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DIGITAL PUBLIC SPHERE AND THE CULTURAL CONTESTATION OF POLICY LEGITIMACY: A NETWORK ANALYSIS OF INDONESIA'S FREE NUTRITIOUS MEAL DEBATE

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ABSTRACT

This study aims to analyze the structure of digital discourse surrounding the Free Nutritious Meal (MBG) policy to assess whether the resulting public sphere tends toward deliberation or fragmentation. Using a Social Network Analysis (SNA) approach, the study maps interactions on Platform X during January 2026, a period marked by the highest intensity of debate. The dataset consists of 4,711 accounts and 12,982 interaction ties, including retweets, mentions, and replies. The analysis is conducted through four principal indicators: network connectivity, centralization patterns, interaction modes, and discursive plurality. The findings indicate that the MBG discourse forms a multipolar structure with a moderate level of fragmentation. Interactions occur more dominantly within internal clusters than across clusters, with varying degrees of centralization across communities. Communication patterns are largely driven by retweets and mentions, while the proportion of replies remains relatively low, suggesting a tendency toward narrative amplification rather than direct dialogue. Nevertheless, the discourse continues to exhibit plurality through variations in sentiment, emotional expression, and hashtag framing. Negative sentiment and morally evaluative emotions are more prominent, indicating pressures on policy legitimacy. Overall, the MBG digital public sphere reflects a fragmented yet plural condition in the contestation of policy meaning.

KEYWORDS: Digital Public Sphere, Social Network Analysis, Discursive Fragmentation, Policy Legitimacy, Free Nutritious Meal (MBG) Policy.

1. INTRODUCTION

Over the past five years, social media has increasingly been understood as a digital public sphere that shapes patterns of participation and meaning-making in public policy issues (Muhammad & Muhamad, 2025; Staab & Thiel, 2022). A growing body of scholarship demonstrates that network architecture and content-sharing mechanisms significantly influence the formation of discursive communities, which may either strengthen social connectedness or reinforce social separation (Cui et al., 2024; Gusti et al., 2025). Studies on online fragmentation and polarization emphasize that network structure often plays a more decisive role in shaping the direction of discourse than the content of messages alone (Iandoli et al., 2021; Mattei et al., 2022). Consequently, examining the structure of digital interactions becomes essential for understanding how discursive cultures evolve in debates over publicly significant policies (Brüggemann & Meyer, 2023).

The Free Nutritious Meal program was introduced as a social policy aimed at enhancing child welfare and supporting educational outcomes (Jablonski et al., 2023; Matsentu, 2025). School feeding programs are globally recognized for their positive impacts on health and learning environments, yet they also generate debates regarding budget sustainability and fiscal prioritization (Batistela dos Santos et al., 2022; Ouedraogo et al., 2025). In the Indonesian context, controversy intensified when segments of the public perceived a potential reallocation of education funds. This situation reflects a value conflict between welfare intervention and investment in education. When such value conflicts emerge, social media becomes a primary arena for opinion formation and the contestation of policy legitimacy (Wineman et al., 2022).

Drawing on the Networked Public Sphere framework, the public sphere in the digital era is constituted through networks of user interactions rather than a single centralized channel of communication (Friemel & Neuberger, 2023; Zhang, 2023). Such network structures may produce two contrasting outcomes. First, discourse becomes deliberative when cross-group interactions are sufficiently intensive to enable argument exchange (Bruns, 2023). Second, discourse tends toward fragmentation when relatively isolated clusters form and interactions are dominated by internal narrative reinforcement (Quintanilha, 2018). Recent literature on deliberation and polarization highlights that network characteristics critically shape whether

public communication fosters integration or instead reinforces social boundaries.

Most social media studies related to public policy continue to focus primarily on sentiment analysis or topical trends (Yue & Yu, 2025a). While valuable, these approaches remain insufficient to explain how network structures influence the formation of policy legitimacy. Emerging research underscores that patterns of message diffusion and community formation within social networks can intensify information segregation, even when changes in message content are minimal (Yue & Yu, 2025b). Meanwhile, studies on digital government communication indicate that policy legitimacy increasingly depends on public responses within online platforms. Nevertheless, the relationship between discursive network structures and the legitimacy of social policy remains relatively underexplored in empirical research.

1.2. *The Purpose of the Study*

This study aims to analyze the network structure of digital discourse surrounding the MBG policy in order to identify whether the emerging public sphere is deliberative or tends toward fragmentation. Employing Social Network Analysis, the study maps conversational clusters, patterns of inter-community connections, and the degree of actor centralization within the discourse (Atsilah Siregar & Nugroho, 2025; Lutkenhaus et al., 2025; Paskarina, 2023). This approach aligns with recent research emphasizing the importance of network indicators in assessing online polarization and deliberation. Accordingly, the study moves beyond merely identifying supportive or opposing positions and instead examines how communication structures shape the dynamics of policy legitimacy.

The significance of this research lies in its implications for the legitimacy of social policy in the era of digital platforms. If the discourse is deliberative, social media may function as a feedback mechanism that contributes to the refinement of policy design and communication strategies. Conversely, if the discourse exhibits structural fragmentation, the risk of delegitimation increases, as policy clarification may struggle to penetrate isolated clusters and negative narratives may intensify through internal amplification. Literature on policy legitimacy and digital government communication suggests that public perceptions of policy are increasingly shaped by online conversational dynamics. Therefore, understanding network structures is crucial for sustaining policy stability.

2. THE CONCEPTUAL FRAMEWORK OF THE STUDY

This study is grounded in the assumption that the controversy surrounding the MBG policy extends beyond a simple dichotomy of support and opposition, and instead reflects how the digital public sphere structures value conflicts between educational priorities and welfare interventions (Avelino, 2021; Wu et al., 2025). Within the Networked Public Sphere framework, policy discourse is understood as the outcome of configurations of digital interaction networks (Benkler, 2008). Such network structures shape how narratives concerning the “reallocation of education funds” or the “right to child nutrition” are disseminated, reinforced, or contested within the public sphere of Platform X (Casero-Ripollés, 2021).

