

Community, Sentiment, and Topic Analysis of Public Discourse on the Issue of DPR Allowance Increases on Platform X

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Abstract

This study examines public discourse surrounding the issue of the Indonesian House of Representatives (DPR) allowance increase on Platform X (formerly Twitter) by integrating Social Network Analysis (SNA), sentiment analysis using IndoBERT, and topic modeling with Latent Dirichlet Allocation (LDA). Tweets posted between 20 and 27 August 2025 were collected, preprocessed using standard text-mining techniques, and mapped into digital communities through the Louvain community detection algorithm. The analysis identifies ten major communities with distinct thematic orientations, ranging from personalized criticism of DPR leadership and documentation of protest activities to concerns over accountability and more radical narratives, including calls for the dissolution of the DPR. Sentiment analysis reveals that discourse across all communities is predominantly negative, albeit with varying degrees of intensity. Furthermore, topic modeling demonstrates that the allowance increase functions as a catalyst for broader public dissatisfaction related to political representation, institutional transparency, and legislative performance. Overall, this study offers a comprehensive account of how public opinion is structured and disseminated within online social networks, providing empirical insights that may inform policymakers and media organizations in addressing politically sensitive issues.

Keywords: *Social Network Analysis, Sentiment Analysis, IndoBERT, Latent Dirichlet Allocation, Digital Communities, DPR Allowance, Public Opinion, Social Media.*

Introduction

Recent developments in Indonesia's political landscape indicate that public demonstrations frequently emerge as expressions of dissatisfaction with government policies or political decisions perceived as unjust. Demonstrations often serve as alternative channels for articulating public demands when formal mechanisms of representation are regarded as ineffective, prompting citizens to take to the streets to voice their concerns and aspirations. The drivers of such protests may include social inequality, controversial policy decisions, and declining public trust in political institutions. In the context of the protest opposing the DPR allowance increase on 25 August 2025, the issue triggered widespread public reactions because it was perceived as contradicting prevailing notions of social justice among Indonesian citizens. The protests that emerged cannot be understood as spontaneous events; rather, they represent the culmination of long-accumulated grievances. The demonstrations that began on 25 August were shaped by a sequence of preceding events that intensified public disillusionment, making the protests better understood as a collective expression that found a political moment for large-scale mobilization.

Alongside the expansion of the digital era, spaces of protest have increasingly extended beyond the streets into virtual arenas, where social media plays a crucial role in shaping public opinion and fostering digital solidarity. Platforms such as X (Twitter) enable the rapid, open, and geographically unbounded mobilization of issues and the dissemination of narratives. Previous studies have shown that social media functions not merely as a communication channel but also as a catalyst that amplifies collective emotions and facilitates coordination of action within society (Iwlade, 2020; Adegoke, 2021; Etim et al., 2025). At the same time, digital spaces give rise to online communities that interact with one another and form opinion clusters based on shared perspectives. This phenomenon underscores the

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importance of analyzing digital communities and public opinion on social media in order to understand the dynamics of contemporary political discourse in Indonesia.

Within digital environments, communities can be understood as groups of users who are interconnected through shared views, interests, or responses to specific issues. During the DPR protest on 25 August 2025, such communities formed organically through conversations and interactions on Platform X (Twitter). Digital communities function not only as spaces for information exchange but also as arenas for opinion formation and social solidarity. Through sustained interaction, community members tend to reinforce similar viewpoints, thereby producing distinctive patterns of communication within each group. Understanding the existence and dynamics of these communities is essential, as they reveal how public opinion is constructed, how issues circulate, and how differing perspectives may evolve into polarization within digital spaces (Nurfahmi et al., 2025; Bräutigam & Karlsen, 2025).

Examining the formation of digital communities is therefore crucial, as interaction patterns on social media do not occur randomly but instead follow relational ties among users who share similar views on particular issues (Nurfahmi et al., 2025; León-Medina, 2025). In the context of the DPR protest on 25 August 2025, public conversations on Platform X demonstrate a clear tendency for users to cluster and interact more intensively within ideologically aligned circles (Bräutigam & Karlsen, 2025). These interaction patterns give rise to clusters or communities that play distinct roles in the dissemination of information and the formation of public opinion (Yudin & Pavlov, 2023). Identifying digital communities thus becomes a critical step in understanding how protest-related discourse develops, how influence operates across groups, and to what extent interactions within communities shape the direction of sentiment and public perception in digital spaces.

Social Network Analysis (SNA) is an analytical approach used to examine patterns of relationships and interaction structures among individuals within a network. In the context of social media, SNA enables researchers to map how users are interconnected through mechanisms such as retweets, replies, and mentions, as well as to identify actors who exert significant influence over the diffusion of information (Yudin & Pavlov, 2023). This approach emphasizes that communication dynamics are shaped not only by message content but also by users' positions and roles within conversational networks. By calculating network metrics such as degree centrality, betweenness centrality, and modularity, SNA reveals community structures, information flow patterns, and organically formed opinion clusters in digital environments. Accordingly, SNA constitutes a key methodological approach in this study for understanding how discourse surrounding the DPR protest evolves within social networks on Platform X.

Within digital spaces, however, the formation of public opinion is influenced not only by community structures but also by the emotional and thematic content of ongoing conversations. While SNA is effective in uncovering relational patterns and interaction structures among users, it does not sufficiently explain how individuals express attitudes, emotions, and evaluative positions toward specific issues. For this reason, the present study complements network analysis with sentiment analysis and topic modeling to provide a more comprehensive understanding of public opinion dynamics on Platform X (Twitter) (Fan et al., 2024; Nurfahmi et al., 2025).

Understanding public opinion dynamics on social media cannot be separated from the network structures that shape user interactions. SNA is particularly valuable in this context because it demonstrates that digital conversations do not occur randomly but instead follow social relationship patterns that give rise to distinct communities. In the context of the DPR protest on 25 August 2025, users did not merely express individual opinions but actively reinforced or contested narratives through retweets, mentions, and replies. These interaction patterns generated conversational networks characterized by structural differentiation, centers of influence, and distinct discursive groups. Through SNA, this study identifies the digital communities that emerge, the actors occupying central positions, and the pathways through which information spreads and shapes public opinion (Yudin & Pavlov, 2023; Nurfahmi et al., 2025).

