



Sentiment Analysis of the Hindu Community Toward Religious Issues on Social Media: A Case Study of Kapuas Regency Using a Text Mining Approach

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ABSTRACT

This study aims to analyze the sentiment of the Hindu community toward religious issues on social media, with a specific focus on Kapuas Regency, Central Kalimantan. The development of social media as a digital public sphere has positioned platforms such as Instagram and Twitter as primary spaces for the spontaneous and open expression of opinions, perceptions, and religious attitudes. This study is important because religious issues in digital spaces often influence social harmony and shape religious discourse within society. The research employs a quantitative approach using text mining and sentiment analysis based on Natural Language Processing (NLP). Primary data were collected through web scraping techniques, utilizing Apify for Instagram and asynchronous Python scripts for Twitter, with relevant keywords, hashtags, and geographic indicators. The analysis process includes text preprocessing (cleaning, tokenization, stopword removal, and stemming), followed by sentiment classification using a lexicon-based approach with the InSet dictionary into three categories: positive, negative, and neutral. The analysis results were evaluated using a confusion matrix, along with

precision, recall, and F1-score metrics to assess model reliability. The findings indicate that positive sentiment predominates on both Instagram and Twitter, followed by neutral sentiment, while negative sentiment appears in only a small proportion. Positive sentiment is generally associated with expressions of prayer, gratitude, tolerance, and calls for togetherness, whereas negative sentiment tends to emerge in discussions related to ritual differences or responses to socio-religious controversies. The sentiment analysis model achieved an accuracy of 100% on Instagram data (self-evaluation) and 74.4% on Twitter data (manual evaluation), with relatively high precision and recall values, indicating that the results are statistically reliable.

1. INTRODUCTION

The development of information and communication technology over the past two decades has fundamentally transformed the ways in which humans interact within social, cultural, and spiritual spheres. Digitalization has introduced new platforms for the exchange of ideas and values, reshaping the public sphere, including modes of religious expression and communication (Wahid, 2024). Social media has emerged as a dominant arena for constructing social narratives, including religious discourse. In Indonesia, this phenomenon has become increasingly pronounced due to the extensive penetration of the internet and social media across various segments of society. Data from Gede Agung et al. (2024) indicate that by early 2024, Indonesia had approximately 187 million active social media users, representing about 68.9% of the total population. This condition demonstrates that social media has become a new space for the formation of public opinion, including opinions related to religious issues.

The use of social media has evolved not only as a medium for entertainment or information exchange but also as a primary channel for expressing ideological and religious viewpoints. Religious discourse formed on social media has the potential to shape public perceptions of particular religious values and influence social attitudes toward religious groups.

Several studies suggest that social media can serve as an arena for religious polarization and conflict due to its open nature and limited moderation (Ronaldi et al., 2024). The rapid spread of hate speech, intolerance, and radicalism presents new challenges in maintaining social cohesion within pluralistic societies.

A critical phenomenon in this context is how viral religious issues trigger diverse public responses. Social media provides space for inclusive and dialogical religious expression, yet it also facilitates the emergence of conflict, prejudice, and exclusivism. This condition becomes more complex for minority religious groups, such as Hindus outside Bali, who often receive disproportionate representation in digital discourse. Kapuas Regency in Central Kalimantan is one region with a relatively significant Hindu population; however, socially, this community occupies a minority position. The lack of academic attention to Hindu communities in this region creates a knowledge gap and has implications for diversity-related policies that are not yet fully responsive.

Academic studies on religion and digital media have grown rapidly, particularly within the Islamic context. Research by Jubba et al. (2022) and Mudhafi et al. (2023) has mapped religious moderation in digital spaces; however, studies focusing on Hindu communities remain limited. Comprehensive quantitative approaches based on text mining are also rarely applied to the context of Hindu minorities, despite their capacity to objectively reveal patterns of public opinion, perceptions, and sentiment regarding issues such as pluralism, tolerance, rituals, and religious identity.

Text mining methods employ computational techniques to extract meaning from large volumes of textual data. This approach is particularly suitable for analyzing social media, which generates vast amounts of unstructured data. Tabroni et al. (2024) demonstrated the effectiveness of this technique in mapping public perceptions of religious moderation issues. Furthermore, Hidayat et al. (2021) emphasized the role of digital media in shaping religious identity, highlighting the importance of digital approaches for understanding the dynamics of Hindu communities in minority settings. Khusna et al. (2023) underscored the urgency of using big data to map public responses to social issues, including religious matters, thereby supporting the need for location-specific sentiment analysis such as in Kapuas Regency.