Operationally, the network structure of MBG discourse is measured through three principal constructs: (1) the formation of conversational clusters indicating value segmentation, (2) dominant interaction patterns (retweets as amplification versus replies as dialogue), and (3) the distribution of centrality reflecting the concentration of discursive power among specific accounts (Benkler, 2008). In the MBG context, clusters may represent communities emphasizing educational priorities or those supporting welfare-oriented policy intervention. Disparities in centrality indicate whether the debate is driven primarily by digital elites or dispersed more participatorily across users.

The character of the discourse is subsequently classified along a deliberative–fragmented spectrum. MBG discourse is considered deliberative when cross-cluster interactions occur between value-divergent groups, enabling negotiation over policy priorities. Conversely, discourse is deemed fragmented when communities supporting and opposing MBG remain relatively isolated, interactions are dominated by internal retweet amplification, and sentiment is concentrated within respective clusters. Under such conditions, network structures do not facilitate dialogue but instead reinforce ideological boundaries.

The ultimate implication of this discursive structure concerns the legitimacy of the MBG policy. In this study, legitimacy is operationalized through aggregate sentiment distribution and the stability of public conversations. A more deliberative discourse is assumed to enable informational correction and policy adaptation, thereby strengthening legitimacy. In contrast, structural fragmentation may heighten the risk of delegitimation, as policy clarification struggles to penetrate cluster boundaries and value

conflicts solidify within separated digital communities.

3. METHODS OF THE STUDY

This study employs a quantitative design based on Social Network Analysis (SNA) to examine the structure of digital discourse surrounding the Free Nutritious Meal (MBG) policy (Creswell, 2013). Data were collected from Platform X due to its open architecture, which enables the mapping of retweet, mention, and reply relationships as measurable relational units within public communication networks. The data collection period covered 1–31 January 2026, with peak conversational activity occurring on 24 January 2026, in order to capture the network configuration during the escalation phase of the issue. This timeframe was selected to observe the structure of discourse when public attention was at its highest intensity.

The dataset consists of 4,711 accounts (nodes) and 12,982 interaction ties (edges), with a total of 194,197 posts. Interactions comprise retweets (39%), mentions (48%), and replies (1.4%). The data were cleaned through the removal of duplicates and non-relevant content based on MBG- and education-budget-related keywords. The network was constructed as an undirected graph to map aggregate community structures. Nodes represent user accounts, while edges represent interaction ties between accounts. The analysis was conducted using Big Data Advanced Network Analytics (ANA).

Community detection was performed using a clustering algorithm based on internal connection density to identify conversational clusters. Network structure was analyzed through: (1) cluster size distribution as an indicator of value segmentation, (2) degree centrality and betweenness centrality to measure influence concentration, and (3) the proportion of inter-cluster interactions to assess cross-community connectivity. In addition, the retweet-to-reply ratio was calculated to evaluate the dominance of amplification patterns over direct dialogue, which digital polarization literature frequently associates with network fragmentation.

The character of discourse was measured through a series of quantitative indicators. Discourse was categorized as deliberative when three conditions were met: (1) a relatively high proportion of cross-cluster interactions compared to intra-cluster interactions, (2) a low centralization index indicating that influence is not overly concentrated among a small number of actors, and (3) a reply-to-total interaction ratio demonstrating meaningful direct dialogue. Conversely, discourse was categorized as

fragmented when (1) clusters were relatively isolated with dominant intra-cluster interactions, (2) centrality values were highly concentrated among specific actors (high centralization), and (3) interactions were dominated by retweets as a form of internal amplification.

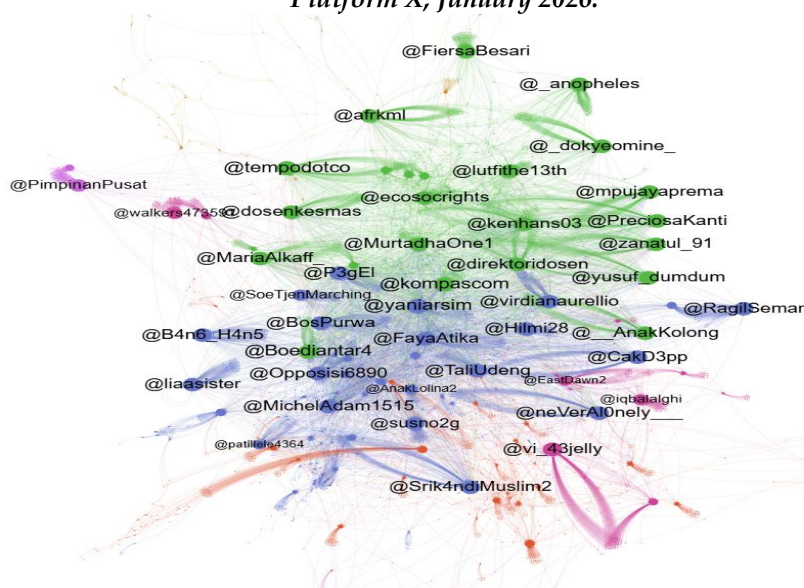
Sentiment analysis was employed as a consequential variable to link discursive structure with policy legitimacy. Sentiment distribution was examined at both network and cluster levels to assess whether negative or positive opinions were concentrated within particular communities. A concentration of negative sentiment within isolated clusters was interpreted as an indicator of delegitimation risk, whereas a more dispersed sentiment distribution across clusters suggested potential value negotiation within the digital public sphere. Through this approach, deliberation and fragmentation were measured systematically using replicable network-based indicators.

4. RESULTS

4.1. Network Connectivity

The network connectivity indicator assesses the extent to which MBG discourse on Platform X forms an integrated or segmented digital public sphere. Empirically, network segmentation is typically reflected in the emergence of internally cohesive communities with comparatively limited cross-community connections. Such patterns frequently arise in controversial policy debates, as users tend to interact with like-minded actors, thereby reinforcing homophily and value differentiation (Batistela dos Santos et al., 2022; Matsentu, 2025). Therefore, the assessment of connectivity in this study does not rely solely on network visualization but also on the distribution of cluster sizes as quantitative evidence of the underlying community structure.

Figure 1: Clustered Social Network Visualization of the Free Nutritious Meal (MBG) Policy Discourse on Platform X, January 2026.



