefits of cash waqf can be used to fund the social funding needs of the broader community in the education sector (Muhammad Usman & Ab Rahman, 2023). Cash waqf can also be developed by providing training and skills related to beneficiary businesses and as alternative financing for MSMEs (Majid, 2021).

However, understanding people's behavior in donating through waqf is very important. Ratnasari et al., (2023) and Abdul Shukor et al.,(2019) explained that integrity, reputation, trust, and the image of Nazhir institutions influence the behavior intention to donate in the form of waqf. Ajzen, (1991) in the Theory of Planned Behavior, explains that understanding behavior helps predict a person's behavior in the future. Someone with a positive sentiment or behavior in the present will have a high probability of carrying out the same behavior in the future and vice versa (Timur et al., 2022; Timur & Herianingrum, 2022).

Previous studies, namely Paxton et al., (2020) and Peng et al., (2022) found that potential donors with positive sentiments and emotions will also have a positive relationship with behavior in donating through social institutions. The sentiments and emotions shown by potential donors are solid motivators for understanding a person's behavior in donating. On the other hand, several other studies have found that donation campaigns from social institutions do not always generate positive sentiment. Chaabane & Parguel, (2016) and Grolleau et al., (2016) explain that a social institution that has a campaign with a large amount of managed social funds will have a negative effect. The negative effect comes from the warm-glow effect. It can damage consumer perceptions (Faza et al., 2022; Lutfi et al., 2023). With huge donation nominal, potential donors will have a sense of suspicion about the transparency of the management of these social funds.

Based on this background, this research will identify how the sentiments and emotions shown by the public as potential donors are measured in conversations on tweet metadata on Twitter. Twitter was chosen because it is a powerful social media in measuring sentiment and polarity in society towards a topic (Mostafa, 2018). In addition, data sampling on Twitter is more accessible and more targeted because researchers can take samples that are suitable for withdrawal through the features of hashtags, keywords, and target users (Boecking et al., 2015). Kominfo, (2023) data also explains that Twitter is a social media with the most positive public sentiment in spreading valid news or news. Twitter was also chosen to conduct this research because it is the largest and most popular microblogging site, with 556 million active users worldwide (Wearesocial, 2022).

This research will also identify what words and topics are frequently discussed on Twitter regarding waqf in Indonesia. Several previous studies, such as Paxton et al., (2020), and Peng et al., (2022) have tried to measure sentiment and its influence but were limited to intentions and the amount of donations to social institutions in general. What about Islamic philanthropy? Researchers have not found any previous studies that tried to identify sentiments with specific topics of

Islamic philanthropy, such as waqf Religion is believed to have an important role in a person's behavior in donating to social causes (Guo et al., 2013). Waqf in Indonesia has a lot of potential, but the general population does not pay it much attention yet. The researcher thinks it is crucial to understand the attitudes and beliefs of Indonesians towards waqf. Therefore, this research will be the first research that will try to comprehensively measure how the public shows sentiments and emotions towards waqf in Indonesia. At the end of the research, the results will be developed based on previously existing theories to get implications that can benefit all actors in the waqf ecosystem, especially in understanding people's behavior. In addition, the results of this study is hoped could be used as a reference for waqf management institutions and the government to be able to develop strategies to increase awareness and literacy regarding waqf so that in the future, people's intention to donate waqf can increase.

RESEARCH METHODS

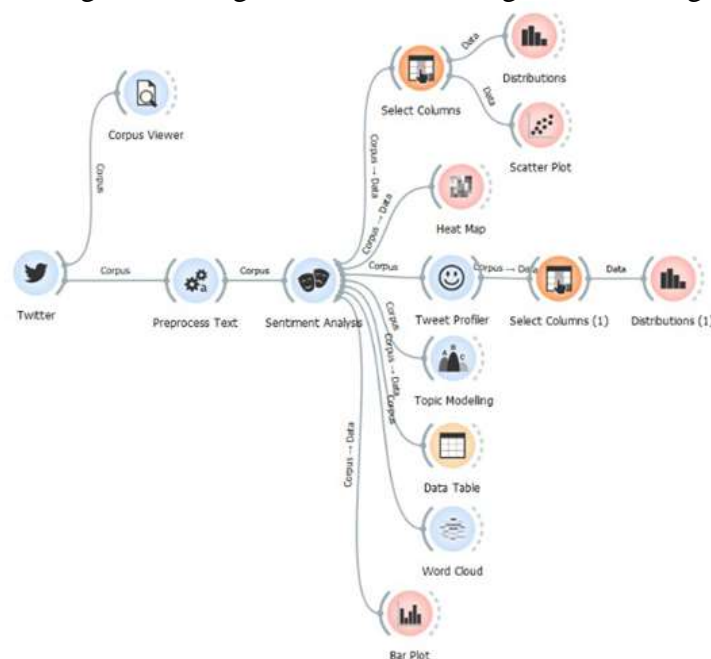
This study uses a qualitative methodology, a sentiment analysis approach, and the Orange Data Mining application as a tool. Sentiment analysis is an analytical method based on text classification by processing language, processing linguistics, and data originating from text mining into an analysis of the author's opinions, sentiments, and emotions on a particular topic (Mailoa, 2021). The process of sentiment analysis requires data in the form of words which will later be filtered and identified as output in the form of sentiments. The processed word or sentence will produce an expression or feeling of Joy, Surprise, Sadness, Fear, Disguise, or Anger.