The text mining approach employed in this study is designed to address gaps in the literature regarding the digital representation of Hindu communities in minority regions. The analysis seeks to extract and interpret sentiments, opinions, and patterns of religious discourse within social media contexts. The availability of empirical data is essential to support the formulation of digital literacy strategies, the strengthening of religious identity, and the development of inclusive public policies for Hindu communities. This study is expected to contribute theoretically to the advancement of digital religious communication studies and big data-based text analysis methodologies.

This study raises the central research question of how sentiment patterns among Hindus in Kapuas Regency emerge in response to religious issues circulating on social media and which issues dominate digital conversations. It also examines how sentiment distribution varies across different types of issues, providing a comprehensive overview of religious opinion trends within digital spaces.

Accordingly, this study aims to analyze the digital sentiment of the Hindu community toward religious issues using a text mining approach. It focuses on collecting and processing data from Instagram and Twitter to identify sentiment classifications, map dominant issues, and examine public perception trends regarding religious dynamics within the context of Hindu communities as a minority group in Kapuas Regency.

2. LITERATURE REVIEW

Research on sentiment analysis in the context of digital religion has shown significant development in recent years. Furqan and Nasir (2024) emphasize that big data and supervised machine learning are effective in mapping public responses to religious moderation policies. Mudhafi et al. (2023) utilized Twitter data to assess public perceptions of religious moderation

values and found a predominance of positive sentiment, although certain groups exhibited contrasting responses. Salsabila et al. (2021) demonstrated that specific social conditions can intensify negative sentiment within religious discourse, while Tabroni et al. (2024) showed that digital religious narratives are influenced by cultural and political factors through a natural language processing approach. Pribadi et al. (2020) revealed the dominance of positive sentiment in issues of interfaith tolerance, whereas Mustaqim (2020) highlighted the potential for polarization when religion intersects with political dynamics. Studies by Hanif et al. (2024) and Kurniawan et al. (2022) underscore the influence of media framing and the urgency of hate speech detection in understanding digital religious discourse.

Collectively, these studies demonstrate the effectiveness of text mining techniques in examining religious issues; however, the research focus remains largely centered on Muslim communities and national-level contexts. Consequently, the representation of Hindu communities in minority regions such as Kapuas Regency has received limited academic attention. This research gap underscores the importance of location-based sentiment analysis to better understand the dynamics of Hindu religious discourse within digital spaces.

3. METHOD

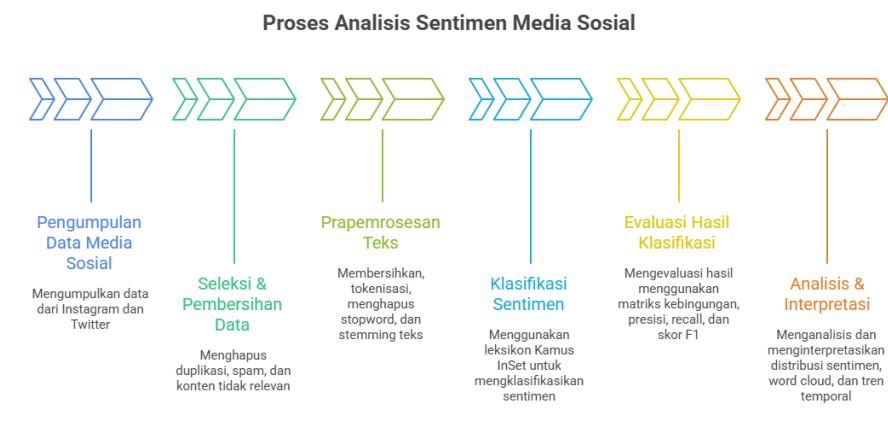


Figure 1. Research Flow Diagram

As illustrated in Figure 1, this study employs a quantitative approach using text mining methods to analyze the sentiment of the Hindu community toward religious issues on social media. The research data were obtained from two social media platforms, namely Instagram and Twitter, which were selected due to their roles as primary spaces for text-based public discourse related to religious issues. A total of 1,268 Instagram posts and comments were collected from February 2024 to September 2025, while 1,000 tweets were collected from January 2023 to September 2025. All data used in this study are publicly available and were obtained through web scraping techniques.

