PUBLIC STIGMA ABOUT POLYGAMY BASED ON ISLAMIC-MUHAMMADIYAH VIEWS USING SENTIMENT ANALYSIS APPROACH

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Keywords	ABSTRACT
Islam, Muhammadiyah, Polygamy, Sentiment Analysis, Twitter	Social media is very important to control the development of issues that occur today. With social shifts and changing societal values, polygamy has become a complex issue and attracts the attention of many people around the world discussed through social media platforms. This research contributes to the field by applying a sentiment analysis approach to automatically detect and analyze public sentiment regarding polygamiy content on Twitter, particularly in the context of Islamic-Muhammadiyah views. This study used decision tree classification methods, support vector machines, and random forests with the best analysis accuracy obtained at SVM 77.4%. Furthermore, the results of the sentiment class obtained were analyzed according to the views of Muhammadiyah. The results obtained in the analysis 77% commented negatively and 23% commented positively. In addition, this research can be used as a reference for future research on sentiment analysis cases to training and testing classroom models.

INTRODUCTION

The impact of social media is huge on its users (Zahri et al., 2023). Social media is very important to control the development of issues that occur today. One of the popular social media is Twitter (Karami et al., 2022) which can express user responses through short messages of up to 140 characters, send images to videos (Hinduja et al., 2022). All forms of perspective are expressed by users through social media Twitter (Azahra & Setiawan, 2023). Twitter allows users to interact more closely with each other (Meliana et al., 2019).

Polygamy is a form of marriage system in which an individual has more than one spouse simultaneously (Trigiyatno et al., 2023). This practice has existed since ancient times (Astari et al., 2023) and is still practiced in some parts of the world today. In polygamy, a man can have multiple wives, whereas in some cultures, a woman can also have multiple husbands, which is called polyandry. Definitions of polygamy vary from cultural, religious, and legal standpoints (Ma'u, 2023). In some societies, polygamy is considered part of the traditions and cultures inherent in a particular society. In some religions, polygamy is permitted or even encouraged, citing gender balance or certain religious provisions.

Controversy surrounds the definition of polygamy due to differing views on justice, gender equality, and human rights. Some people believe that polygamy can create injustice in relationships, because not all couples get the same attention and affection. There are also concerns about the

protection of the rights of children born from polygamy. Countries that ban polygamy, this practice is considered a form of lawlessness (Santoso, 2023). However, in some countries, polygamy is still recognized and regulated by local law (Irfan, 2023). In such cases, the rule of law often governs certain aspects of polygamy, such as inheritance, the rights of a second or third wife, and the rights of children born of polygamy. Although some people favor polygamy because of cultural or religious beliefs, the debate about the definition of polygamy continues. With social shifts and changing societal values, polygamy has become a complex issue and attracts the attention of many people around the world discussed through social media platforms (Alindah, 2023). A deep understanding of polygamy requires a holistic approach and considers the cultural, religious, and humanitarian issues perspectives involved.

Although the majority of the public rejected and made negative comments against polygamy, few individuals expressed positive support for this phenomenon. Proponents of polygamy may argue that it is legal in the context of the Indonesian state (Fidiani, 2021). Polygamy is a form of marriage involving more than one wife. The controversy surrounding polygamy has been a topic of intense debate on social media platforms (Hertina et al., 2021).