Orange Data Mining is an open-source machine learning with functions for data mining, identification, and analysis in visual form (Mir et al., 2022). Python is the computer language used for Orange data mining. Sentiment predictions for each document in the corpus or a collection of previously crawled documents can be obtained using sentiment analysis in Orange data mining. Sentiment prediction utilizes lexicon-based sentiment modules, which have benefits in terms of flexibility (Trivedi & Singh, 2021). Several types of metadata that can be processed by Orange Data Mining from Twitter are "Date and time of the post," "username," "tweet count," "likes count," "replies count," "retweet count," "mentions," "followers count," "language," "type of account," "author status count," "author favorites count," "author friend count," "author followers count," "author listed count."

The information is taken from tweets on the social media site Twitter. Tweets are short messages in the form of words with a maximum of 280 words, which is characteristic of Twitter (Antonakaki et al., 2021). Several types of metadata obtained from the results of the Twitter data crawl process are tweets, retweets, comments, comment replies, number of likes, date tweet, author name, language, and author location (Timur et al., 2023). The data were gathered from data

generator of Twitter website in <https://developer.twitter.com/> on April 12, 2023, employs the Twitter Application Programming Interface (API) to retrieve metadata sources coming from tweets on Twitter from April 10, 2023, through April 24, 2023. This study focuses on internet users in Indonesia, where Indonesian is the most widely spoken language. As a result, the three keywords employed in this study are a combination of research objects that also use Indonesian and have an absorption language of English. "Researchers use the word "Wakaf" as a keyword in the process of crawling on Twitter. 1.000 tweets make up the whole set of collected and processed tweet data for this study.

Figure 1. Widget Structure in Orange Data Mining



Source: Data Processed by Orange Data Mining

There are three steps to make up for this study. The first step was data crawling in Twitter by utilizing the Orange Data Mining tool and the Multilingual Sentiment technique. The second stage entails pre-processing, sentiment analysis, and visualization. The third step was identification and visualization of the result. In order to get cleaner crawler data results, three procedures were conducted during the pre-processing stage to remove tweet information that wasn't pertinent to the study. The "Lowercase" function is used to lowercase each letter in the tweet sentence. The "Remove Accents" function is used to remove accents or language that is irrelevant to the study. The "Purse HTML" function is used to remove tweets that contain HTML or URLs. The second stage is tokenization, which separates each word in a tweet so that machine learning can evaluate it more quickly. The last step is to use Stopwords to filter out comments that are nonsensical and unrelated to the targeted keywords.

During the sentiment analysis stage, researchers used the Multilingual Sentiment approach. Multilingual Sentiment was chosen as it is the only Lexicon language technique that can recognize tweets or sentences in Indonesian. The recognized data will be identified using three different types of dictionary files, which contain phrases that convey a negative sentiment, broad terms, and words that describe a good emotion. The result of sentiment weighting with Multilingual Sentiment will be descriptions that are positive, neutral, and negative.

Research Question

Twitter is the most important and effective channel for analyzing public opinion on a topic (Li et al., 2018). Understanding public opinion is essential for developing policy efforts that aim to shape and direct public behavior toward the desired results (Khanday et al., 2021). The following questions will generally be answered by this study:

RQ1: What topics are most liked and most retweeted by netizens on Twitter related to waqf in Indonesia?

RQ2: What topics are most discussed by netizens on Twitter related waqf in Indonesia?

RQ3: What are the sentiments of netizens on Twitter regarding the waqf in Indonesia?

RQ4: What are the majority of emotion types on Twitter related to waqf in Indonesia?

RESULTS

Dialogue Data Text Mining Twitter

Table 1 shows the top five tweets from the crawling process metadata that have received the most likes and retweets. Table 1 displays the original Indonesian tweet text and its English translation.