Data collection for Instagram was conducted using Instaloader and Apify, focusing on accounts and hashtags that represent Hindu religious activities in Kapuas Regency, such as @bimashindukalteng, @bimashinduri, and hashtags including #BimasHindu, #DoaKebangsaan, #LintasIiman, and #MerawatNegeri. Twitter data were collected using Python-based scripts through the client.search_tweet() function, employing keywords such as "Pluralism," "Tolerance," "Hindu Community Kapuas," and other relevant topics. The collected data then underwent a selection and cleaning process to remove duplicates, spam, and irrelevant content to ensure that the data corpus remained representative.

The next stage involved text preprocessing, which included cleaning to remove non-alphabetic characters, emojis, links, and excessive punctuation, followed by tokenization, stopword removal, and stemming to normalize the text and reduce linguistic variation

commonly found in social media content. The preprocessed text data were then analyzed using a lexicon-based approach with the InSet dictionary to classify sentiment into three categories: positive, negative, and neutral. All sentiment labeling processes were conducted automatically without manual labeling at the initial stage to maintain objectivity and consistency in classification.

The evaluation of sentiment classification results was performed using a confusion matrix along with precision, recall, and F1-score metrics to assess the reliability of the analysis. For Instagram data, evaluation was conducted through self-evaluation based on the structure of the lexicon used, while for Twitter data, partial manual verification was applied to accommodate the more dynamic and contextual nature of language on the platform. This study did not implement supervised learning; therefore, data splitting into training, validation, and testing sets was not conducted. The final stage of the research focused on result analysis and interpretation through sentiment distribution mapping, word cloud visualization, and temporal trend analysis to understand the dynamics and tendencies of Hindu religious discourse in digital spaces.

4. RESULT AND DISCUSSION

The data analyzed in this study consist of a collection of digital text obtained from two social media platforms, namely Instagram and Twitter. The data include comments, short posts, replies, and other textual content relevant to religious issues concerning the Hindu community in Kapuas Regency. All data were collected through a web scraping process using keywords, hashtags, and location identifiers related to Hindu religious activities, traditional ritual celebrations, and public conversations occurring within the region. The use of two digital platforms allows for a broader range of perceptions to be captured, as Instagram tends to emphasize visual and expressive interactions, whereas Twitter facilitates faster and more responsive discussions on current issues.

The collected data then underwent preprocessing stages to ensure textual cleanliness and consistency prior to analysis. The cleaning process was applied to remove links, emojis, non-alphabetic characters, and other elements not directly relevant to sentiment analysis. Tokenization was performed to segment the text into individual words, followed by stopword removal to eliminate common words that do not contribute meaningful information. Stemming was employed to reduce words to their base forms, thereby standardizing the corpus structure. These steps are essential in Natural Language Processing-based analysis, particularly because social media data are inherently unstructured and contain substantial variations in spelling and expression.

The cleaned corpus was subsequently analyzed using a lexicon-based approach with the InSet dictionary to identify the sentiment embedded in each text. The classification was conducted into three categories: positive, negative, and neutral. The classification results were then used to map sentiment distributions across Instagram and Twitter and to examine how religious issues are interpreted by the Hindu community in Kapuas within digital spaces. Analyses were performed separately for each platform, considering the distinct interaction patterns and discourse tendencies characterizing Instagram and Twitter.

The subsequent section presents quantitative results, including sentiment distribution, dominant keyword mapping through word cloud visualization, temporal sentiment trends, and an evaluation of classification model performance. These findings serve as the basis for discussion by linking observed sentiment patterns to the socio-religious context of the Hindu community in Kapuas Regency.

Instagram

The sentiment distribution on the Instagram platform indicates a relatively stable pattern of public opinion, with positive sentiment predominating. Sentiment classification based on the InSet dictionary produced three main categories: positive, negative, and neutral. The number of posts classified as positive accounts for more than half of the total analyzed data,

while negative and neutral categories appear in lower proportions. This finding suggests that digital conversations related to Hindu religious issues on Instagram tend to convey appreciative and supportive tones, particularly in posts associated with religious rituals, holiday greetings, educational content, and activities of religious institutions.