Source Authors' analysis using Big Data Advanced Network Analytics (ANA), 2026.

Figure 1 illustrates the configuration of the MBG discourse network, which is organized into several clusters with relatively distinct visual boundaries. Edge density appears stronger within each cluster than across clusters. Empirically, this pattern indicates the dominance of intra-community connectivity, suggesting that interaction flows and information exchange occur more intensively within like-minded communities than between different

groups. In analytical terms, this finding aligns with literature emphasizing that when intra-community connections are more pronounced, the digital public sphere tends to develop into a segmented discursive arena, even before ideological polarization fully intensifies (Atsilah Siregar & Nugroho, 2025; Yue & Yu, 2025b). Thus, the network visualization provides initial evidence of structural segmentation.

Table 1: Characteristics of Clusters in the Free Nutritious Meal Policy Discourse on Platform X Based on Proportion, Attitudinal Orientation, and Discursive Character.

Cluster	Size	Dominant Narrative	Discursive Character
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Blue (34%)	Critique of education budget allocation	Normative-constitutional	Normative-Critical (grounded in constitutional arguments and educational priorities)
Green (28%)	Critique of elites/ media	Opinion-driven	Opinion-Leader Driven (influenced by high-profile accounts and strong framing effects)
Red (17%)	Technical debate on budget allocation	Argumentative	Argumentative-Technocratic (based on data and fiscal rationality)
Purple (10%)	Emotional mobilization	Centralized	Emotional-Mobilizational (strong rhetoric and high sentiment intensity)
Yellow (4%)	Support for MBG	Pro-policy	Rational Pro-Policy (emphasizing human capital development and nutritional benefits)
Brown (1%)	Extreme ideological critique	Polarized	Ideological-Polarizing (harsh and segregative rhetoric)

Source: Authors' analysis using Big Data Advanced Network Analytics (ANA), 2026.

The cluster distribution presented in Table 1 reinforces the interpretation of a multipolar structure within the MBG discourse. The largest cluster (Blue, 34%), characterized as normative-constitutional, focuses on critiques of education budget allocation, followed by the Green cluster (28%), which is opinion-leader driven, and the Red cluster (17%), which adopts an argumentative-technocratic orientation. No single cluster accounts for more than half of the network, indicating that the discourse is not centralized within a single dominant community. Empirically, this configuration reveals the presence of several relatively strong centers of conversational gravity, each advancing distinct narrative orientations, normative, elite-framed, and technocratic, that compete in shaping the direction of public opinion. In analytical terms, such a multipolar structure is often associated with a fragmented discursive ecosystem composed of relatively independent value arenas (Iandoli et al., 2021; Mattei et al., 2022).

This segmentation is evident not only in proportional size but also in the differentiation of narrative character across clusters. The Blue cluster emphasizes constitutional arguments and educational priorities, the Green cluster reflects the influence of prominent accounts in framing the issue, and the Red cluster underscores fiscal rationality. Meanwhile, the Purple (10%) and Brown (1%) clusters exhibit stronger emotional and ideological intensity, despite their smaller size. These differences indicate that the discourse does not unfold within a single shared deliberative arena, but rather across multiple communities with distinct value orientations. Nevertheless, network visualization still reveals the presence of bridging nodes

connecting clusters, suggesting that segmentation has not reached complete isolation.

The existence of cross-cluster connectivity indicates that the MBG digital public sphere is situated in a condition of moderate fragmentation. Community boundaries have formed and appear relatively stable, yet they are not entirely closed to cross-exposure. In network polarization research, such a condition is understood as an advanced stage of community differentiation that still preserves opportunities for cross-value interaction (Garimella et al., 2022). Overall, the connectivity findings demonstrate that MBG discourse is multipolar and moderately segmented. Opinion dynamics develop more through narrative competition among communities than through negotiation within a unified deliberative space, although the possibility of cross-cluster dialogue remains open and warrants further examination through subsequent indicators.

4.2. Centralization Pattern

The centralization pattern indicator is employed to assess how discursive power is distributed within the principal clusters of the MBG discourse. While the connectivity indicator revealed a multipolar structure with moderate segmentation, the analysis of centralization is necessary to determine whether each community evolves in a participatory manner or becomes concentrated around digital elites (Ngaji et al., 2025). The focus of analysis is directed toward the three largest clusters, Blue, Green, and Red, as collectively they comprise the majority of the network and constitute the primary arenas of narrative competition identified in the previous section.