Table 1. Tweets With Most Likes and Retweets

Content (Original)	Content (In English)	Number of Likes	Number of Retweet
Berkunjung dan bersilaturahmi dengan Gubernur Sumatra Barat, Buya @mahyeldi_sp sekaligus menghadiri Grand Launching Lembaga Wakaf Yayasan Rumah Sakit Islam (YARSI) Sumbar di Istana Gubernur Sumbar	Visit and stay in touch with the Governor of West Sumatra, Buya @mahyeldi_sp, and attend the Grand Launching of the West Sumatra Lembaga Wakaf Yayasan Rumah Sakit Islam (YARSI) at the West Sumatra Governor's Palace.	88	6
Update Pembebasan Tanah Wakaf Al-Bahjah, Masih dibuka Wakaf Pembebasan Tanah seluas	Update on Al-Bahjah Waqf Land Acquisition: A 5,000-meter ² Land Acquisition Waqf is still	42	8

5.000 meter ² berlokasi disebelah ujung utara Gedung Tahfidz Al-Bahjah Center. Salurkan Infaq Terbaik Anda melalui rekening Bank Syariah Indonesia (BSI)	open at the north end of the Tahfidz Al-Bahjah Center Building. Channel your Best Infaq through an Bank Syariah Indonesia (BSI) account		
Boleh, Kalau zakat memang untuk kebutuhan konsumtif termasuk yang mendesak pengentasan kemiskinan. Tapi kalau wakaf harus sesuai peruntukannya (mauquf 'alaih). Kecuali wakaf untuk kemaslahatan umum boleh untuk yang masalah menurut nazhirnya	You can, If zakat is for consumptive needs, including those that urgently eradicate poverty. However, waqf must be according to its purpose (mauquf 'alaih). Except for waqf for the public good, it can be for those who are masalah according to their nazhir	34	4
Empat masjid terima dana 'Wakaf Masjid Hijau'	Four mosques receive 'Green Mosque Waqf' funding	28	7
Selain zakat, Sobat juga bisa membayar infak, sedekah, wakaf, maupun donasi untuk sesama. Yuk Sobat, gunakan layanan LinkAja Syariah untuk transaksi yang lebih berkah!	Apart from zakat, you can also pay infaq, alms, endowments, and other donations. Come on, friends, use the LinkAja Syariah service for more blessed transactions!	20	33

Source: Data Processed by Orange Data Mining

The number of likes and retweets a tweet has the willingness of other Twitter users to be involved in the topic being discussed (Lahuerta-Otero et al., 2018). Of the five tweets with the highest number of likes and retweets shown in Table 1, it can be seen that the form of tweets is dominated by news sentences that inform activities related to waqf, such as the grand launching of an Islamic Hospital, which was established using waqf funds in West Sumatra. Four mosques received the “Wakaf Masjid Hijau” fund.

The two tweets informed the use of waqf benefit funds, which were used to benefit the people by building health facilities and mosques. In addition, another tweet had 42 likes. It was retweeted eight times and contained an invitation to netizens on Twitter to raise waqf funds intended for land acquisition for constructing an Al-Quran memorizing Islamic boarding school. Next, the tweet with the most likes and retweets came from an answer to a waqf fiqh study regarding the allocation of waqf funds. Tweets invite the public to distribute their zakat, infaq, alms, and waqf through the Linkaja digital platform.

Word Cloud

The Word Cloud widget area presents the research findings as a depiction of a set of very intense terms that regularly appear as themes in tweets regarding wakaf. The Word Cloud's larger word size reveals that the word is used more frequently in the tweet.

Table 2. The Most Appearing Words in Tweet

Word (Original)	Word (In English)	The Word Count Appears in Tweet
Wakaf	Waqf	954
Masjid	Mosque	241
Tanah	Land	236
Indonesia	Indonesia	234
BSI	BSI	138
Lembaga	Institution	138
Masyarakat	Public	124
Donasi	Donation	120
Dikelola	Manage	119
BPN	BPN	119
Aman	Safe	119
Kemanusiaan	Humanity	118
Palestina	Palestine	117
Zakat	Zakat	116
Rekening	Account	102

Source: Data Processed by Orange Data Mining

Figure 2. Word Cloud Visualisation



Source: Data Processed by Orange Data Mining

The word "Wakaf," which is the keyword in this study, is the word that appears most often with an intensity of 954 times. Keywords, in general, will always be the word that appears the most in every conversation on Twitter, as is the case with the word "Waqf". The next word that appears 241 times is the word "Masjid". Researchers found that many conversations by netizens used the word "Masjid" because most tweets on Twitter contain calls for people to donate to the construction of mosques. Some tweets also use the word "Masjid" when discussing waqf in the form of land planned to be built as a mosque in the future. In addition, there are the words "BSI" and "institution" where these two words are interpreted as a place and way for the community to distribute their waqf. BSI, or Bank Syariah Indonesia, is widely used as a collection account for waqf funds. At the same time, the institution here is defined as a waqf institution whose job is to collect, develop and distribute waqf benefits to mauquf alaih. What is interesting for researchers to find is the word "BPN" or the National Land Agency. BPN appears a lot in the tweets processed in this research because many tweets discuss waqf in the form of land, especially the role of BPN in administering and issuing certificates for waqf land. This confirms that in cyberspace, the type of waqf widely discussed by netizens is the type of waqf of land.