Figure 2 presents the sentiment distribution in the form of a bar chart, showing that positive sentiment dominates with more than 700 posts. Negative sentiment appears in approximately 240 posts, while neutral sentiment accounts for around 310 posts. This pattern indicates that digital interactions on Instagram are largely dominated by affirmative content, especially on topics related to religious practices and Hindu community activities.

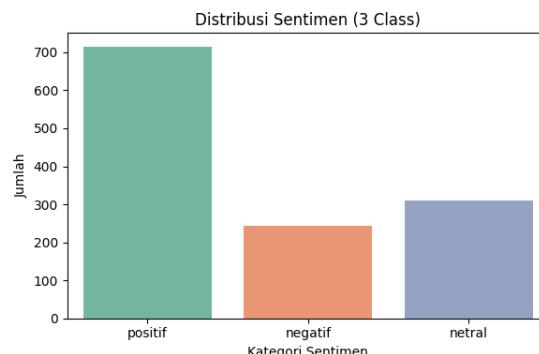


Figure 2. Percentage Distribution of Sentiment on the Instagram Platform

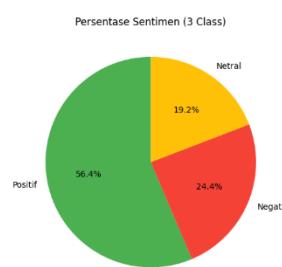


Figure 3. Sentiment Distribution on the Instagram Platform

The proportion of sentiment is also visualized in the form of a pie chart in Figure 3 to illustrate the percentage contribution of each sentiment category. Positive sentiment accounts for approximately 56.4% of the total data, followed by negative sentiment at 24.4% and neutral sentiment at 19.2%. This visualization provides a more comprehensive depiction of public opinion trends, indicating that Hindu religious content on Instagram is predominantly perceived positively.

The discussion of patterns observed in Figures 2 and 3 indicates that Instagram's visual-based characteristics tend to encourage appreciative forms of interaction. Posts featuring religious rituals, traditional ceremonies, temple activities, and Hindu motivational content receive positive responses in the form of supportive comments and expressions of prayer. Negative sentiment generally emerges in posts related to religious polemics, differences in interpretation, or public reactions to sensitive socio-religious issues, while neutral sentiment is commonly found in posts that are primarily informative or descriptive.

Word cloud analysis was employed to illustrate the most frequently occurring words within each sentiment category. Word clouds provide a visual representation of word frequency, allowing discourse patterns to be identified more clearly. The size of each word reflects its frequency of occurrence in the data corpus, with larger words indicating topics or phrases most frequently discussed by Instagram users in the context of Hindu religious issues in Kapuas Regency.

The positive sentiment corpus shown in Figure 4 reveals the dominance of words associated with expressions of respect, greetings, and Hindu religious activities. Terms such

as "Bimas Hindu," "Central Kalimantan," "Minister of Religious Affairs," as well as religious expressions such as "Om Swastyastu" and "Hinduism," appear with high frequency. This pattern indicates that positive content is primarily related to formal religious activities, government religious messages, Hindu institutional activities, and ceremonial posts such as religious holidays or ritual events. The dominance of these terms reflects the appreciative and supportive nature of digital interactions toward both community activities and religious institutions.