Sentiment analysis is then employed to complement this structural perspective. Whereas SNA addresses questions of "who interacts with whom" and "how groups are formed," sentiment analysis captures "how people feel" about the issues being discussed. Public sentiment on social media is often expressed in emotional, informal, and linguistically diverse ways, particularly on platforms such as X (Twitter). By utilizing the Bidirectional Encoder Representations from Transformers (BERT) model, this study is able to capture the complexities of Indonesian-language expression, including sarcasm, irony, and subtle forms of criticism that are common in online discourse (Fan et al., 2024; Nurfahmi et al.,

2025). This analysis provides insights into the direction and intensity of public emotions, revealing whether specific communities predominantly express criticism, support, or indifference.

Topic modeling using the Latent Dirichlet Allocation (LDA) algorithm is applied to address the question of “what is being discussed” within each community. LDA enables the extraction of dominant themes from large volumes of unstructured tweet data without requiring manual classification (Fan et al., 2024). This information is crucial for understanding the substantive dimensions underlying network structures: communities are not only separated structurally but may also differ significantly in issue focus, priorities, and narrative framing. For example, one community may center its discourse on social justice concerns, while another emphasizes institutional criticism or issues of political transparency.

The integration of these three methods SNA, sentiment analysis, and topic modeling provides a multidimensional perspective on public discourse dynamics. SNA maps community structures and influence relations; sentiment analysis reveals the dominant emotional orientations within each community; and LDA identifies the thematic content that shapes each community’s discursive identity (Bräutigam & Karlsen, 2025; León-Medina, 2025). Consequently, this study examines not only the content of online conversations but also the social and emotional contexts that shape public narratives.

This multidisciplinary approach is particularly relevant to the DPR protest issue, as public opinion on social media is often fragmented and shaped by distinct groups with mutually reinforcing communication patterns. Without an integrated analysis of network structures and content, the dynamics of opinion formation and narrative diffusion cannot be fully understood. Therefore, the combined use of SNA, LDA, and BERT in this study provides an analytical framework for explaining how digital communities emerge, how they interpret the DPR protest issue, and how public perceptions spread and contribute to opinion polarization on Platform X.

Based on the issues outlined above, the objectives of this study are as follows:

1. To identify the digital communities that form within public conversations surrounding the DPR protest on Platform X.
2. To identify the dominant topics and public sentiment expressed within each community in discussions of the DPR protest on Platform X.

Research Method

Research Design

Research design refers to a systematic plan for collecting, processing, and analyzing data in order to address research questions in a structured manner (Sekaran & Bougie, 2016). This study employs a research design developed to support the analysis of public opinion dynamics and the formation of digital communities in the context of the DPR protest on 25 August 2025. The analytical focus is directed toward understanding how protest-related issues evolve on social media, which actors play dominant roles, and which topics and sentiments prevail in public discourse.

This study adopts an exploratory quantitative approach, as it seeks to uncover interaction patterns, community structures, and trends in public opinion derived from unstructured data sourced from Platform X (Twitter). The quantitative approach enables the measurement of digital social phenomena through numerical data, while its exploratory nature allows for the identification of emerging patterns and relationships that are not predetermined.

Research Instruments

This subsection describes the tools and software employed throughout the research process to support data collection, processing, analysis, and presentation. The primary instruments used include the Python programming language for data processing and analysis, Visual Studio Code (VS Code) as the development environment, Gephi for visualizing social network structures generated through SNA, and Microsoft Excel for statistical data handling and the preparation of final outputs.

Data Collection

Data collection represents the initial stage of this study and aims to obtain a dataset of public conversations on Platform X (Twitter) related to the protest against the DPR allowance increase on 25 August 2025. The data were systematically collected using Twitter API v2 to ensure relevance, validity, and the availability of complete metadata required for Social Network Analysis (SNA), topic modeling, and sentiment analysis.

As outlined in the research design, data collection followed a quantitative API-based scraping approach using selected keywords and hashtags representative of the protest issue. The data collection period spanned one month before and one month after the protest date (25 July 2025–25 September 2025) to capture discourse dynamics during the pre-protest, peak protest, and post-protest phases.

The raw dataset includes tweet text, usernames, timestamps, interaction data (retweets, replies, and likes), and conversation structures (conversation_id and referenced_tweets). These metadata are essential for constructing network graphs, conducting topic modeling, and extracting public sentiment within each identified digital community.

Results and Discussion

Scenario Experiments

This subchapter describes the design of the experiment carried out in the research, including the flow of analysis, the methods used, the modeling configuration, and the purpose of the evaluation. The experiment was conducted to analyze the structure of the digital community, public sentiment patterns, and conversation topics on the issue of DPR allowances through a combination of Social Network Analysis (SNA) methods, IndoBERT-based sentiment analysis, and topic modeling using Latent Dirichlet Allocation (LDA).

Dataset Validation

Dataset validation is carried out to ensure that the labeled data used in sentiment analysis has an adequate level of reliability. After the Fleiss' Kappa calculation script was run on the annotation results of three annotators, a coefficient value of 0.5782 was obtained. This value falls into the category of Moderate Agreement according to Landis and Koch (1977) and shows that although annotators do not always give the same label to every tweet, their scoring patterns are consistent and much better than agreements that occur by chance.

This value is also in line with the findings of previous research that highlighted the characteristics of social media conversations that are often ambiguous, containing sarcasm, irony, and variations in informal language. Studies on toxicity during the Mpox crisis noted that annotations of public comments generally resulted in moderate levels of agreement due to the diversity of user expression on social media. Thus, the Fleiss' Kappa value of 0.5782 is considered quite good for the context of this study. The differences in perception that arise from the language characteristics of social media are not large enough to significantly degrade the quality of the dataset. Therefore, this dataset labeled as the result of manual annotation is considered suitable for use as a ground truth in the training and evaluation of the IndoBERT model at the sentiment analysis stage.