Some interesting words appear in most tweets: "Kemanusiaan" and "Palestina". The words "Kemanusiaan" and "Palestina" are often seen in tweet conversations that tell about the existence of the Sheikh Azlin mosque, which is a mosque due to endowments from the Indonesian people managed by the Aman Palestine humanitarian agency. Several other tweets also featured tweets discussing the distribution of waqf benefits for humanitarian aid for Palestinians. Researchers also found the words "Dikelola" and "Aman". These two words can represent public opinion through Twitter, which discusses the safe and transparent management of waqf in Indonesia.

Topic Modelling Visualisation

Orange Data Mining's data processing showed 10 issues that became the most talked-about subjects on Twitter, according to the topic modeling visualization section's findings. This result strengthens the findings of the earlier Word Cloud approach, which also collected data in the form of "Word" that frequently appears in wakaf discussions.

The words "wakaf," "Indonesia," "masjid," "lembaga," "masyarakat," "dikelola," "aman," "kemanusiaan," "Palestina," and "donasi" are some of the topics that come up most frequently. Additionally, the terms "wakaf," "Indonesia," "tanah," "Palestina," "kemanusiaan," "dikelola," "masyarakat," "aman," "BPN," and "lembaga" are frequently included in the list of topics that come in second. Overall, the topic modeling visualization results shown in Figure 3. Also displays the same results as the set of words that often appear in conversations on Twitter tweets in this study. For example, Figure 3.

Figure 3. Topic Modelling Visualisation

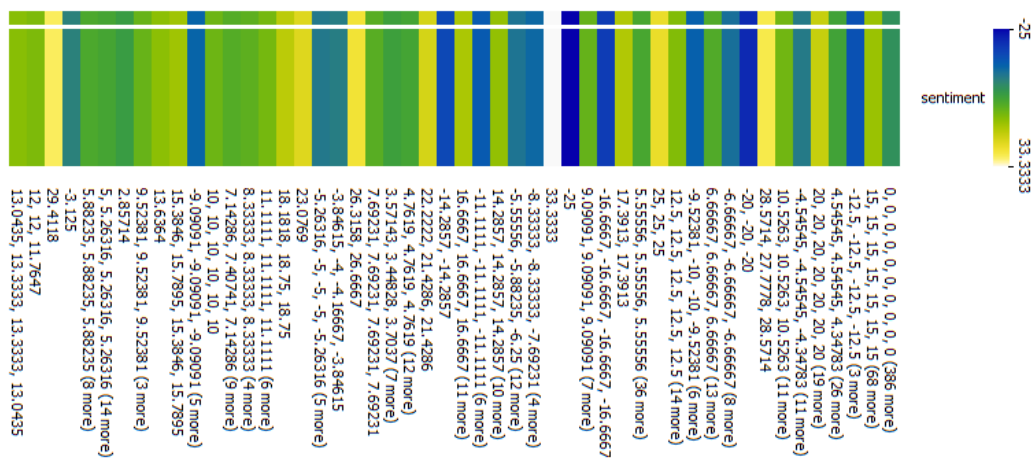
Topic	Topic keywords
1	wakaf, indonesia, masjid, lembaga, masyarakat, dikelola, aman, kemanusiaan, palestina, donasi
2	wakaf, indonesia, tanah, palestina, kemanusiaan, dikelola, masyarakat, aman, bpn, lembaga
3	bsi, bpn, tanah, sertifikat, menteri, menyerahkan, rekening, konfirmasi, zakat, kunjungan
4	wakaf, bsi, bali, konfirmasi, tanah, pembelian, diklat, griya, tilawati, ayat
5	masjid, rekening, bangun, bismillah, contoh, infak, barakallah, zis, nominal, harap
6	bali, wakaf, pembelian, ayat, tilawati, diklat, griya, balai, bsi, rekening
7	tanah, ibadah, wakaf, timur, masjid, kunjungan, menyerahkan, kerja, permasalahan, quran
8	masjid, goreng, minyak, alquran, indonesia, ramadan, bisnis, bazar, wisma, kecamatan
9	kabupaten, tujuh, jawa, lengkap, mendeklarasikan, bontang, kalimantan, rangkaian, gresik, kegiatan
10	goreng, minyak, wakaf, tanah, donasi, alquran, masjid, indonesia, bisnis, wisma

Source: Data Processed by Orange Data Mining

Heat Map Visualisation

The two selected matrices' outputs are made accessible by the Heat Map widget as numerical data. To detect sentiment from the used twitter data, the value and color signify the strength of each attribute. According to the Heat Map numbers, the more positive the attitude of the tweet data group used was, the higher the number obtained or > 0.00. Conversely, the more negative the sentiment was generated, the lower the Heat Map value, or 0.00. The colors that appear on the Heat Map can also be used to determine the sentiment that the widget is displaying. Positive feelings are reflected by the hue yellowish-green, whereas bad feelings are reflected by the color bluish-green. The Heat Map visualization's findings demonstrate that the majority of the 1,000 tweets examined for this study had a favorable attitude. The Heat Map, which is dominated by yellowish-green color and shows that the emotion value obtained on average has a value of > 0.00, illustrates this.