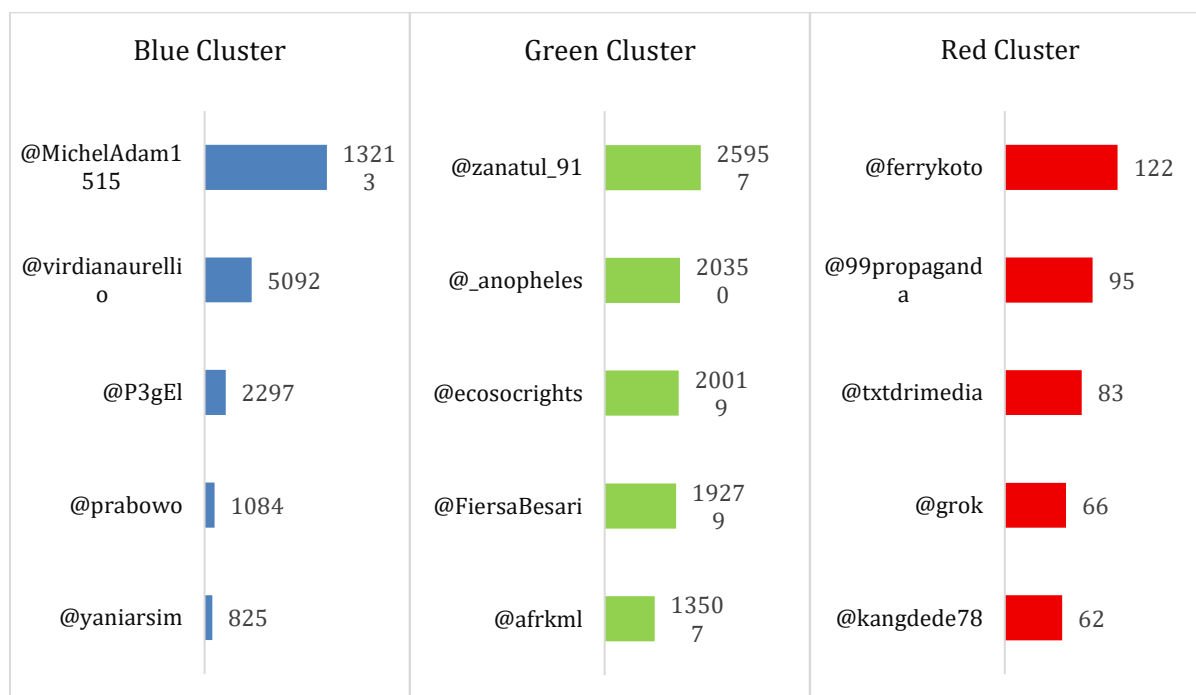


Figure 2 Distribution of Dominant Actors (Degree Centrality) Across Clusters in the Free Nutritious Meal (MBG) Policy Discourse on Platform X, January 2026.

Source: Authors' analysis using Big Data Advanced Network Analytics (ANA), 2026.

Figure 2 illustrates variations in the distribution of degree centrality across the three principal clusters. The Green cluster exhibits the sharpest disparity between the leading account and other actors. Empirically, this pattern indicates a high concentration of influence, where conversational flows are largely guided by a central figure. This finding is consistent with the opinion-leader-driven character previously identified in the connectivity analysis. In contrast, the Blue cluster demonstrates a

relatively more dispersed distribution of influence (Batistela dos Santos et al., 2022; Ouedraogo et al., 2025; Wineman et al., 2022). Although dominant actors are present, the gap in centrality values among accounts is not as pronounced. The Red cluster occupies an intermediate position, featuring influential figures without exhibiting extreme dominance (Kuhamanee et al., 2017). These variations suggest that structural fragmentation does not necessarily entail uniform levels of centralization across communities.

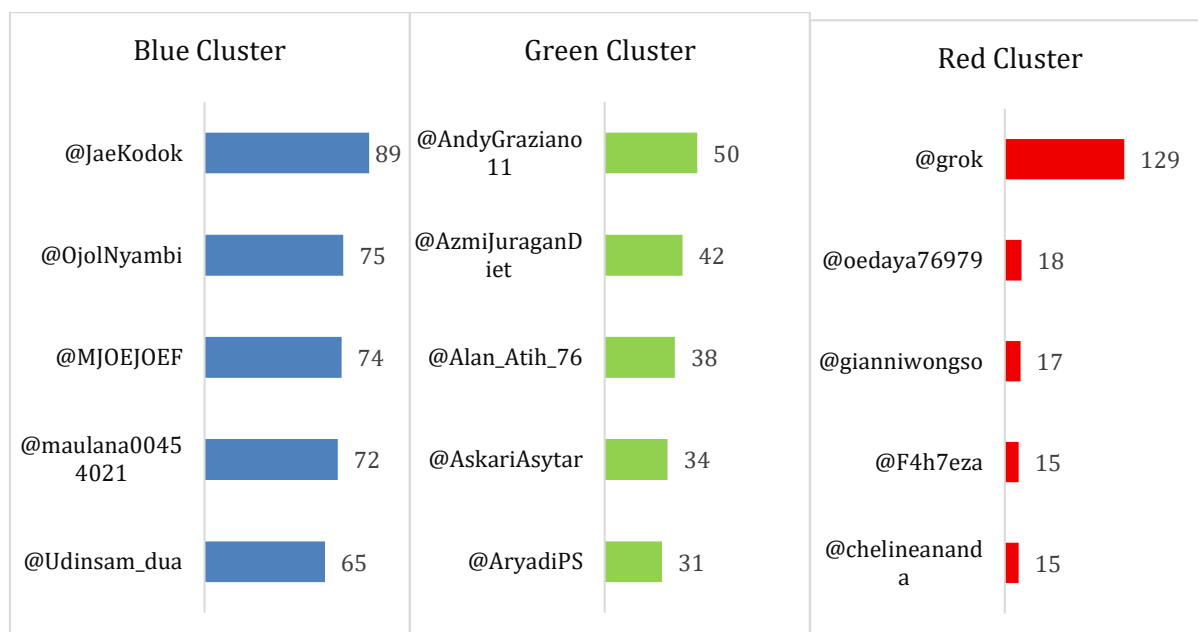


Figure 3 Distribution of Supporting Accounts (List Troops) Based on Interaction Frequency Across Clusters in the Free Nutritious Meal (MBG) Policy Discourse on Platform X, January 2026.

Source: Authors' analysis using Big Data Advanced Network Analytics (ANA), 2026.

The list troops pattern reinforces the previous interpretation. In the Green cluster, supporting accounts are highly concentrated in reinforcing the central actor, forming a structure resembling a star-shaped network. Empirically, this configuration indicates that narratives are strengthened through a vertical amplification mechanism from the center to the periphery. In contrast, the Blue cluster exhibits a more diversified distribution of supporting accounts, not entirely concentrated around a single figure. This pattern suggests a relatively more participatory reinforcement structure. The Red cluster presents a moderate configuration, where several accounts make significant contributions without producing a single dominant actor. Overall, centralization across the three principal clusters reflects varying degrees of influence concentration rather than a uniform pattern.

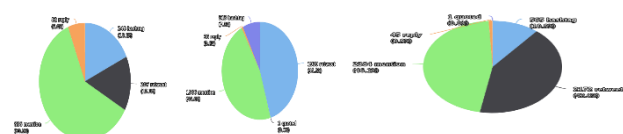


Figure 4 Distribution of Interaction Types (Edge Types) Across Clusters in the Free Nutritious Meal (MBG) Policy Discourse on Platform X, January 2026.

Source: Authors' analysis using Big Data Advanced Network Analytics (ANA), 2026.