Validation of Sentiment Analysis Models

Model performance was evaluated using five-fold stratified cross-validation, and the results are summarized in Table 1 as averaged metrics across all folds. The IndoBERT model achieved an overall accuracy of 0.701, with a macro-averaged F1-score of 0.612. The use of macro F1-score is particularly important in this study due to the imbalance among sentiment classes, as it provides a balanced evaluation of the model's performance across positive, negative, and neutral categories. Overall, the results indicate that IndoBERT demonstrates stable and reliable performance for sentiment classification in Indonesian social media discourse, which is characterized by informal language, sarcasm, and strong emotional expressions.

Table 1. Overall Model Performance Table

Metric	Value
Accuracy	0.701
Precision	0.649
Recall	0.597
F1-score (macro)	0.612

The moderate macro-averaged F1-score obtained by IndoBERT indicates that sentiment classification on Indonesian political discourse remains challenging. Therefore, this study evaluates additional BERT-based models, BERT Base and Multilingual BERT (mBERT) to assess whether alternative pretraining strategies can improve balanced sentiment classification performance.

Table 2. BERT-based Model Comparison Table

Model	Accuracy	Precision	Recall	F1-score
BERT base	0.680	0.629	0.597	0.595
Multilingual BERT	0.678	0.598	0.588	0.593
IndoBERT	0.701	0.649	0.597	0.612

Overall, these results show that the IndoBERT model consistently achieves the best overall performance compared to BERT Base and Multilingual BERT in capturing public sentiment patterns within non-standard Indonesian social media contexts, which are generally full of irregular variations of slang, abbreviations, and sentence structures. Across multiple evaluation metrics, including accuracy, precision, recall, and macro-averaged F1-score, IndoBERT demonstrates superior or comparable performance, with the highest accuracy (0.701), precision (0.649), and F1-score (0.612) among the evaluated models. These results are consistent with previous studies that reported the advantages of Indonesian-specific pre-training for sentiment analysis on social media data, where performance improvements tend to be moderate but stable. The relatively small performance gaps across models further indicate that the observed differences are systematic rather than driven by overfitting to a particular subset of the data.

Thus, the sentiment model used in this study can be considered reliable enough to produce automatic sentiment labeling across the entire corpus of tweets analyzed in the next section.

Sentiment Analysis Results

Sentiment analysis was conducted to understand the emotional tendencies of the public in responding to the issue of the increase in DPR allowances, as reflected in conversations on platform X. After all tweets went through preprocessing stages and manual annotation, a fine-tuned IndoBERT model was used to classify sentiments into three categories: positive, neutral, and negative. This chapter presents the model evaluation results, the overall sentiment distribution across the corpus, and an initial interpretation of the emerging sentiment patterns. This stage serves as an important foundation before the subsequent analysis in Chapter 5 on community structure and conversational dynamics, as public sentiment is one of the key indicators for understanding societal perceptions of controversial political policies.

Overall Sentiment Distribution

The results of the sentiment analysis across all tweets show that public discourse regarding the issue of increasing DPR allowances is overwhelmingly dominated by negative sentiment. A total of 5,836 tweets (67.63%) were classified as negative, indicating that the majority of users expressed criticism, disappointment, anger, or other forms of disapproval toward the issue. This dominance of negative sentiment is consistent with the nature of political issues that touch on public sensitivity, particularly those related to perceptions of injustice and abuse of power.

Tweets with positive sentiment amounted to 2,199 tweets (25.52%). In this context, positive sentiment does not always reflect support for the policy itself, but often takes the form of support for protest actions, satirical remarks, or expressions of solidarity among users. Therefore, positive sentiment in controversial issues such as this more often represents support for social movements rather than approval of the institution or policy.

Meanwhile, neutral sentiment was very limited, totaling only 590 tweets (6.84%), indicating that public discourse was highly opinionated and emotional. The low percentage of neutral sentiment suggests that users on platform X tend to express explicit judgments on the issue either in the form of criticism or support rather than merely sharing information without opinion.

Table 3. Distribution of Indobert Results Sentiment

No	Sentiment	Quantity
1	Positive	2199
2	Negatives	5836
3	Neutral	590

Through the table above, you can see the distribution of each sentiment. This distribution shows that the public discourse on the issue of increasing the DPR allowance takes place in an intense and emotionally stressful atmosphere, with a strong and dominant tendency of negative sentiments.

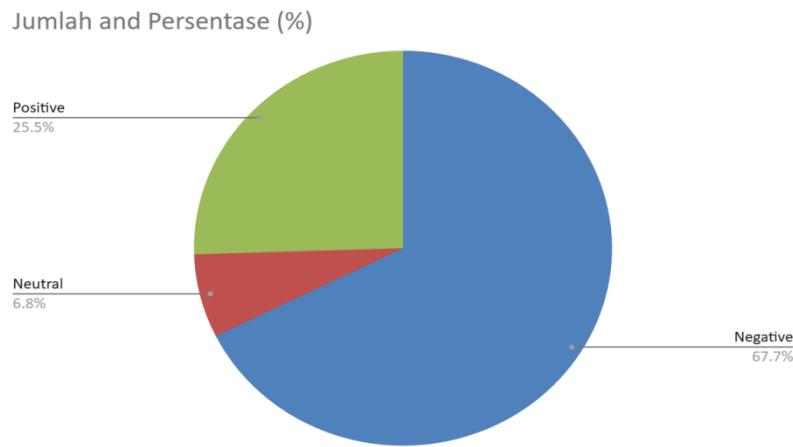


Figure 1. Overview of Sentiment Distribution

Sentiment Interpretation

The interpretation of the sentiment distribution shows that public opinion is generally critical of the issue of increasing DPR allowances. The proportion of negative sentiment, which accounts for more than two-thirds of all conversations (67.63%), indicates a significant level of public dissatisfaction. This can be linked to the sensitivity of economic-political issues, perceptions of social injustice, and low public trust in political institutions.

Although positive sentiment reaches 25.52%, observational patterns indicate that many positively classified tweets do not point to acceptance of the policy, but rather represent support for protest actions or satirical criticism of the DPR. Therefore, positive sentiment in this context cannot be interpreted as legitimization of the policy, but instead as a collective expression supporting public movements.