Figure 3. Topic Modelling Visualisation



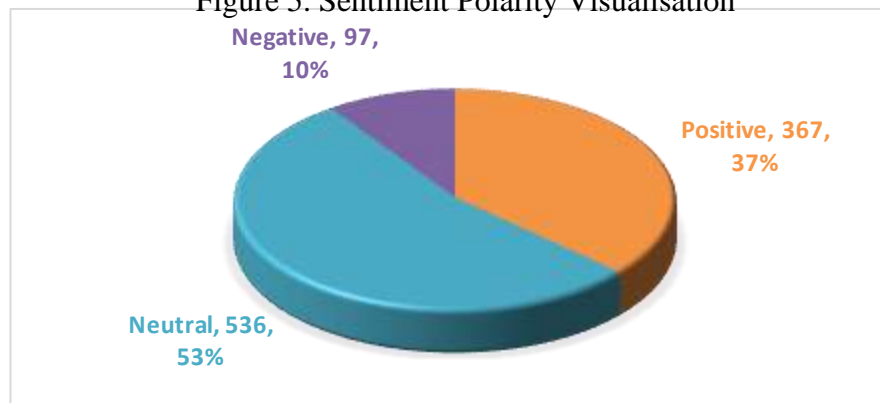
Source: Data Processed by Orange Data Mining

Sentiment Polarity on Tweets Data

Sentiment Polarity visualization displays the total value of sentiment (compound), which will then be described into three types of sentiment, namely positive, neutral, and negative. If the sentiment value > 0.00 , the sentiment from the tweet data used is positive. Conversely, if sentiment is < 0.00 , the tweet data has negative sentiment. Meanwhile, if the sentiment value is 0, then the tweet is considered to have a neutral sentiment. Furthermore, the results of calming sentiment will be depicted in a graph in Figure 5.

In Figure 5, we can see that tweets with neutral sentiment or a value of 0 dominated the sentiments generated from the 1,000 tweets in this study. In this study, there were 536 tweets with a total value of 0 or neutral. Most tweets with neutral sentiment are news-type tweets or inform Twitter users about activities carried out by certain individuals or organizations. For example, the researcher tries to randomly take one tweet from tweets with positive, neutral, and negative sentiments in Table 3.

Figure 5. Sentiment Polarity Visualisation



Source: Data Processed by Orange Data Mining

In Table 3., an example of a tweet with neutral sentiment is shown in the tweet that invites the public to donate waqf through digital platforms. In other tweets, we can also see tweets with other neutral sentiments that provide information to other Twitter users and news that informs that people in Indonesia have a high level of concern. His contribution to donating part of his wealth through Zakat infaq alms (ZIS), waqf, disaster donations, and others shows this concern

In most tweets with positive sentiments, researchers find that tweets have sentences that show solutions and benefits from the features contained in one of the digital applications in waqf. Netizens perceive one of the digital applications developed by the Maybank Group because their features make it easier for the community to donate waqf. Apart from that, several other positive tweets show the consistency and contribution of various institutions and institutions that regularly channel some of the profits obtained in the form of waqf.

On the other hand, a small portion of the metadata used in this study also found several tweets with negative sentiments. Some tweets show several cases of misappropriation of land or waqf funds that are improperly used. This incident caused disappointment for netizens because the waqf institution assigned to manage the waqf land was deemed untrustworthy. The researcher also found several negative tweets showing the sadness of netizens on Twitter over the low public interest in contributing to several waqf fundraising programs.