The distribution of interaction types indicates the dominance of retweets over replies across all three clusters, albeit with varying intensity. In the Green cluster, retweets are markedly more dominant, reflecting a one-directional amplification pattern that reinforces the concentration of influence around the central actor. In the Blue and Red clusters, retweets remain the primary mechanism for narrative dissemination; however, the interaction composition is relatively more balanced compared to the Green cluster (Brüggemann & Meyer, 2023; Cui et al., 2024; Iandoli et al., 2021). Analytically, the dominance of retweets in more centralized clusters suggests that certain communities evolve through internal narrative reinforcement rather than intensive dialogic exchange.

Overall, the centralization indicator demonstrates that the structural fragmentation identified in the connectivity analysis is further reinforced by the concentration of discursive power within particular clusters, especially the Green cluster. Meanwhile, the Blue and Red clusters exhibit moderate levels of centralization, allowing for a broader distribution of influence. Thus, the MBG digital public sphere is not only segmented at the community level but also characterized by varying distributions of power within each community. These findings deepen the understanding of the nature of fragmentation previously identified.

5.3. Interaction Mode

The interaction mode indicator is employed to examine how the forms of communicative relations within each cluster shape the character of MBG discourse. While the connectivity indicator assesses structural segmentation and the centralization indicator evaluates the distribution of discursive power, this indicator focuses on the types of interactions that dominate communication flows. In the networked public sphere literature, the dominance of retweets is commonly associated with mechanisms of narrative amplification, whereas a higher proportion of replies represents the potential for dialogue and cross-actor argument exchange (Gusti et al., 2025; Kim et al., 2025; Mallek et al., 2024).

Therefore, edge composition becomes a crucial indicator for determining whether discourse

evolves in a deliberative manner or tends to reinforce value segregation. At the aggregate network level (Figure 5), the distribution of interactions shows that mentions constitute the largest relational form (48.7%), followed by retweets (39.0%), hashtags (10.9%), and replies (1.4%). This composition indicates that MBG conversations are not driven solely by content amplification but also involve the practice of mentioning other accounts as part of framing strategies or positional signaling. Nevertheless, the relatively low proportion of replies suggests that direct dialogue between accounts remains limited. Analytically, this pattern indicates that the MBG digital public sphere develops more as an arena for dissemination and positional reinforcement than as a space for intensive argumentative exchange.

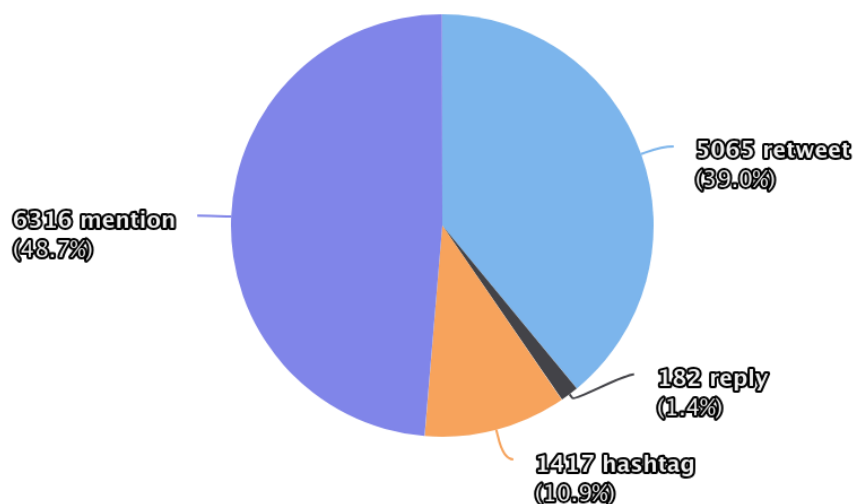


Figure 5 Aggregate Distribution of Interaction Types (Edge Types) in the MBG Policy Discourse on Platform X, January 2026.

Source: Authors' analysis using Big Data Advanced Network Analytics (ANA), 2026.

When analyzed across the principal clusters, variations in interaction patterns reveal sharper differentiation in communicative character. In the Blue cluster (Figure 6), mentions dominate (60.9%), followed by hashtags (18.1%), retweets (15.1%), and replies (6.0%). This composition indicates that the normative-critical community tends to use account mentions as a means of exerting symbolic pressure or

targeting specific institutional actors. The relatively higher proportion of replies compared to other clusters suggests the presence of limited internal dialogue, although still largely confined within the same value-oriented community. Thus, the Blue cluster demonstrates a semi-deliberative tendency within the boundaries of value segmentation.

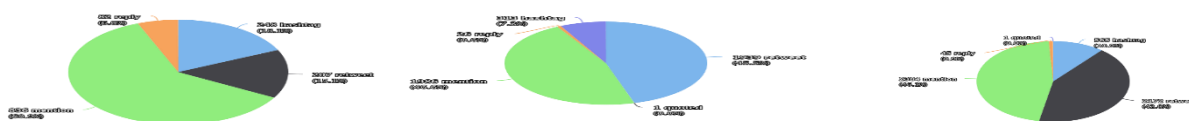


Figure 6 Distribution of Interaction Types within the Blue Cluster of the MBG Discourse.

Source: Authors' analysis using Big Data Advanced Network Analytics (ANA), 2026.

In contrast, the Green cluster (Figure 6) exhibits a very high dominance of retweets (45.5%) and mentions (46.6%), with replies accounting for only 0.6% and quoted interactions being almost negligible. This pattern reinforces the opinion-leader-driven character identified in the centralization analysis. Communication flows within this cluster operate primarily through the amplification of narratives produced by central figures rather than through horizontal dialogue. Empirically, the low proportion of replies indicates minimal direct argument exchange, meaning that opinion reinforcement occurs largely through the reproduction of previously framed messages. Such a structure tends to strengthen internal cohesion while limiting opportunities for cross-value deliberation.

Meanwhile, the Red cluster demonstrates a relatively more balanced distribution between retweets (42.0%) and mentions (46.1%), with hashtags (10.9%) and replies (0.9%) remaining in smaller proportions. This pattern suggests a combination of technocratic argument reinforcement and the strategic use of mentions to broaden the scope of discussion. Although replies remain limited, the interaction distribution is not excessively concentrated in a single mode, indicating that this community does not rely entirely on vertical amplification. Therefore, the Red cluster represents a comparatively more rational-argumentative mode of communication, albeit still operating within segmented community boundaries.