Neutral sentiment, accounting for only 6.84%, further reinforces the understanding that this discourse is emotional and openly expressive. Public conversations do not merely convey information, but involve strong opinions and attitudes. The minimal presence of neutral sentiment is also consistent with the characteristics of political discussions on social media, which are generally polarizing and highly contested.

Overall, this sentiment distribution pattern indicates that the issue of increasing DPR allowances triggered intense public reactions, dominated by negative emotions and accompanied by expressions of social support in the form of positive sentiment. These findings provide an important foundation for further analysis of how sentiments are distributed across communities and how they relate to topic dynamics in digital conversations.

Community Detection Results

Community detection analysis was conducted to identify the community structure within the conversation network surrounding the issue of DPR allowances on platform X (Twitter). Community structure is crucial for understanding how public opinion is formed, how certain narratives are reinforced, and how groups of users interact within the context of political discourse. This approach aligns with previous studies that emphasize the role of social media in shaping collective identity, mobilization pathways, and echo chambers in the dynamics of digital protest.

The Ten Largest Communities

This study highlights the ten largest communities because they are considered to represent the core of conversational dynamics, exhibit the highest levels of interaction intensity, and play a significant role in the formation and dissemination of narratives related to the issue of DPR allowances on platform X. These communities are the focus of further analysis because their size and activity enable a more

meaningful exploration of discourse patterns, directions of public opinion, and intergroup relationships compared to smaller communities, which consist of minimal nodes and fragmented conversations.

The results of the social media analysis show the distribution of the communities and members of each of these communities which can be seen in the table below:

Table 4. Largest Community Tables

No	Community ID	Quantity
1	33	286
2	20	247
3	161	210
4	773	206
5	207	197
6	847	176
7	51	168
8	164	142
9	984	136
10	610	128

Community Interpretation

Community interpretation was conducted to understand conversation patterns, discursive orientations, and tendencies in public opinion positions that emerge within each group. Although the Louvain algorithm automatically clusters nodes based on relational structures (retweets, mentions, replies), researchers must identify the social meaning of each community by examining the content of conversations produced by the users within them.

The following analysis was carried out by examining samples of tweets from the ten largest communities (see Table 5.x), including dominant keywords, types of arguments circulating, actors or accounts that frequently become centers of interaction, and how each community responds to the issue of increasing DPR allowances. A summary of community characteristics along with example tweets is presented in the following table.

Community 33

Community 33 is the largest community within the conversation network related to the DPR allowance issue, consisting of 286 accounts. Based on content analysis of the conversations, this community exhibits a strongly critical discursive tendency toward the Speaker of the DPR, the Indonesian Democratic Party of Struggle (PDIP), and political leadership structures associated with the party. The narratives that emerge are de-legitimizing in nature, aiming to undermine the credibility of political figures and institutions directly through harsh criticism, sarcasm, and expressions of anger.

The interpretive approach applied to this community follows the network-based discourse analysis method described by Danaditya et al. (2022), which emphasizes that communities in social media graphs are generally formed by aligned narratives or shared discursive patterns produced by their members. Accordingly, the identity of Community 33 can be understood through the uniformity of themes, reference actors, and dominant sentiments displayed by its members.

From the examination of tweets produced by community members, at least three main discursive patterns can be identified:

1. Criticism of the legitimacy and integrity of the Speaker of the DPR
2. Linking the issue to PDIP as a political entity
3. Expressions of negative emotions such as anger, disappointment, and sarcasm

With these characteristics, Community 33 can be categorized as the most vocal opposition community regarding the issue of increasing DPR allowances. This community not only challenges the policy itself but also produces narratives that undermine the personal legitimacy of public officials perceived to be responsible for the issue.

Table 5. Examples of Community Tweets 33

No	Username	Example Tweet	Sentimen (BERT)
1	anti55boong	"The promise continues, he said the party of the small people, but why did the speaker of the House of Representatives approve the increase in the allowance of the DPR?"	Positive
2	Robiaji86	"Even though he is one of the DPR who made controversial statements that provoked public anger."	Negative
3	IreneJuni_	"The fear of the PDIP baser is clear that the speaker of the House of Representatives is dr Banteng with a white snout."	Negative
4	Abanese	"Don't you dare to be angry with the Speaker of the House of Representatives? "Oh, yes, I forgot about you, my son."	Negative
5	motifmati	"Hey. How do you become the Speaker of the House of Representatives, how do you see the mace being useful? This is a more critical situation, do something... Just step back."	Negative

Community 33 plays a significant role as a central producer of anti-DPR and anti-PDIP discourse within conversations surrounding the allowance issue. The narrative structure of this community reflects a collective effort to:

1. Reinforce public perceptions that the Speaker of the DPR is unfit to lead,
2. Associate institutional failures with specific political parties, and
3. Build social pressure through open and sarcastic criticism.

With consistent themes and a high intensity of criticism, this community becomes one of the main drivers of discursive polarization in the DPR allowance issue.

Community 20

Community 20 is the second-largest community within the conversation network related to the DPR allowance issue, consisting of 247 accounts. Based on content analysis, this community displays a discourse focused on the relationship between protest actions, the DPR's responses, and the dynamics involving security forces. Unlike Community 33, which is more personal and targets specific figures, this community presents a more performative and reactive narrative—evaluating DPR actions based on protest pressure, institutional responses, and the resulting social impacts. The discourse often portrays the DPR as an institution that only takes action when provoked, while positioning the public as an actor that must continuously speak out for change to occur.

The interpretive approach applied to this community follows the network-based discourse analysis method described by Danaditya et al. (2022), which emphasizes that communities in social media graphs are formed through aligned narratives or shared discursive patterns produced by their members. Accordingly, the identity of Community 20 can be understood through the uniformity of interaction themes, the focus of criticism, and recurring sentiments regarding the relationship between protests, the DPR, and security apparatuses.

From the examination of tweets produced by community members, at least three main discursive patterns can be identified:

1. Criticism of the DPR's response, which is perceived as changing only due to protest pressure
2. Emphasis on the dynamics of security forces during demonstrations

3. Distrust toward party elites and political structures

Several tweets link DPR decisions to the dominance of party elites, mentioning "party leaders," "supporting parties," or political buzzers, indicating skepticism toward the independence of decision-making within parliament.