Table 3. Sample Tweets and Sentiment Shown

Content (Original)	Content (In English)	Sentiment Type
Melalui fitur wakaf pada MyProtection Bijak II, Nasabah tidak hanya dapat menjaga nilai asetnya, tetapi juga dapat mewujudkan kepedulian terhadap sesama umat melalui manfaat wakaf yang tersedia pada solusi tersebut	Through the waqf feature in MyProtection Bijak II, customers can not only maintain the value of their assets. However, they can also manifest concern for fellow believers through the benefits of waqf available in this solution.	Positive
Wakaf 5 in 1 dapatkan 5 kebaikan dalam 1 kali wakaf, Melalui wakaf produktif ini Insyaa Allah kita akan mendapatkan banyak pahala dengan sekali berbuat kebaikan. Tidak hanya sekali, namun pahala akan mengalir tiada henti selama manfaat wakaf kita terus dirasakan para penerima	Waqf 5 in 1 gets five goodness in one waqf. God willing, we will get many rewards through this productive waqf by doing good once. Not just once, but the rewards will flow endlessly as long as the beneficiaries continue to feel the benefits of our waqf	Positive
Wow, Keren & salut banget aku pada Sinar Mas yg terus konsisten pada program wakaf al Quran yg sejak tahun 2008 sudah mewakafkan lebih dari 1,2 juta Al Quran. Dengan wakaf al Quran InsyaAllah pahala tdk akan terputus & bermanfaat bagi yang menerimanya	Wow, that is cool, and I salute Sinar Mas for continuing to be consistent in the Al-Quran waqf program, which since 2008 has donated more than 1.2 million Al-Quran. With the endowment of the Koran, God willing, the reward will not be cut off and will benefit those who receive it.	Positive
Selain zakat, Sobat juga bisa membayar infak, sedekah, wakaf, maupun donasi untuk sesama. Yuk Sobat, gunakan layanan LinkAja Syariah untuk transaksi yang lebih berkah.	Apart from zakat, you can also pay infaq, alms, endowments, and other donations. Come on, friends, use the LinkAja Syariah service for more blessed transactions.	Neutral
Indonesia, menurut Yayasan Donor Dunia (CAF), menempati urutan pertama sebagai negara paling dermawan. Hal ini dikarenakan rakyatnya gemar	According to the World Donor Foundation (CAF), Indonesia ranks first as the most generous country. People like to donate through zakat infaq alms (ZIS),	Neutral

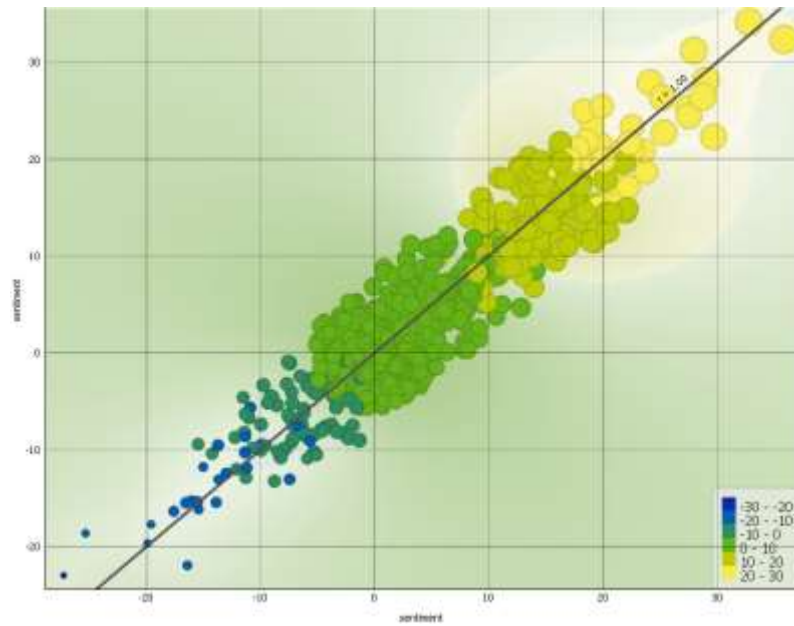
menyumbang, baik dalam bentuk zakat infak sedekah (ZIS), wakaf maupun sumbangan bencana dan lainnya.	endowments and disaster donations, and others.	
Melanjutkan kunjungan kerjanya di Provinsi Jawa Timur, Menteri ATR/Kepala BPN berkesempatan menyerahkan sertifikat tanah wakaf untuk kegiatan Nahdlatul Ulama dan Persyarikatan Muhammadiyah di Kabupaten Gresik.	Continuing his working visit to East Java Province, the Minister of ATR/Head of BPN had the opportunity to hand over certificates of waqf land for Nahdlatul Ulama and Persyarikatan Muhammadiyah activities in Gresik Regency.	Neutral
Tanah wakaf masjid di Jawa Tengah jadi proyek raksasa perumahan di Gayamsari Semarang. Mudharat dan kejam	Mosque waqf land in Central Java has become a giant housing project in Gayamsari, Semarang. Harmful and cruel	Negative
Sudah 2 minggu kampanye wakaf Ramadan dibuka, tapi baru 1176 Al Quran yg diwakafkan. Sangat sedikit dibandingkan dengan 2 tahun lalu. Marilah kita manfaatkan bulan Ramadan ini dengan berwakaf. Mereka memerlukan Quran untuk bertadarrus	It has been two weeks since the Ramadan waqf campaign opened, but only 1176 Al-Qurans have been donated. This number is minimal compared to 2 years ago. Let us take advantage of this month of Ramadan with waqf. They need the Koran to recite Quran	Negative
Hari ini bakal berakhir. Admin sedih sebab masih lagi terdapat 4 sekolah yang tertangguh untuk terima wakaf Al Quran. Sedangkan Ramadan, mereka ingin gunakan Al Quran untuk bertadarus setiap hari	This day will end. Admin is sad because there are still four schools that have been delayed in receiving Al-Quran waqf. As for Ramadan, they want to use the Koran for daily tadarus.	Negative