Overall, the interaction mode indicator reveals that MBG discourse on Platform X is predominantly shaped by mechanisms of amplification and positional signaling through mentions and retweets, while direct dialogue via replies remains marginal. Variations across clusters indicate differing levels of deliberative potential within each community; however, these remain insufficient to overcome structural segmentation. These findings reinforce the

earlier interpretation that the MBG digital public sphere is characterized by moderate fragmentation, where internal narrative reproduction is more prominent than cross-community argumentative negotiation.

5.4. Discursive Plurality

The discursive plurality indicator is employed to assess the extent to which the digital public sphere surrounding the MBG policy reflects diversity in value orientations, affective expressions, and narrative framing. While the connectivity indicator identifies community segmentation and the centralization indicator evaluates the distribution of discursive power, this indicator focuses on the variation of meanings circulating within the network. Within the Networked Public Sphere framework, discursive plurality is measured not merely by the number of actors involved, but by the diversity of evaluative and affective positions competing to frame policy legitimacy (Avelino, 2021; Casero-Ripollés, 2021; Paskarina, 2023). Accordingly, the analysis examines sentiment distribution, emotional expression, as well as variations in hashtags and dominant keywords.

The sentiment distribution (Figure 7) indicates that public conversation regarding MBG is dominated by negative sentiment (51.8%), followed by positive (24.4%) and neutral (23.9%) sentiments. Empirically, this composition suggests that the evaluative orientation toward the policy tends to be critical, yet not entirely homogeneous. The substantial presence of positive and neutral sentiments demonstrates that supportive and moderate positions remain integral to the discursive space. Thus, although pressures on policy legitimacy appear more pronounced on the critical side, the overall structure of public opinion still reflects an open contestation of narratives rather than a singular evaluative consensus.

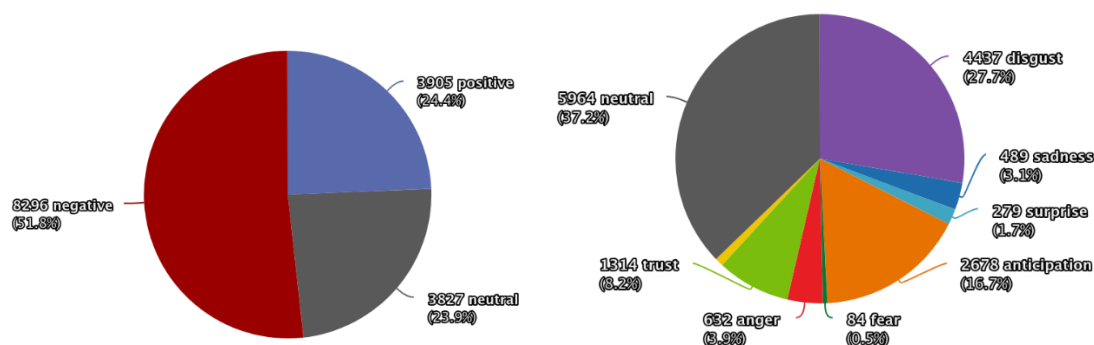


Figure 7 Distribution of Sentiment and Emotion in the MBG Policy Discourse on Platform X, January 2026. Source: Authors' analysis using Big Data Advanced Network Analytics (ANA), 2026.

At the affective level (Figure 7), the distribution of emotions reveals a more complex configuration. Disgust (27.7%) and neutral (27.2%) emerge as the largest categories, followed by anticipation (16.7%) and trust (8.2%), while sadness and other emotions appear in smaller proportions. The dominance of disgust indicates that part of the discourse develops within a framework of moral evaluation toward the policy, rather than merely technical criticism. However, the presence of anticipation and trust signals expectations and confidence in the potential benefits of the program. This variation demonstrates that although negative sentiment is dominant, the affective structure of the discourse is not monolithic. In the literature on affective polarization, the coexistence of negative and anticipatory emotions suggests a dynamic arena of meaning contestation rather than a simple binary opposition (Garimella et al., 2022).

Plurality is also evident in the distribution of trending hashtags (Figure 8). Hashtags such as #NutritiousMealsDisaster and #MakeGibranResign reflect critical framing that associates the policy with program failure or political delegitimation. Conversely, hashtags such as #SupportNutritiousMeals, #ContinueNutritiousMeals, and #FreeNutritiousMeals indicate pro-policy framing that emphasizes program continuity and social benefits. Additionally, the appearance of hashtags such as #NewsUpdate, #PrioritiesAgendaPrabowo2026, and #AgainstCritics signals an expansion of the discourse into broader political and national agenda domains. Empirically, this diversity of framing demonstrates that the debate extends beyond technocratic budgetary concerns and evolves into a symbolic contestation over development priorities and leadership legitimacy.

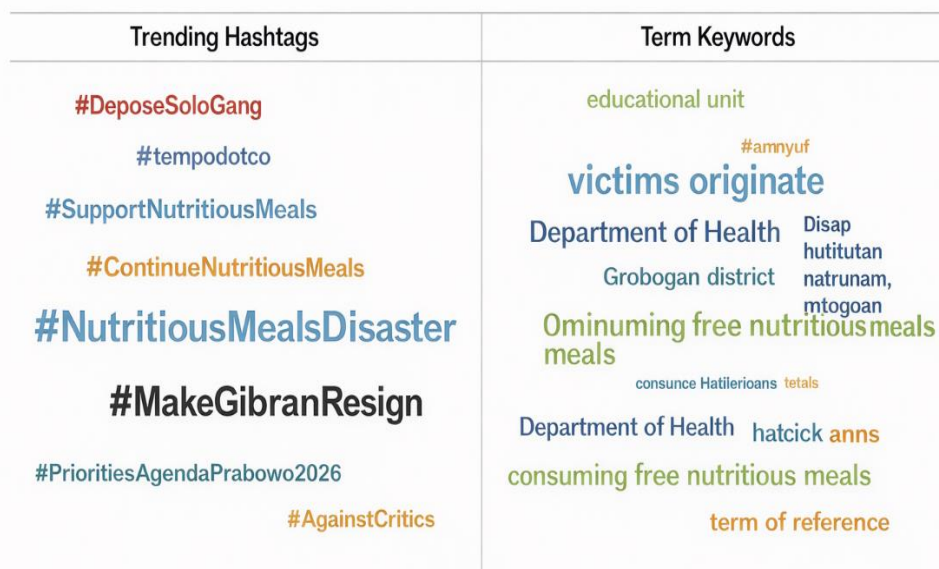


Figure 8 Distribution of Trending Hashtags in the Free Nutritious Meal Policy Discourse on Platform X, January 2026.