With these characteristics, Community 20 can be categorized as a group that focuses its criticism on the institutional behavior of the DPR and protest dynamics rather than solely on individual figures. This community views demonstrations as an effective mechanism of public oversight and believes that policy changes occur only when state institutions are pressured by mass action.

Table 6. Examples of Community Tweets 20

No	Username	Example Tweet	Sentimen (BERT)
1	KompasTV	"Latest! "A protest against the use of the D.C. Chamber of Commerce in front of the D.C. Chamber of Commerce."	Negative
2	TriUtomo31	"If there is no demonstration, the allowance of the House of Representatives will increase, sir... State expenditure sucks in there."	Positive
3	benjidarma	"If there was no demonstration yesterday until there was riot, would the attitude of the House of Representatives be like this? They must be 'tampered with' first."	Negative
4	cak_sys	"Demonstrations will not occur excessively if the House of Representatives and the Government act wisely, meet and listen to the people's complaints."	Negative
5	Muna13998	"If there was no live, maybe we wouldn't know the behavior of the police and officials who danced in the House of Representatives."	Negative

Community 20 plays an important role as a group that frames the DPR allowance issue within the context of protest actions, institutional performance, and the responses of security forces. The narrative structure of this community reflects a collective effort to:

1. Emphasize that public pressure through demonstrations is necessary to prompt the DPR to change,
2. Link policy quality to the behavior of party elites, and
3. Highlight power imbalances between the public, security forces, and the DPR.

With consistent themes and such narrative orientation, Community 20 becomes one of the key discursive centers that emphasize the cause-and-effect relationship between public action and state institutional responses in the issue of increasing DPR allowances.

Community 161

Community 161 is the third-largest community within the conversation network related to the DPR allowance issue, with a total of 210 member accounts. Based on content analysis, this community exhibits a critical but more layered discourse, as it not only targets the DPR and the Speaker of the DPR, but also links them to the President and broader elite political dynamics. The narratives that emerge take the form of systemic critique, viewing the DPR allowance issue as part of a wider structural failure in state power relations, executive-legislative interactions, and the dominance of certain political families.

The interpretive approach applied to this community follows the network-based discourse analysis method described by Danaditya et al. (2022), which emphasizes that communities in social media graphs are formed through aligned narratives or shared discursive patterns produced by their members. Accordingly, the identity of Community 161 is shaped by the consistency of structural criticism themes, the cross-institutional linking of political figures, and expressions of frustration directed at a power framework perceived as unaccountable.

From the examination of tweets produced by community members, at least three main discursive patterns can be identified:

1. Structural criticism of political elites (the Speaker of the DPR, the President, and the Chief of Police)
2. Narratives of institutional failure and the erosion of the DPR's representative function
3. Expressions of anger that generalize criticism toward the state as a whole

With these characteristics, Community 161 can be categorized as a community that views the DPR allowance issue through the lens of broader political system failure rather than as a mere policy dispute. This community produces narratives that unify criticism of the DPR, the President, the Chief of Police, and oligarchic political structures, thereby functioning as a key amplifier of systemic opposition discourse in the public sphere.

Table 7. Examples of Community Tweets 161

No	Username	Example Tweet	Sentimen (BERT)
1	LexWu_13	"When there is a big demonstration to the DPR... Gemoy gives an award... as if to provoke public emotions."	Positive
2	BeckzJr7	"Why are these people... not the president, not the chairman of the House of Representatives, it's just a joke."	Negative
3	CT Scan	"He who from the beginning approved the allowance of the House of Representatives as high as the sky... This demonstration made Affan run over by the police."	Positive
4	YusufWi70781128	"Lo as the speaker of the House of Representatives also does not function except to read the text of the speech... silence is silent."	Negative
5	Irbosxatrian	"As long as the speaker of the House of Representatives is still the grandson of the president, there is no way Indonesia can be calm."	Positive

Community 161 plays a crucial role as a central producer of narratives offering structural criticism of national power relations. The narrative structure of this community reflects a collective effort to:

Frame the allowance issue as a symptom of a dysfunctional political system,

Emphasize that the DPR's failures are inseparable from elite dominance and inter-institutional power relations, and

Reinforce the perception that the state operates without public accountability, thereby triggering collective anger.

With consistent themes and comprehensive critical intensity, Community 161 becomes one of the driving forces behind the formation of systemic opposition discourse in conversations surrounding DPR allowances.

Community 773

Community 773 is the fourth-largest community within the conversation network concerning the DPR allowance issue, consisting of 206 member accounts. Based on content analysis, this community exhibits a highly expressive and emotional discourse, dominated by sharp criticism of the DPR, the Speaker of the DPR, and the gap between political promises and the economic conditions faced by the public. Unlike communities that focus on single actors or institutional dynamics, Community 773

foregrounds narratives emphasizing structural injustice, public frustration, and distrust toward political elites. The emerging discourse can be characterized as anger-driven discourse, in which public anger is expressed through sarcasm, direct condemnation, and criticism of symbols of power.

Table 8. Examples of Community Tweets 773

No	Username	Example Tweet	Sentimen (BERT)
1	Sandystarkjr	"Really stupid, this is the first speaker of the House of Representatives, who lost his life, not a tai motorcycle!"	Negative
2	marcerrinn	"Why can there be such a big demonstration... Members of the House of Representatives increase their salaries by 100 million a month. A very unfair gap."	Neutral
3	Cocottetanggaa	"The protesters are not clear... What is needed is the death penalty... oligarchs have power..."	Negative
4	Stuttgart	"@DPR_RI don't you have a lot of time in the demo? Do you want to make a difference again?"	Negative
5	waskitachandra	"The target of the protesters is for all members of the House of Representatives to prioritize empathy for the people."	Neutral

Community 773 plays an important role as a group that directly voices public anger through sharp criticism, emotional language, and an emphasis on structural injustice. The narrative structure of this community reflects a collective effort to:

Highlight the moral and economic gap between the DPR and the public,

Reinforce the perception that DPR figures particularly the Speaker of the DPR are insensitive to public suffering, and Question the effectiveness of a political system perceived to be dominated by oligarchic interests.