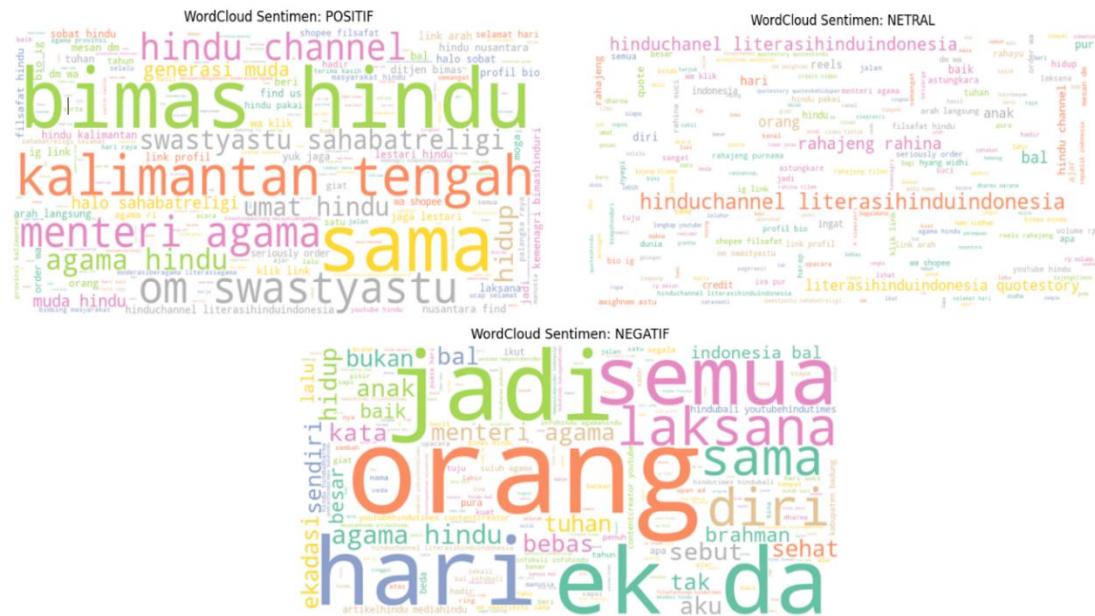


Figure 4. Word Clouds of Positive, Neutral, and Negative Sentiment on the Instagram Platform

The neutral sentiment corpus in Figure 4 is dominated by informative words related to religious literacy. Terms such as “hinduchannel,” “literasihinduindonesia,” “rahajeng rahina,” and “quotestory” appear prominently in the visualization. This pattern indicates that neutral posts tend to focus on information dissemination, religious quotations, and educational content that do not elicit strong emotional responses. Such posts reflect the role of social media as a medium for sharing religious knowledge and descriptive community activities.

The negative sentiment corpus in Figure 4 features words such as “jadi,” “orang,” “bukan,” “agama Hindu,” “laksana,” and “Tuhan.” The occurrence of these terms is associated with contexts of critical discussion or responses to particular issues that generate disagreement or dissatisfaction. The negative word cloud visualization suggests that negative sentiment primarily centers on differences of opinion regarding religious practices, reactions to specific news items, and normative comments on behavior and belief. Notably, the negative tone observed is not hostile in nature but rather reflects moderate criticism, religious clarification, or corrective responses to circulating information.

The discussion of the three word clouds indicates that Hindu digital discourse on Instagram is predominantly characterized by spiritual, educational, and institutional conversations. The dominance of words in the positive and neutral categories reflects a tendency among the Hindu community in Kapuas Regency to use social media as a space for strengthening religious identity, religious learning, and support for community activities. Negative sentiment shows a pattern oriented more toward internal discussion rather than open conflict, suggesting that differences of opinion remain within reasonable boundaries and do not escalate into extreme or hostile expressions.

Temporal analysis of sentiment on the Instagram platform provides insight into the dynamics of public perception over the observation period. The monthly sentiment trends shown in Figure 5 reveal notable fluctuations, particularly in positive sentiment, which exhibits sharp increases during certain months. These increases coincide with periods of Hindu

religious activities, such as major religious festivals, traditional rituals, and religious events that are frequently documented through visual posts on Instagram. Positive sentiment reaches its peak in April 2025, indicating a religious momentum that received broad public engagement.

As illustrated in Figure 5, neutral sentiment follows a relatively stable pattern, with slight increases during periods of heightened community activities or the dissemination of religious information. Negative sentiment shows smaller variations with less pronounced fluctuations. This pattern suggests that negative responses to Hindu religious issues on Instagram do not indicate concerning escalation. The dominance of positive trends reinforces the earlier sentiment distribution results, demonstrating that digital interactions are largely characterized by appreciation, support, and constructive religious expression.