Muhammadiyah has made a significant contribution to the establishment of Islamic law in Indonesia. As an Islamic organization based on reformist and progressive movements, Muhammadiyah has played an active role in providing views and influence on legislation related to Islamic law in Indonesia. Muhammadiyah strives to avoid literalism and fundamentalism in the interpretation of religious teachings, so that Islamic law recognized and applied in Indonesia is more inclusive and accommodates the diversity of society. Muhammadiyah has voiced the views and aspirations of the Muslim community in the establishment of various legal policies related to marriage, inheritance, Islamic education, and so on. Increasing understanding and awareness of Islamic law, Muhammadiyah hopes to avoid misinterpretation and application of laws that are not in accordance with true Islamic values (Muhammadiyah, 2015). In addition, Muhammadiyah also plays a role in advocating for women's rights in Islamic law. Muhammadiyah supports policy and legislation changes that provide protection and equality for women in marriage, inheritance, and other legal matters. Through these efforts, Muhammadiyah strives to create gender equality in the Islamic legal system in Indonesia. In general, Muhammadiyah's contribution to the establishment of Islamic law in Indonesia reflects efforts to present a moderate, inclusive, and progressive interpretation of religious teachings (Abror & Zuhdi, 2018). Muhammadiyah strives to create a relevant and equitable Islamic legal system for Indonesian society by considering the context of the times and fighting for gender equality.
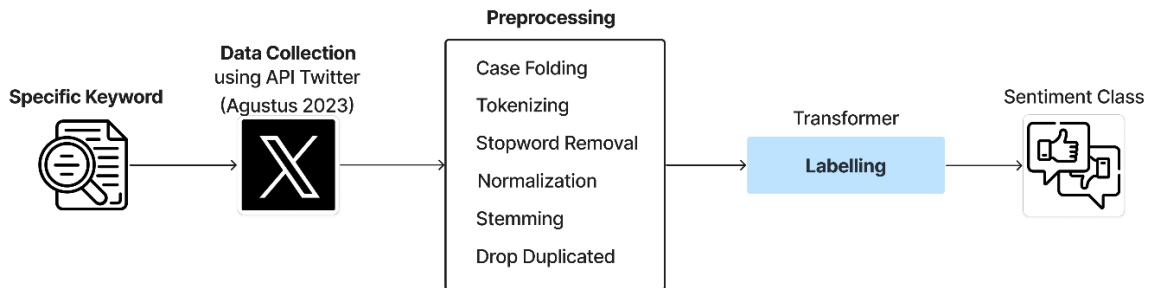
Many studies have applied sentiment analysis approaches based on Twitter data (Ammari et al., 2023; Catelli et al., 2023; Czeranowska et al., 2023; Samaras et al., 2023; Zeitun et al., 2023). Other research by Hirata & Matsuda (2023) about the utilization of natural language to analyze logistical needs in Japan during the Covid-19 pandemic. The main implications that "logistics" generally have a positive meaning, the trend of increasing interest in logistics in Western Japan in 2022, the use of social media to address the challenges of the logistics industry and the analysis of logistics and transportation trends. In addition, other studies (Xu et al., 2022) also discussed using Twitter data to analyze Covid-19 vaccine trends in December 2021 using Twitter's API. The study reveals differences between Chinese vaccines and vaccines from other countries. The value of sentiment is influenced by the number of daily cases, deaths and certain issues. Twitter's data-driven sentiment analysis approach was also discussed in the research by Chinnasamy et al. (2022) about Covid-19 vaccination. Other research by Sunitha et al. (2022) about the use of Twitter data to find out sentiment towards the Corona virus in the period March 2020 to November 2021. Senitmen conducted on Indians and Europeans used TF-IDF, GloVe and Word2Vec feature extraction. The classification method used by GRU and CapsNet with accuracy results of 97.28% and 95.20% against Indians and Europeans. Other research topics on sentiment analysis based on Twitter data were also found (Loureiro et al., 2022). The study presents an economic analysis of impressions and reactions to wildfires in Spain and Portugal. It argued that exposure to wildfires significantly reduced the sentiment score expressed and increased expressions of fear and political discontent as a form of protest. It is estimated that the loss is around 1.49€ - 3.50€/year/kilometer distance to the nearest fire.

Sentiment analysis is a field of computer science that can determine emotions automatically (Abayomi-Alli et al., 2022; Shaden et al., 2023). The use of sentiment analysis approach will give positive and negative meaning to the community's response to the issue of polygamy. The use of sentiment analysis with other topics is also found in research by Leelawat et al. (2022) related to Thailand tourism in Bangkok, Chiang Mai and Phuket.