Source: Data Processed by Orange Data Mining

Scatter Plot Visualisation

The widget scatter plot can be used to display the results of Twitter's metadata assistance as a collection of haphazardly put dots arranged in a certain pattern. Scatter plot data, which are based on the characteristics of the x-axis and y-axis with a variety of color options and visuals, are used to help users comprehend the results of data processing. Researchers employed sentiment traits on both axes to create the scatter plot distribution in this study based on the collected sentiments. The scatter plot widget's visualization outcomes show that most of the tweet data has a vibrant green hue and a sentiment score between 0 and 25, which ranges from 0 to 25. This suggests that the scatter plot results are consistent with the preceding visualization's findings, which demonstrated that Indonesians' attitudes regarding the waqf in Indonesia are neutral.

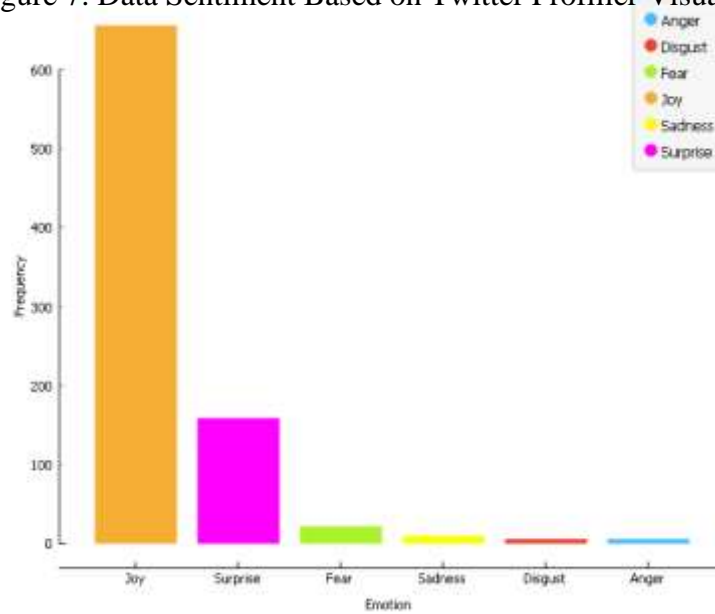
Figure 6. Scatter Plot Visualisation



Source: Data Processed by Orange Data Mining

Data Sentiment Based on Twitter Profiler

Figure 7. Data Sentiment Based on Twitter Profiler Visualisation



Source: Data Processed by Orange Data Mining

The Twitter profiler could quantify sentiment analysis using data from previously crawled documents. The Twitter profiler widget will categorize Ekman's, Plutchik's, and Profile of Mood States (POMS) in order to determine and quantify

the emotional probability of each article. 656 data tweets exhibit a joy response, according to the sentiment analysis results obtained using the Twitter Data Profiler widget. With a percentage value of 76,37% of the entire analysed tweet data, this joyous emotion predominates. Following that, 159 data tweets, or 18.51%, are found to be tweets expressing surprise. However, there aren't many tweets that express unfavorable opinions. For instance, the results of sentiment analysis using the Twitter profiler widget for feelings of fear display 22 or 22.56% of the tweet data.

DISCUSSION

This study processes 1,000 metadata in the form of tweets from Twitter with the keyword "Waqf". The data processing results with Orange Data Mining show that tweet sentences that get the most likes and retweets invite people to participate in a waqf project. In addition, news-type tweets showing the activities of waqf management institutions in carrying out social campaigns and utilizing the benefits of waqf funds are also the types of tweets that are widely liked and retweeted by netizens. A retweet is a form of someone's support for the message of the retweeted tweet (Liu et al., 2012). The more the tweets have likes and retweets, the more popular the gist and topic conveyed by the tweet will be (Lahuerta-Otero et al., 2018).

Using social media in social campaigns on Twitter has the advantage of increasing awareness and the intention of potential donors to waqf (Nurillah et al., 2022). This is reinforced by the increasing number of social media users from year to year. Twitter, for example, has 436 million active users in 2022 (Wearesocial, 2022). marketing through social media not only provides information to visitors; more than that, social media owners and visitors can interact with each other, allowing for more optimal information transactions to occur (Bokunewicz & Shulman, 2017; Khairudin & Mohammad, 2021). From social media, visitors can also get information from experiences or responses from other people, which are shared through comments, likes, and retweets. When someone needs more information, he will seek information through suggestions or other people's experiences (Fan et al., 2020; Kim & Park, 2013).