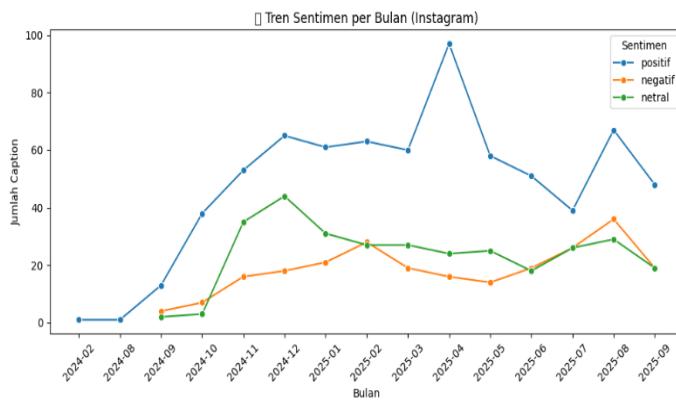


Figure 5. Monthly Sentiment Trends on the Instagram Platform

The evaluation of the sentiment classification model was conducted to ensure the accuracy of the analysis results. The confusion matrix presented in Figure 6 indicates that the InSet dictionary-based model achieved a very high level of accuracy on the Instagram data. The model successfully classified all positive, negative, and neutral sentiment data without any misclassification across categories. The number of correct predictions reached 715 for the positive class, 243 for the negative class, and 310 for the neutral class. An accuracy rate of 100% indicates that the linguistic structure used in Instagram posts is more consistent and more easily identifiable by a lexicon-based approach compared to other platforms.

The confusion matrix visualization in Figure 6 illustrates the extent to which the model accurately mapped sentiment without misclassification. This performance was achieved because Instagram text characteristics tend to be simpler, more formal, and contain fewer linguistic variations compared to Twitter, which exhibits faster and more informal conversational dynamics. Lexicon-based models perform optimally when language patterns are relatively stable; therefore, the high accuracy observed is consistent with the characteristics of Instagram posts analyzed in this study.

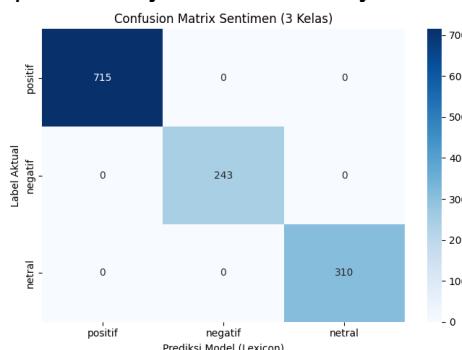


Figure 6. Sentiment Confusion Matrix on the Instagram Platform

The discussion of the model evaluation results indicates that the use of the InSet dictionary is effective for analyzing Instagram data, which tend to exhibit more standardized

linguistic structures and vocabulary usage that aligns well with sentiment categories. The high accuracy achieved provides a strong foundation for interpreting sentiment findings on the Instagram platform in a reliable manner. This model is therefore suitable for identifying trends in public responses to Hindu religious issues in Kapuas Regency, particularly in the context of visual content accompanied by brief descriptions, which generally follow language patterns that are easier to map through lexicon-based approaches.

Twitter

The sentiment distribution on the Twitter platform exhibits a pattern distinct from that observed on Instagram. As shown in Figure 7, positive and neutral sentiment categories appear in nearly equal proportions, with each accounting for 425 posts. The negative sentiment category is less prevalent, comprising 150 posts. This pattern reflects Twitter's dynamic nature as an open public discussion platform that is frequently used to respond to current issues.

Positive posts are generally associated with support for religious activities, appreciation of interfaith tolerance, and participation in religious dialogue. Neutral sentiment is predominantly characterized by factual information, local news coverage, and descriptive accounts of community activities. Negative sentiment emerges primarily in the context of issues that generate debate or criticism of specific policies.

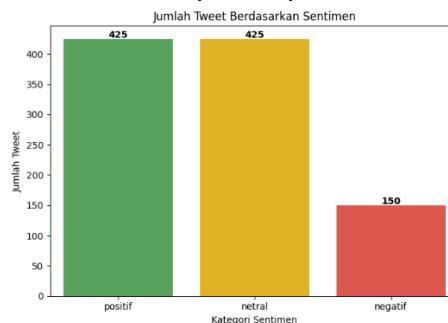


Figure 7. Distribution of the Number of Tweets by Sentiment

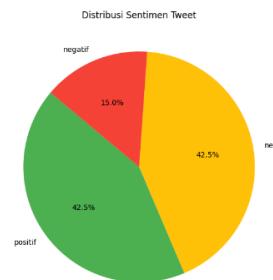


Figure 8. Percentage Distribution of Tweet Sentiment on the Twitter Platform

The sentiment proportions illustrated in the pie chart in Figure 8 show that positive and neutral sentiments each account for 42.5% of the total data, while negative sentiment comprises 15%. This pattern indicates that Hindu religious discourse on Twitter tends to be balanced between supportive expressions and neutral dialogue, with relatively limited space for negative sentiment. Although Twitter is often characterized as a platform for polarized debate, religious issues concerning the Hindu community in Kapuas Regency do not significantly dominate negative conversations.