Based on the explanation, a sentiment analysis approach is needed to be able to find out polygamy content automatically on Twitter. The research aims to analyze public stigma about polygamy based on Islamic-Muhammadiyah views using sentiment analysis approach. The research contributes to the field by applying a sentiment analysis approach to automatically detect and analyze public sentiment regarding polygamy content on Twitter, particularly in the context of Islamic-Muhammadiyah views. This approach allows for a systematic examination of public stigma and attitudes toward polygamy, providing insights into how such views are expressed and perceived on social media platforms.

METHODS

This study used decision tree classification methods, support vector machines and random forests with the best analysis accuracy obtained at SVM 77.4%. This study conducted data collection in August 2023 with specific keywords. This research framework is described as shown in Figure 1.

Figure 1. Framework of research

The keyword used is "polygamy" in Indonesian. This determines the data obtained using Twitter's APIs. The data obtained is 500 Tweet data on the topic of polygamy. Before class labeling, the data goes through a preprocessing stage to facilitate the labeling process. Labeling is used using a library in Python, a transformer that can define negative and positive classes in Tweets respectively.

Data is obtained using Twitter's API by entering specific keywords to implement it. Before using the API, a Twitter developer account is required to get data (Agustiningsih et al., 2022). The data we get starting from August 2023 on polygamy keywords is 500 Tweet records. The attributes obtained in the data as shown in Table 1.

Table 1. Feature Item Description

Item	Description
Tweet Date	Date tweet was posted Twitter
Username and User ID	Username naming on twitter and ID
Tweet	The Twitter post

Preprocessing is the stage of processing text by changing it to be easier and better (Firdaus et al., 2023). The preprocessing stages used in this study include case folding, tokenizing, stop word removal, normalization, stemming and drop duplicated Tweets obtained.

The stages of labeling sentiment classes can be done using several libraries such as TextBlob, VADER, to manual labeling (Pratama et al., 2023). However, this research uses Python libraries called transformers. This library is used because its architecture resembles the predictions humans make for sentiment polarity (Rozado et al., 2022).

RESULTS
Result

This study conducted an analysis of the results of class labeling obtained using the transformer library. The results were then analyzed based on the number of positive and negative classes obtained using the Muhammadiyah perspective as shown in Figure 2.
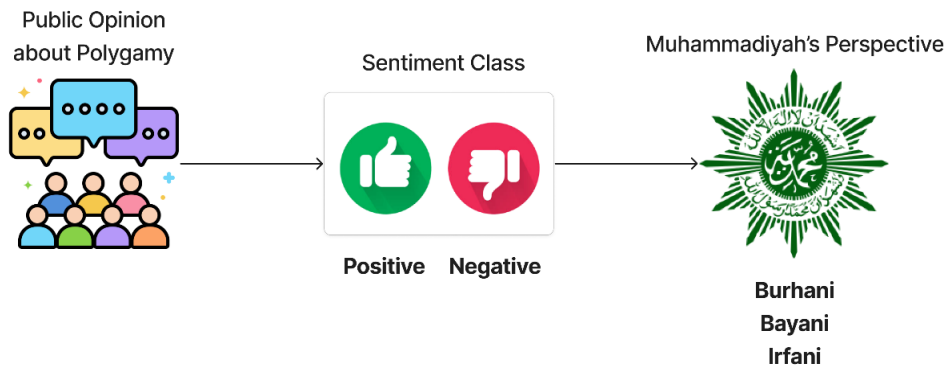
Figure 2. Comparison of perspectives based on Muhammadiyah

Figure 2 shows a research flow that explains public opinion given a sentiment analysis approach. Furthermore, the results of the sentiment class obtained were analyzed according to the views of Muhammadiyah in understanding the context of polygamy in life. Words that frequently appear in acquired Tweets are shown as Figure 3.

Figure 3. Wordcloud result of Tweet

Figure 3 shows the set of words in the Tweet you get. Words that appear such as "polygamy", "change partner", "casual sex", and others. The number of Tweets that fall into each positive and negative sentiment class is shown in Table 2.