Source: Authors' analysis using Big Data Advanced Network Analytics (ANA), 2026.

The analysis of term keywords and term phrases (Figure 8) further reinforces the finding of semantic plurality. Terms such as "educational unit," "department of health," and "sub-district" indicate the presence of an administrative-technocratic discourse grounded in policy implementation. Meanwhile, phrases such as "free nutritious meals" and "food program" emphasize welfare dimensions and human capital development. The coexistence of technical, normative, and political language within a single network suggests that the MBG digital public sphere is not dominated by a single discursive domain. Thus, discursive plurality manifests not

only in differences of stance but also in the diversity of interpretative frameworks.

Overall, the discursive plurality indicator demonstrates that MBG discourse on Platform X is plural in evaluative, affective, and semantic terms, albeit with a more pronounced critical orientation. The emerging digital public sphere is not a homogeneous arena fully polarized in one direction; rather, it constitutes a competitive space of meaning marked by variations in emotion, framing, and value orientation. These findings complement the previous indicators by showing that structural fragmentation does not eliminate discursive diversity, but instead

frames it within communities carrying distinct configurations of meaning. In the context of policy legitimacy, such plurality creates opportunities for value negotiation, while simultaneously implying a risk of delegitimation if negative emotions and critical framing continue to intensify within a relatively segmented network structure.

5. CONCLUSION

The findings demonstrate that MBG discourse forms a multipolar structure characterized by a moderate level of fragmentation. The connectivity indicator reveals the emergence of several major clusters with distinct narrative orientations, normative–constitutional, opinion-leader driven, and technocratic, that are internally cohesive yet maintain limited cross-community connectivity. This structure indicates that the digital public sphere is neither fully isolated nor strongly integrated in a deliberative sense. The centralization indicator further shows variations in the distribution of discursive power across principal clusters. Certain clusters, particularly those characterized as opinion-leader driven, exhibit high influence concentration and vertical amplification patterns, while others display more distributed and participatory influence structures. These findings suggest that structural fragmentation does not occur uniformly but is shaped by the configuration of dominant actors within each community.

In terms of interaction mode, discourse is largely dominated by retweets and mentions, whereas the proportion of replies remains relatively low. This pattern indicates that conversations evolve primarily through mechanisms of amplification and positional reinforcement rather than direct argumentative

dialogue. The dominance of retweets within more centralized clusters reinforces the tendency toward internal narrative reproduction, thereby limiting opportunities for cross-value deliberation. Nevertheless, the discursive plurality indicator demonstrates that the MBG digital public sphere is not homogeneous. Sentiment and emotional distributions reveal significant evaluative and affective variation, despite the prominence of negative sentiment and morally grounded emotions. The diversity of hashtags and keywords further indicates framing competition among critical, pro-policy, technocratic, and political narratives. Thus, fragmentation does not eliminate diversity of meaning but organizes it within communities carrying distinct value configurations.

Overall, this study concludes that the digital public sphere surrounding the MBG debate reflects a fragmented plural sphere: structurally segmented, varied in its distribution of discursive power, dominated by amplification mechanisms, yet still exhibiting evaluative and semantic plurality. This condition enables dynamic contestation of meaning while simultaneously heightening the risk of delegitimation if negative narratives and moralized affect intensify within relatively segmented network structures. These findings underscore that the legitimacy of social policy in the digital platform era is shaped not only by policy substance but also by the configuration of public communication networks that structure its contestation. Consequently, policy communication strategies must account for digital community structures, influence distribution, and affective dynamics in order to ensure that clarification and dialogue can traverse established cluster boundaries.

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REFERENCES

Atsilah Siregar, J., & Nugroho, C. (2025). Social-mediated communication and network dynamics in online gambling discourse: a social network analysis of YouTube comments on “Indonesia Darurat Judi