The WordCloud analysis presented in Figure 9 provides deeper insights into the dominant topics within each sentiment category. The positive sentiment corpus is dominated by words related to tolerance, interfaith dialogue, and the role of social media as a unifying space. Terms such as "social media," "tolerance," and "interfaith relations" appear prominently, indicating high frequency in public discourse. This pattern reflects conversations that support

social harmony and highlights the active role of the Hindu community in strengthening narratives of tolerance within digital spaces.

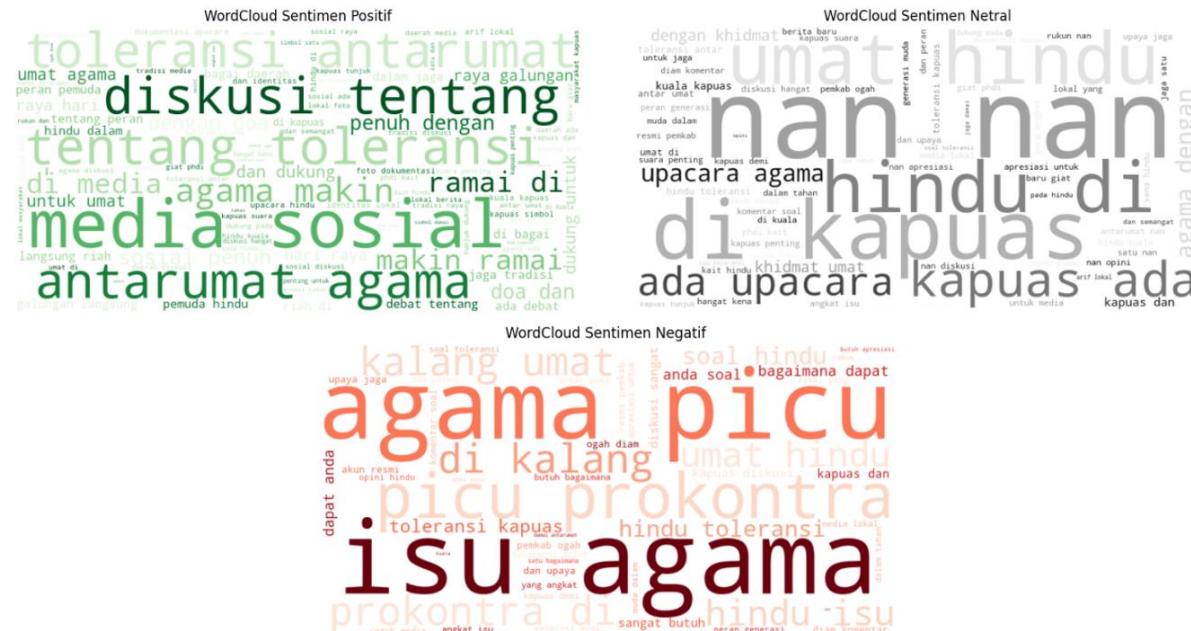


Figure 9. Word Clouds of Positive, Neutral, and Negative Sentiment on the Twitter Platform

The neutral sentiment corpus in Figure 9 highlights words related to Hindu religious activities in Kapuas Regency, such as “religious ceremonies,” “Hindu community in Kapuas,” and “solemn.” Posts in this category are primarily informative and do not elicit specific emotional responses. The WordCloud visualization in Figure 9 indicates that neutral conversations consist mainly of documentation of religious activities, event reporting, and descriptive community messages.

The negative sentiment corpus in Figure 9 is dominated by words such as “religious issues,” “pro and contra,” and “trigger.” This pattern is associated with issues that generate tension in digital conversations, including differences of opinion, responses to public events, or discussions related to diversity-related policies. Negative sentiment tends to emerge in the context of sensitive issues; however, its frequency remains lower compared to the other sentiment categories.