With consistent themes and strong emotional expression, Community 773 becomes one of the main drivers of the spread of anger and dissatisfaction in public discourse regarding DPR allowances.

Community 207

Community 207 is the fifth-largest community within the conversation network related to the DPR allowance issue, consisting of 197 accounts. Based on content analysis, this community exhibits an extremely harsh and radical discourse toward the DPR as an institution. Unlike other communities that focus on specific figures or policies, this community advances a narrative of comprehensive delegitimization viewing the DPR as no longer fit to function as a representative body of the people. Many narratives question the very existence of the DPR, criticize the behavior of its leaders, and even advocate extreme alternatives such as the dissolution of the legislative institution.

The interpretive approach applied to this community follows the network-based discourse analysis method described by Danaditya et al. (2022), which emphasizes that communities in social media graphs are formed through aligned narratives or shared discursive patterns produced by their members. Accordingly, the identity of Community 207 can be understood through the uniformity of institutional criticism themes, rejection of DPR legitimacy, and expressions of disappointment directed at the institution's failure to perform its representative function.

From the examination of tweets produced by community members, at least three main discursive patterns can be identified:

1. Institutional delegitimization narratives targeting the DPR

2. Harsh criticism of the Speaker of the DPR and party elites
3. Dissatisfaction with how the DPR responds to demonstrations

With these characteristics, Community 207 can be categorized as the most outspoken anti-legislative community, rejecting the legitimacy of the DPR both structurally and morally. This community does not merely contest specific policies, but questions the very existence of the DPR as a representative institution.

Community 847

Community 847 is the sixth-largest community within the conversation network related to the DPR allowance issue, comprising 176 accounts. Based on content analysis, this community displays a diverse yet consistently critical discourse toward the DPR, the government, and party elites. Unlike other communities that tend to focus on a single figure or a single form of criticism, Community 847 demonstrates a more complex and layered discursive pattern, encompassing ideological critique, evaluation of elite behavior, and the reframing of the meaning of demonstrations. The narratives that emerge take the form of discursive reframing, namely efforts to reinterpret the actions of the DPR and the government through the lens of political representation inequality and elite insensitivity to public suffering.

The interpretive approach applied to this community follows the network-based discourse analysis method described by Danaditya et al. (2022), which emphasizes that communities in social media graphs are formed through aligned narratives or shared discursive patterns produced by their members. Accordingly, the identity of Community 847 can be understood through the consistency of ideological criticism themes, attention to party dominance and power relations, and sensitivity to protest and media dynamics.

Conclusion of Community Detection Results

The results of the community detection analysis indicate that conversations regarding the issue of increasing DPR allowances on platform X are fragmented into ten main communities, each exhibiting distinct discursive patterns, issue focus, and orientations of criticism. Although all communities tend to express dissatisfaction with the DPR, the intensity, depth of criticism, and narrative direction vary ranging from personal criticism of the Speaker of the DPR, to institutional criticism of representative functions, and to comprehensive delegitimization of the political system.

The diversity of community themes reflects that public opinion is not homogeneous: some communities emphasize leadership failure, others focus on protest dynamics and security forces, while still others highlight broader structural contexts such as the role of political parties, oligarchy, and national power relations. These findings demonstrate how the DPR allowance issue functions as a trigger for broader conversations about political legitimacy, democratic quality, and the relationship between the state and the public.

Tabel 9. Community Detection Conclusion Table

No	Community ID	Number of Members	Main Theme of Discourse	Focus on criticism
1	33	286	Delegitimization of the Speaker of the House of Representatives	Personal criticism, attacks on PDIP, people's anger
2	20	247	Dynamics of the demonstration and response of the House of Representatives	The House of Representatives moves only because of the demonstrations, the role of the apparatus
3	161	210	Structural criticism of the elite	President-DPR Relations, the Failure of the Political System
4	773	206	Discourse of anger and injustice	Economic inequality, official arrogance, public emotions

Table 10. Continued Community Detection Conclusion Table

No	Community ID	Number of Members	Main Theme of Discourse	Focus on criticism
5	207	197	Delegitimization of the House of Representatives	Calls for the dissolution of the House of Representatives, institutional criticism
6	847	176	Ideological & structural criticism	Party domination, criticism of the government and the DPR, hoaxes of demonstrations
7	51	168	Evaluative critique of representation	Weakness of the leadership of the House of Representatives, failure of dialogue
8	164	142	Moral & institutional criticism	Violence by the authorities, insensitivity of the DPR, party domination
9	984	136	Public outrage & radical demands	Calls for hard action, references to revolution, anti-elites
10	610	128	Strategic criticism and power relations	Elite maneuvers, absence of the House of Representatives, oligarchy

Overall, the interpretation of the ten largest communities shows that conversations about DPR allowances do not merely reflect public rejection of the policy, but also reveal deeper layers of discourse related to political legitimacy, institutional performance, and state–citizen relations. The diversity of critical patterns ranging from personal attacks on the Speaker of the DPR, to institutional criticism of representative functions, and to narratives of structural delegitimization—indicates that the DPR allowance issue serves as a catalyst that amplifies public distrust toward political elites and the democratic system more broadly. Thus, community detection not only reveals the structure of the conversation network, but also helps map the orientations of public opinion formed within it, which in turn provides an important foundation for topic analysis in the following subsection.

Topic Modeling Results

At this stage, topic analysis was conducted using Latent Dirichlet Allocation (LDA) for each major community identified through the Louvain algorithm. The analysis was performed by dividing tweets according to sentiment labels (Positive, Negative, Neutral) in order to identify distinct discursive patterns corresponding to public emotions. In addition, model quality was evaluated using coherence scores, ensuring that the number of topics selected for each model was not determined subjectively but rather based on quantitative evaluation metrics.

Model Evaluation and Topic Number Selection

Model evaluation was carried out using the topic coherence (c_v) metric to determine the number of topics that most accurately represent the discursive structure of the dataset. Testing was conducted for 1 to 10 topics with variations in iterations (passes) ranging from 10 to 50. The results show that coherence values increased as the number of topics grew, with the highest coherence achieved by the model with 10 topics and 40 passes, yielding a coherence score of 0.4673. This value falls within a range considered acceptable for social media data, which are characterized by informal language and high levels of textual noise, as noted in previous studies.