Table 2. Percentage of the number sentiment classes

Class	Count of Tweet (%)
POSITIVE	23%
NEGATIVE	77%

The results of the analysis conducted in table 2 showed that 77% commented negatively on polygamy. This percentage shows that there is resistance in society about the practice of polygamy. Meanwhile, polygamy has become a legal decree that cannot be denied because it has been established by Allah SWT. This is a problem faced by the Islamic community, especially in Indonesia, because there is a rejection of polygamy even though it has been stipulated in the Quran. Based on this, a certain approach or study is needed in order to solve this problem.

Muhammadiyah's view of polygamy can be seen through three different approaches: bayani, burhani, and irfani (Setiawan, 2019). These three approaches reflect diverse perspectives on social and religious issues, including polygamy.

Bayani Approach

The bayani approach is one that focuses on religious texts and teachings literally (Setiawan, 2019), including in terms of polygamy. The Muhammadiyah view through the bayani approach emphasizes that polygamy is part of the teachings of Islam and is permissible, as stated in the Qur'an surah An-Nisa, 4:3.

وَإِنْ خِفْتُمْ أَلَّا تُقْسِطُوا فِي الْيَتَامَىٰ فَانْكِحُوا مَا طَابَ لَكُمْ مِنَ النِّسَاءِ مَثْنَىٰ وَثُلَاثَ وَرُبَاعَ ۖ فَإِنْ خِفْتُمْ أَلَّا تَعْدِلُوا فَوَاحِدَةً أَوْ مَا مَلَكَتْ أَيْمَانُكُمْ ۚ ذَٰلِكَ أَدْنَىٰ أَلَّا تَعُولُوا

It means: "And if you fear that you will not be able to do justice to the fatherless woman (let you marry her), then marry those (other) women whom you please; two, three or four. Then if you fear that you will not be able to do justice, then (marry) only one, or the slaves you have. Such is closer to not persecuting".

The verse clearly states that polygamy is something taught in Islam. However, Muhammadiyah also stresses the importance of understanding the context and wisdom behind these teachings. The practice of polygamy must be practiced in compliance with strict Islamic rules, including equal treatment of wives and fair responsibilities of husbands.

Burhani Approach

The burhani approach is one that relies on rational reasoning and scientific evidence to deal with religious issues (Setiawan, 2019). In terms of polygamy, Muhammadiyah through its burhani approach critically considers the social and humanitarian implications of this practice. They will emphasize that polygamy must be seen in a changing social and cultural context. Considerations about gender equality, women's rights, and child protection should take precedence in considering polygamy. This approach encourages scientific studies and in-depth analysis of the consequences of polygamy practices on society. Allah Almighty said in surah An-Nisa, 4:129.

وَلَنْ تَسْتَطِيعُوا أَنْ تَعْدِلُوا بَيْنَ النِّسَاءِ وَلَوْ حَرَصْتُمْ

It means: "And you will never be able to do justice among (your) wives even if you are so anxious to do so".

The verse makes it clear that a husband cannot do justice even if he wants to be just. In this approach, Muhammadiyah considers that polygamy should be done with caution.

Irfani Approach

The irfani approach is one that focuses on a deep understanding of the nature of religion and the inner meaning of religious teachings (Setiawan, 2019). In terms of polygamy, Muhammadiyah through the irfani approach will emphasize the importance of maintaining spiritual meaning in every marital relationship, including polygamy. They will underscore the need to build a compassionate and understanding relationship between all parties involved. This approach encourages awareness and improvement of spirituality in society in order to understand the implications and consequences of the practice of polygamy.

In general, Muhammadiyah's view of polygamy through bayani, burhani, and irfani approaches shows a holistic and in-depth approach to this issue. Muhammadiyah combines an understanding of religious teachings, rational reasoning, and spiritual meaning to seek balanced and equitable solutions to complex social and religious issues such as polygamy.

Discussion
Muhammadiyah's views on polygamy

Muhammadiyah's view of polygamy reflects a selective and cautious attitude toward this practice. Muhammadiyah, an Islamic organization based in Indonesia, follows moderate Islamic beliefs (Burhani et al., 2018) and progressive. Muhammadiyah believes that polygamy can be permitted in Islam, but with some strict conditions and with proper purpose.