- Online." *Frontiers in Communication*, 10. <https://doi.org/10.3389/fcomm.2025.1584444>
- Avelino, F. (2021). Theories of power and social change. Power contestations and their implications for research on social change and innovation. *Journal of Political Power*, 14(3), 425–448. <https://doi.org/10.1080/2158379X.2021.1875307>
- Batistela dos Santos, E., da Costa Maynard, D., Zandonadi, R. P., Raposo, A., & Assunção Botelho, R. B. (2022). Sustainability Recommendations and Practices in School Feeding: A Systematic Review. *Kompass Nutrition & Dietetics*, 2(2), 83–102. <https://doi.org/10.1159/000526379>
- Benkler, Yochai. (2008). *Wealth of Networks : How Social Production Transforms Markets and Freedom*. Yale University Press.
- Brüggemann, M., & Meyer, H. (2023). When debates break apart: discursive polarization as a multi-dimensional divergence emerging in and through communication. *Communication Theory*, 33(2–3), 132–142. <https://doi.org/10.1093/ct/qtad012>
- Bruns, A. (2023). From “the” public sphere to a network of publics: towards an empirically founded model of contemporary public communication spaces. *Communication Theory*, 33(2–3), 70–81. <https://doi.org/10.1093/ct/qtad007>
- Casero-Ripollés, A. (2021). Influencers in the political conversation on twitter: Identifying digital authority with big data. *Sustainability (Switzerland)*, 13(5), 1–14. <https://doi.org/10.3390/su13052851>
- Creswell, J. (2013). *Qualitative, Quantitative, and Mixed Method Approaches in Research Design*.
- Cui, J., Wan, Q., Chen, W., & Gan, Z. (2024). Application and Analysis of the Constructive Potential of China’s Digital Public Sphere Education. *The Educational Review, USA*, 8(3), 350–354. <https://doi.org/10.26855/er.2024.03.002>
- Friemel, T. N., & Neuberger, C. (2023). The public sphere as a dynamic network. *Communication Theory*, 33(2–3), 92–101. <https://doi.org/10.1093/ct/qtad003>
- Gusti, I., Parthama, N., Pastika, W., Netra, M., & Aryawibawa, N. (2025). From Public Opinion to Digital Resistance: The Role of Social Media in Contesting Government Policies. In *International Journal Of Humanities Education And Social Sciences* (Vol. 4, Number 6). <https://ijhess.com/index.php/ijhess/>
- Iandoli, L., Primario, S., & Zollo, G. (2021). The impact of group polarization on the quality of online debate in social media: A systematic literature review. *Technological Forecasting and Social Change*, 170. <https://doi.org/10.1016/j.techfore.2021.120924>
- Jablonski, B. B. R., Milbourne, P., Maderson, S., & Morgan, K. (2023). Considering tradeoffs in “local” food policies: examples from school feeding programmes. *Frontiers in Nutrition*, 10. <https://doi.org/10.3389/fnut.2023.1242493>
- Kim, K. J., Choi, M. J., & Kim, M. J. (2025). Effects of virtual reality-based disaster simulation education on nursing students. *PLOS ONE*, 20(10 October). <https://doi.org/10.1371/journal.pone.0329563>
- Kuhamanee, T., Talmongkol, N., Chaisuriyakul, K., San-Um, W., Pongpisuttinun, N., & Pongyupinpanich, S. (2017). Sentiment Analysis of Foreign Tourists to Bangkok using Data Mining through Online Social Network.
- Lutkenhaus, R. O., Meijberg, A., Mölenberg, F. J. M., Been, J. V., & Bouman, M. P. A. (2025). Discourses on smoke-free policies on Dutch Twitter: A social network analysis. *Digital Health*, 11. <https://doi.org/10.1177/20552076251325583>
- Mallek, F., Mazhar, T., Shah, S. F. A., Ghadi, Y. Y., & Hamam, H. (2024). A review on cultivating effective learning: synthesizing educational theories and virtual reality for enhanced educational experiences. *PeerJ Computer Science*, 10. <https://doi.org/10.7717/PEERJ-CS.2000>
- Matsentu, A. (2025). The Contribution and Challenges of School Feeding Program on Students’ Educational Outcomes: The Case of Public Primary Schools in Gulele-Sub-City. *Ethiopian Journal Of Behavioural Studies*, 8(2), 36–88. <https://doi.org/10.63990/ejobs.v8i2.12278>
- Mattei, M., Pratelli, M., Caldarelli, G., Petrocchi, M., & Saracco, F. (2022). Bow-tie structures of twitter discursive communities. *Scientific Reports*, 12(1). <https://doi.org/10.1038/s41598-022-16603-7>
- Muhammad, I., & Muhamad, D. (2025). Negotiating Power in Public Policy Discourse on Social Media a Critical Discourse Analysis of Government Institutional Posts. *Journal of Language Development and Linguistics*, 4(2), 111–124. <https://doi.org/10.55927/jldl.v4i2.15366>
- Ngaji, F. M., Prasetyo, S. I., Alexandra, V. D., San, R. D., & Nata, Y. (2025). Digital Discourse, Public Sentiment, and Ideology: A Critical Discourse Analysis of Social Media Networks on Demonstrations in Yogyakarta. *Journal of Cultural Analysis and Social Change*, 10(2), 1885–1896.

- <https://doi.org/10.64753/jcasc.v10i2.1884>
- Ouedraogo, S. D., Compaore, E. W. R., Nebie, G. A., Coulibaly, T. S. Z. C., Desormeaux, J., Ouedraogo, O., Diallo, S., KY, I., & Dicko, M. H. (2025). Does the school feeding program have an impact on the development of human capital? Results from the Burkina Faso experience using the micro-simulation method. <https://doi.org/10.1101/2025.06.05.25329100>
- Paskarina, C. (2023). Public Trust in the Time of Pandemic: An Analysis of Social Networks in the Discourse of Large-Scale Social Restrictions in Indonesia. *Social Sciences*, 12(3). <https://doi.org/10.3390/socsci12030186>
- Quintanilha, T. L. (2018). A contribution to the debate on the redefinition of the networked public sphere based on Portuguese public participation in cyberspace. *Comunicação e Sociedade*, 34, 287–304. [https://doi.org/10.17231/comsoc.34\(2018\).2950](https://doi.org/10.17231/comsoc.34(2018).2950)
- Staab, P., & Thiel, T. (2022). Social Media and the Digital Structural Transformation of the Public Sphere. *Theory, Culture and Society*, 39(4), 129–143. <https://doi.org/10.1177/02632764221103527>
- Wineman, A., Ekwueme, M. C., Bigayimpunzi, L., Martin-Daihirou, A., Eth, E. L., Etuge, P., Warner, Y., Kessler, H., & Mitchell, A. (2022). School Meal Programs in Africa: Regional Results From the 2019 Global Survey of School Meal Programs. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.871866>
- Wu, C., Jiang, S., Sun, J., & Liu, Y. (2025). Research on the influence mechanism of emotional communication on Twitter (X) and the effect of spreading public anger. *Acta Psychologica*, 260. <https://doi.org/10.1016/j.actpsy.2025.105560>
- Yue, Z., & Yu, G. (2025a). Effects of Policy Communication Changes on Social Media: Before and After Policy Adjustment. *Systems*, 13(4). <https://doi.org/10.3390/systems13040248>
- Yue, Z., & Yu, G. (2025b). Effects of Policy Communication Changes on Social Media: Before and After Policy Adjustment. *Systems*, 13(4). <https://doi.org/10.3390/systems13040248>
- Zhang, M. (2023). Digital Lifeworld and Communicative Interaction: Conceptualizing the Transformative Potentials of Social Networking in the Public Sphere. *Journal of Linguistics and Communication Studies*, 2(4), 121–131. <https://doi.org/10.56397/jlcs.2023.12.14>