Table 11. Tables of Obtained Coherence Values

Number of Topics	Iteration To -				
	10	20	30	40	50
1	0,285	0,285	0,283	0,283	0,283
2	0,335	0,335	0,335	0,335	0,335
3	0,418	0,424	0,424	0,424	0,427
4	0,410	0,413	0,407	0,407	0,407
5	0,408	0,413	0,418	0,418	0,418
6	0,402	0,401	0,398	0,398	0,401
7	0,419	0,419	0,432	0,434	0,434

8	0,432	0,442	0,442	0,443	0,444
9	0,432	0,438	0,438	0,433	0,423
10	0,451	0,458	0,460	0,467	0,467

Based on these results, the model with 10 topics was selected as the final model because it provides the best balance between semantic coherence and interpretive granularity. Models with fewer topics exhibited lower coherence, indicating that the resulting topics were less capable of representing the diversity of issues present in public conversations regarding DPR allowances.

Topic Interpretation per Community

Community 33

Topic modeling was conducted separately for each community using the LDA algorithm with 10 topics ($k = 10$) and 40 iterations (passes = 40), in accordance with the coherence testing results discussed in the previous subsection. For each community, the list of words with the highest weights (bag of words) in each topic was examined and then assigned a primary topic label based on semantic proximity and relevance to the DPR allowance issue.

This section presents an example of topic interpretation for Community 33, as the largest community within the network and one that simultaneously represents the strongest pattern of oppositional discourse toward the DPR and its institutional leadership.

Table 12. Community Topics 33

No.	Term (Bag of Words)	Main Topics
1	House of Representatives, Chairman, Law, No, Lo, Party, Wrong, Stupid, Madam, President	Harsh criticism of the Speaker of the House of Representatives, the party, and the product of the law
2	House of Representatives, Chairman, Party, No, Demonstration, Bull, Removal, People, Bill, Red	Delegitimization of PDIP/bull and calls for the removal of the Speaker of the House of Representatives
3	DPR, Chairman, People, Mrs., Demo, No, PDIP, Maharani, Representative, Afraid	Personalization of criticism of Puan Maharani as a symbol of the failure of the House of Representatives
4	House of Representatives, Chairman, People, Demo, Resign, Lu, Party, Alcohol, Ciduk, Null	Demands for resignation and links to party issues/Liquor scandal
5	No, DPR, Demo, Chairman, Kebo, Jogos, People, Lu, Demand, Members	Dehumanization and humiliation of the Speaker of the House of Representatives and the political elite
6	House of Representatives, Chairman, No, People, Demo, Member, Vote, You, Where, Dance	Evaluation of political choices and representation of members of the House of Representatives who are considered to have failed
7	DPR, Chairman, Demonstration, Member, No, People, Failed, People, Support, No	Criticism of the allowances and malfunctions of DPR representatives
8	House of Representatives, Chairman, No, Party, Demo, No, Ada, People, Indonesia, Mrs.	Criticism of nepotism and the proximity of the Speaker of the House of Representatives to the ruling party

Based on the table, it is evident that all topics within Community 33 revolve around the figure of the Speaker of the DPR, PDIP/the bull symbol, and the DPR institution as a whole. Topic variation mainly appears in the forms of critical articulation—ranging from direct attacks on the capacity and morality of the Speaker of the DPR (Topics 1, 3, and 5), narratives of delegitimization targeting the supporting party (Topics 2 and 8), to linking the allowance issue with personal scandals such as parties

or alcohol consumption (Topic 4). Other topics emphasize evaluations of voters' political choices and the representative function of the DPR (Topics 6 and 7), which are perceived to have failed due to the approval of policies that do not favor the public. Substantively, the main issues emerging in Community 33 can be summarized into three discursive clusters:

1. A crisis of the Speaker of the DPR's personal legitimacy, who is considered unfit to lead and becomes the target of insults and calls for resignation;
2. Structural criticism of PDIP as the party controlling the DPR, perceived as responsible for the allowance increase and the institution's arrogant stance;
3. Rejection of DPR allowances and the failure of representative functions, in which DPR political decisions are viewed as contradicting public notions of justice.
4. These topics reinforce earlier findings that Community 33 serves as the most vocal center of oppositional discourse against the DPR regarding the allowance issue.

Community 20

Table 13. Community Topic Table 20

No.	Term (Bag of Words)	Main Topics
1	DPR, Demo, no, Demonstrate, Pillar, Kompas, Chairman, People, Building, Don't, Member	Criticism of the increase in DPR allowances and public appeal for the DPR to be responsive
2	demonstration, dpr, allowance, no, street, house, people, government, salary, make	Rejection of allowances and demands for the use of the budget for the needs of the people
3	DPR, Demo, No, Chairman, People, Members, Indonesia, Party, No, President	Frustration with the political elite and the DPR who are perceived as non-partisan
4	DPR, People, Chairman, Party, People, No, Demonstration, Down, Pillar	Pressure on the leadership of the House of Representatives and criticism of the party-public policy relationship
5	DPR, Demo, No, People, Law, Chairman, Office, Lo, Fast, Work, Pillar	Criticism of legislative performance & legislative processes that are considered problematic
6	demonstration, no, dpr, will, like, no, demand, no, no, there is, people	Call for further action and distrust of the DPR's political process
7	House of Representatives, Chairman, Demonstration, Support, Member, No, Representative, People, Building, Police	Anger at the DPR leaders and security issues during the rally
8	DPR, Demo, No, People, There, Riot, You, Leader, Wise, Member	Narrative about the riots of the demonstrations and moral criticism of the DPR
9	DPR, no, demonstration, people, chairman, don't, omon, there, people, no	Vulgar criticism of members and speakers of the House of Representatives because they are considered passive

Community 20

Community 20 exhibits a discourse pattern that rejects the DPR allowance policy while intertwining moral and political criticism of institutional leadership. Compared to Community 33—which aggressively targets the Speaker of the DPR Community 20 tends to be more normative, emphasizing the following themes:

1. Rejection of Allowance Increases and Budget Management

Many topics revolve around demands that public funds be allocated to essential sectors (roads, housing, public welfare) rather than increasing DPR allowances.