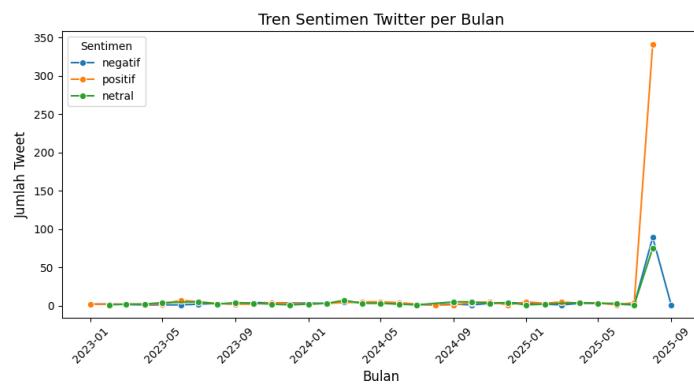
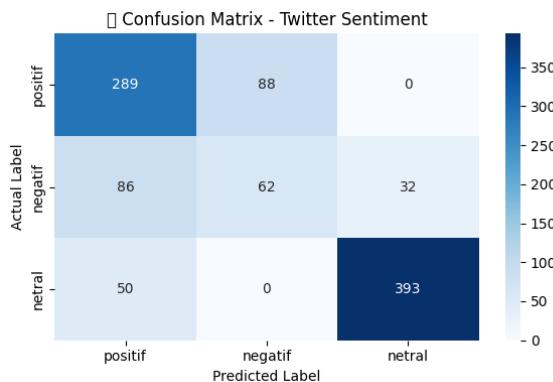


Figure 10. Monthly Sentiment Trends on Twitter

The temporal analysis of tweets presented in Figure 10 reveals a pattern that differs from that observed on Instagram. The monthly trends shown in Figure 10 indicate a sharp increase in September 2025 across positive, neutral, and negative sentiment categories. This increase is associated with the emergence of issues that attracted widespread public attention, thereby triggering rapid responses from Twitter users. The dominance of positive sentiment

during this period suggests that users expressed appreciation for dialogue initiatives, tolerance, or religious activities that became the focus of public attention at that time. Although negative sentiment also increased during this period, it remained within a moderate range and did not exhibit extreme escalation.



Gambar 11 Confusion Matrix Sentimen Twitter

The performance of the sentiment classification model was evaluated using a confusion matrix to assess classification accuracy. As shown in Figure 11, the model's predictions exhibit varying levels of accuracy across sentiment categories. For the positive class, the model correctly classified 289 instances, although 88 instances were misclassified as negative. In the negative class, the model successfully identified 62 instances correctly; however, 86 instances were misclassified as positive and 32 as neutral. The neutral class demonstrated the strongest performance, with 393 correct predictions, despite a small number of misclassifications. This pattern indicates that Twitter data exhibit greater linguistic variability, posing challenges for lexicon-based models in accurately distinguishing sentiment within certain contexts.

The discussion of model evaluation results suggests that lexicon-based approaches perform well on more formally structured data but face limitations on platforms with high linguistic diversity, such as Twitter. Nevertheless, the strong predictive accuracy for the neutral class, along with the predominance of positive and neutral sentiments, provides a sufficient analytical basis for interpreting public perceptions. These findings reinforce the view of Twitter as a dynamic space for dialogue, where the Hindu community in Kapuas Regency tends to express opinions openly while maintaining a balance between appreciation, information sharing, and constructive criticism of emerging religious issues.

5. CONCLUSION

Temporal trend analysis reveals fluctuations in interaction patterns that correspond to religious momentum or particular public issues, with distinct peaks of activity observed between Instagram and Twitter. Model evaluation using confusion matrices demonstrates that the InSet dictionary performs optimally on Instagram data, which exhibit more stable linguistic structures, while the more complex and dynamic language characteristics of Twitter result in higher classification error rates. Overall, the findings affirm that digital spaces serve as an important medium for the Hindu community in Kapuas Regency to express religious perspectives, construct collective identity, and participate in public discourse. This study also provides relevant empirical evidence to support the development of digital literacy strategies, religious communication frameworks, and community empowerment initiatives for Hindu communities as a minority group in the region.

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