Researchers found exciting findings in the word cloud visualization results where several words such as "Masjid", "Tanah", and "BPN" appear. These three words are interrelated because the majority of the tweets in this study refer to the type of land waqf, such as the example tweet below:

“Even though we have successfully released the land with the down payment we provided, we must prepare the shortfall for repayment. Yaa Robb, I hope this month of Ramadan can fulfill its shortcomings. Friends, do you want to help pay off by joining the land endowment? IDR 50.000/meter?”

In several other tweets, researchers also found the same pattern where many social campaigns invite people to donate through waqf through money intended to be used to build mosques. Mosque waqf or land waqf, whose designation is used to build a mosque, is a type of waqf Khairi and musytaraq whose practice is in line with and very close to that carried out by Rasulullah SAW. The Nabawi Mosque was the first mosque donated by Rasulullah SAW to benefit people's worship (Ab Rahman et al., 2023). Therefore, the practice of waqf land or mosque waqf is carried out by people in Indonesia. On the other hand, other types of waqf, such as cash waqf and stock waqf, have the same potential.

In contrast to land or mosque waqf, other types of waqf, such as cash and stock waqf, have yet to attract public attention. The lack of conversations on cash or stock waqf at the same time can indicate that the public's interest in waqf through cash or stock waqf still needs to be higher. This fact is in line with the results of the BWI (2020) literacy index survey for the population in Indonesia, which only scores 12% or low.

Much of the discussion of waqf in the form of land and mosques is related to the word "BPN," which is also the topic and word that appears most often in the word cloud and topic modeling visualization. BPN, or the National Land Agency, is a government institution that must provide formal legality to any land with waqf status as a certificate. Waqf land certification for mosques or waqf land can be a separate key to legitimacy because mosques and waqf land have the legal status of mosque land.

H. Usman et al.,(2022) explained that trust could be built through the efforts of the waqf management institution to provide certainty, including legal certainty, for something it manages. Wakat land certificates provide legal certainty for waqf land as a legal object to avoid disputes in the future. Next, the researcher also found the words "managed" and "safe" as the two words that appear the most and are the most discussed topics by netizens on Twitter. These words represent the public's trust in the waqf management institution or Nazhir in managing the waqf funds they distribute transparently through the various programs offered.

Overall, this study found that the discussion of the 1,000 tweets on Twitter used in this study was predominantly characterized by neutral sentiments, with a smaller portion expressing joyful emotions. The neutral sentiment comes from the tweets that refer to news that informs activities related to waqf, such as waqf fundraising campaigns, giving waqf certificates, and Al-Quran waqf distribution. One interesting finding from the researchers was related to tweets expressing the emotion of joy. For instance, they observed that some tweets were specifically highlighting the utilization of a digital application to facilitate the distribution of waqf funds. Generation Z and millennials as potentials donor of waqf funds prefer digital payment system because it offers a more straightforward, safer, faster, and more practical way (Berakon et al., 2022).

PRACTICAL IMPLICATIONS

The researcher suggests that waqf or nazhir management institutions increase the intensity of using social media as a publication medium for all activities carried out in the context of waqf, including collecting waqf donations, managing them, and distributing the benefits of waqf funds to mauquf alaih. This is done as a form of transparency and improvement in organizational accountability to influence public trust and satisfaction indirectly. Moreover, this study also provides suggestions for waqf management institutions to synergize with banks, fintech, and marketplaces to develop platforms to help people channel their waqf donations through these digital applications. In addition, waqf fund management institutions and the government must continue to disseminate information regarding other types of waqf innovations, such as cash waqf and stock waqf, which also have enormous potential and can provide socio-economic benefits to the community.

This study also provides advice to the government as a regulator in the waqf ecosystem in Indonesia to focus on increasing literacy for the community about forms of waqf other than land waqf, such as cash waqf, cash waqf, stock waqf and so on, which also have great potential in Indonesia. The infrastructure equity policy is also essential considering that the use of technology in the distribution of waqf and as a medium for marketing waqf to the public is very important so that all people in Indonesia have the same opportunity to donate using technology.

CONCLUSION

The use of social media as a means to publicize waqf activities by the government, waqf management institutions, and nazhir is widely practiced because it can quickly attract public attention while increasing public awareness and intention to donate waqf. In this research, the extracted 1000 tweets with the topic of waqf show the dominance of neutral sentiments with joy emotions. The community, especially Twitter social media users, showed a sense of joy because they were satisfied with the management of waqf funds carried out by waqf management institutions in Indonesia. This is shown by the many appearances of the word "safe" as a representation of public trust in donations that have been given in the form of waqf.

In addition, the community feels happy because of the convenience of channeling waqf funds through digital applications that offer speed, convenience, and flexibility in distributing waqf funds. There are a number of restrictions on this study, particularly in terms of the quantity of metadata used and the brief period of coverage. In order to produce more comprehensive research results, the researcher intends to employ more metadata in future studies. Additionally, the data gathering period may be extended to six months or a year. Metadata can also be retrieved for future studies from sources outside of Indonesia.

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