2. Criticism of the DPR and Its Relationship with Parties and the President

Topics 3, 4, and 9 reflect distrust toward political elites (the Speaker of the DPR and ruling parties), who are perceived as ignoring public aspirations.

3. Mass Action Narratives and Protest Dynamics

Topics 6–8 present discourse surrounding demonstrations, unrest, security issues, and the responses of law enforcement.

4. Evaluation of the People's Representative Function

Topics 1 and 5 emphasize the perception that the DPR has failed to perform its representative role and to communicate effectively with the public.

Research Implications

This study provides several important implications directly related to the dynamics of public opinion regarding the increase in DPR allowances as reflected in conversations on platform X. The findings show that dominant sentiment tends to be negative and polarized, with criticism focused on DPR leadership, perceived injustice in allowances, and institutional failure to fulfill representative functions. Community analysis and topic modeling reveal that public debate does not occur merely at the level of spontaneous reactions to policy, but is also shaped by collective memory, political affiliation, and structural perceptions of DPR legitimacy.

Accordingly, the results of this study have broad implications for both the development of digital political communication theory and the practical formulation of public policy by the government and legislative institutions.

Theoretical Implications

This research enriches academic studies on the use of Social Network Analysis (SNA) and LDA-based topic modeling to understand the dynamics of political conversations on social media. The integration of community detection (Louvain) and topic modeling enables a deeper mapping of how digital groups form, reinforce, and disseminate specific political narratives. This approach demonstrates that public opinion on digital platforms is not homogeneous, but fragmented into communities with distinct discursive characteristics and varying intensities of criticism.

From a sentiment analysis perspective, the use of BERT-based models proves effective in capturing nuances of criticism and sarcasm that frequently appear in political conversations. This reinforces findings in the literature that transformer-based models are better at contextual understanding than traditional lexical methods, particularly in texts containing negative tones or personal attacks.

Theoretically, this study contributes to:

1. An understanding of how digital community structures influence the form and direction of political discourse;
2. The use of community-level LDA as a novel approach to uncover differing dominant topics across groups;
3. The development of Indonesian-language political sentiment analysis methodologies using IndoBERT.

Practical Implications for Government and Policymakers

The findings indicate that public criticism of DPR allowances is not solely related to budget size, but also reflects a broader crisis of trust in legislative institutions—particularly regarding transparency, leadership ethics, and responsiveness to public aspirations. Strong negative sentiment spreading across communities signals a significant emotional distance between the DPR and the public.

Practical implications for the DPR and policymakers include:

1. Transparency in Allowance and Budget Policies

Clear and open explanations regarding legal foundations, decision-making mechanisms, and allowance evaluations are needed to reduce public speculation.

2. Improved Responsiveness During Public Opinion Crises

The DPR should develop faster and more open public communication protocols, especially during controversies that trigger demonstrations.

3. Public Engagement in the Legislative Process

Expanding participatory access through open public hearings, online consultations, and accessible feedback mechanisms.

4. Evaluation of Leadership and Legislative Ethics

Strong criticism directed at the Speaker of the DPR and legislative elites highlights the need for ethical and representational evaluation to restore public trust.

5. Mitigation of Digital Polarization

The DPR and government should consider communication strategies to prevent the escalation of disinformation and polarization, particularly on sensitive issues such as allowances and state finances.

Through these measures, the government and the DPR can improve relations with the public, enhance institutional credibility, and reduce the potential for polarization arising from policies that are not communicated effectively.

Conclusion

This study aims to understand the dynamics of public conversations surrounding the issue of increasing DPR allowances through a combination of Social Network Analysis (SNA), BERT-based sentiment analysis, and topic modeling using LDA. The findings indicate that public discourse on platform X is highly polarized and dominated by negative sentiment.

Based on the entire analytical process, from data cleaning, community detection using the Louvain algorithm, BERT-based sentiment analysis, to community-level LDA topic modeling—the research questions can be answered as follows.

“What communities are formed on Twitter in discussing the issue of increasing DPR allowances on platform X?”

There are at least ten major communities discussing the DPR allowance issue on platform X. Each community is formed based on interaction patterns (mentions/retweets) and possesses a distinct discursive identity, ranging from communities that engage in personal opposition toward the Speaker of the DPR to those focusing on protest riders and disinformation.

“What are the dominant topics and sentiment tendencies within each community when discussing the DPR allowance issue on platform X?”

Topic and sentiment analyses show that each community has a different discursive focus, yet all operate within the broader theme of criticism toward the DPR. Some communities highlight personal and symbolic issues, such as criticism of the Speaker of the DPR, delegitimization of political parties, and sarcastic expressions toward political representation. Other communities focus more on event-based aspects, including protest documentation, security force responses, and on-the-ground dynamics. Meanwhile, several communities link the allowance issue to structural problems, such as dissatisfaction with the government, policy inequality, or calls for institutional reform. There are also communities that present extreme discourse, including calls for the dissolution of the DPR, as well as communities that discuss media framing and the role of political actors behind the dissemination of narratives.

From a sentiment perspective, all communities are dominated by negative sentiment, although the intensity varies. Large communities such as 33, 161, and 984 exhibit strong and expressive negative sentiment, reflecting public anger and rejection of the DPR and the allowance policy. Other communities, such as 20, 847, and 610, while more informative or analytical in nature, still produce negative sentiment because they focus on criticism of DPR responses, security force actions, or media framing. Some communities, including 773, 51, and 164, display evaluative negative sentiment emphasizing issues of ethics, accountability, and public representation.

Overall, these results indicate that the DPR allowance issue does not stand alone as a matter of legislative welfare, but serves as a trigger for the reemergence of broader public distrust. Narratives across all communities consistently reflect patterns of delegitimization, disappointment, and structural criticism of the DPR as a representative institution. Thus, despite variations in topics across

communities, the dominant tendency remains that public opinion on this issue is overwhelmingly negative and rooted in deeper dissatisfaction with the DPR's representative function.

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