First, Muhammadiyah recognizes that polygamy is part of the teachings of Islam, as stated in the Qur'an. However, they also realize that this practice cannot be done carelessly. Muhammadiyah encourages polygamy only if men are able to fulfill their responsibilities fairly towards all wives and children born from such marriages. Second, Muhammadiyah emphasizes the need to prioritize gender

equality in the practice of polygamy. Muhammadiyah stresses the importance of consultation and approval from the first wife and subsequent wives before practicing polygamy. Open communication and mutual respect are considered key factors for creating a harmonious marriage in polygamy. Third, Muhammadiyah opposes polygamy which is only done to fulfill lustful desires without careful consideration. Muhammadiyah argues that the main purpose of polygamy should be to improve and strengthen family relationships and maintain the integrity of the household, not to enrich a man's sexual experience. Fourth, Muhammadiyah also pays special attention to women's rights and the protection of their welfare in polygamy. They assert that wives in polygamy have equal rights to fair and equal treatment, including the rights to bread, shelter, and affection. Fifth, while acknowledging the existence of polygamy in Islam, Muhammadiyah favors the practice of monogamy as an ideal form of marriage. They believe that polygamy should only be practiced in certain justified circumstances, such as in cases where a woman becomes a widow or children in need of protection and sustenance. The practice of polygamy should always be considered wisely and based on Islamic moral and ethical values that encourage the creation of harmonious and happy families.

Basically, Muhammadiyah encourages awareness of social and moral responsibility for men who want to practice polygamy. As part of the Muslim community that plays a role in shaping people's views, Muhammadiyah emphasizes the importance of setting a good example and being responsible in carrying out religious teachings. In addition, Muhammadiyah also focuses on empowering women and educating them about their rights. Muhammadiyah believes that by providing equal opportunities and access to education and employment, women can become independent and qualified individuals. Thus, they can play an active role in supporting the sustainability of the family, and polygamy is no longer the only option considered when facing marital problems.

Comparison of data analysis results and Muhammadiyah's views on polygamy

Muhammadiyah's view of polygamy may differ from that of some other Islamic organizations. This reflects the diversity and flexibility in the interpretation of Islamic teachings in Indonesia. Basically, Muhammadiyah's view of polygamy emphasizes the importance of maintaining harmony in the family and society. Marriage in Islam is considered a sacred bond, and maintaining the integrity of the family is a duty carried by every member of the family. Therefore, the role of individuals in building happy, mutually supportive and loving families cannot be ignored, both in the practice of polygamy and monogamy. Some comments were conveyed through social media Twitter saying that polygamy should prioritize happiness in building a household. The results of data analysis in Table 2 using Twitter data can be seen that 72% of users give negative comments on the view of practicing polygamy. Meanwhile, Muhammadiyah argues that polygamy is an Islamic law that has been established and obeyed. However, in its application, it must prioritize harmony in the household. In addition, 28% of users commented positively on the polygamy law. This result shows that the law of polygamy cannot be eliminated and cannot be abandoned because this has become an absolute decree of Islamic law from Allah Almighty. In practice, however, 72% of comments on polygamy consider that polygamy should not be practiced if a household has achieved true harmony. This is in accordance with the Muhammadiyah view that polygamy is a legal decree that must be obeyed, but in practice it must be with caution and not precipitate lust (Sam'ani et al., 2023).

CONCLUSION

This research examines the views of Indonesia's largest Islamic community and organizations on the legality of practicing polygamy by analyzing public sentiment on Twitter. The analysis reveals that 77% of comments on polygamy were negative, while 23% were positive, indicating general disapproval among Twitter users despite polygamy being a legal decree in Islam. Muhammadiyah, an Islamic organization, acknowledges polygamy as a legitimate Islamic law but emphasizes that it should be practiced with fairness, prioritizing family happiness over selfish desires. The study also highlights limitations, such as the focus on Indonesian language and challenges in interpreting figurative language, suggesting that future research should incorporate linguistic techniques to improve sentiment analysis accuracy. Additionally, this research serves as a reference for further studies on sentiment analysis in training and testing classroom models.

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