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Comparison of Media Framing and Sentiment towards Palestinian vs Rohingya Refugees: Analysis using Deep Learning Methods

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A B S T R A C T

The differences in media framing and public sentiment regarding the discourse on the acceptance of Palestinian refugees by the Indonesian Government versus the presence of Rohingya refugees in Aceh reflect biases that can influence public perceptions, which in turn can have an impact on social and political stability in Indonesia in the future. This research aims to compare media framing and public sentiment towards Palestinian and Rohingya refugees using the deep learning method, a sentiment analysis technique based on NLP (Natural Language Processing) in order to gain deeper insight into the influence of the media on public perception. This research analyzes framing patterns and sentiments from news articles and social media related to Palestinian and Rohingya refugees. Media framing theory and sentiment analysis are used to understand how the media can influence public perceptions and attitudes. Deep learning methods enable deeper and more accurate analysis of large and complex text data. The expected result is an analysis of significant differences in media framing and public sentiment towards the two refugee groups. A better understanding of how the media influences public perceptions of Palestinian and Rohingya refugees can help in designing more inclusive and harmonious policies, the ultimate goal of which is to maintain social and political stability in Indonesia, considering that the country has a large and diverse Muslim population that plays an active role in in international humanitarian issues.

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INTRODUCTION

Differences in media framing and public sentiment towards Palestinian and Rohingya refugees reflect significant bias and can influence broader public perceptions. Online media plays an important role in shaping public opinion through news framing and information delivery. Media framing is the process of selecting and emphasizing certain aspects of reality to form a certain interpretation in the audience [1]. In the context of Palestinian and Rohingya refugees, news framing by the media can influence public perceptions and government policies related to this humanitarian crisis.

Differences in media framing and public sentiment towards Palestinian and Rohingya refugees reflect significant bias and can influence broader public perceptions. Online media plays a crucial role in shaping public opinion through news framing and information delivery. Media framing is the process of selecting and emphasizing certain aspects of reality to create a particular interpretation in the audience. In humanitarian crises, the way media presents information can determine whether an issue receives widespread sympathy or indifference. The framing of Palestinian and Rohingya refugees in global media showcases how selective reporting can lead to varying levels of public and political support.

In the case of Palestinian refugees, media coverage often highlights the historical and political context of their displacement, linking it to broader geopolitical conflicts, particularly the Israeli-Palestinian struggle. Many international media outlets emphasize the human rights violations and humanitarian challenges faced by Palestinians, framing them as victims of occupation and armed conflict. This portrayal garners significant global attention, leading to large-scale demonstrations, diplomatic pressure, and humanitarian aid efforts. However, the framing is also influenced by the political interests of media organizations, with some outlets presenting narratives that either reinforce or challenge dominant geopolitical narratives.

Conversely, the framing of Rohingya refugees has been different, often receiving less consistent media attention despite the severe ethnic persecution they face in Myanmar. Reports frequently highlight the Rohingya crisis in the context of religious and ethnic tensions but lack sustained political discourse compared to the Palestinian issue. The media portrayal of Rohingya refugees as stateless individuals fleeing violence has evoked humanitarian sympathy, yet the response from international actors remains limited. Unlike the Palestinian case, where political and historical factors drive media engagement, the Rohingya crisis is often framed as a regional issue, leading to varied global reactions and inconsistent support for displaced communities.

The impact of media framing extends beyond shaping public sentiment; it also influences government policies and international interventions. Governments and humanitarian organizations often respond to crises based on the level of media exposure and public pressure. In cases where media framing generates strong emotional engagement, as seen with Palestinian refugees, international advocacy efforts tend to be more vocal. Meanwhile, crises with less media-driven political discourse, like the Rohingya situation, struggle to gain sustained international intervention. These differences underscore the power of

media in shaping not only public perceptions but also political and humanitarian responses to refugee crises.

Media Framing and Sentiment Analysis using NLP

Sentiment analysis is a technique used to evaluate opinions, sentiments, and emotions expressed in text. In sentiment analysis for media, this technique helps identify positive, negative, or neutral sentiment in news and social comments. Natural Language Processing (NLP) is a field of computer science that focuses on the interaction between computers and human language. Modern NLP techniques such as BERT (Bidirectional Encoder Representations from Transformers) and GPT-3 (Generative Pre-trained Transformer 3) have proven effective in sentiment analysis due to their ability to understand the context and meaning of complex texts.

Emotion Analysis Model & Formula

Mathematical models and formulas in emotional analysis are often used to measure the intensity and polarity of emotions expressed in text. For example, the Valence-Arousal (VA) model can be used to map emotions on two dimensions: valence (positive or negative) and arousal (intensity of the emotion) [4]. The following are some examples of mathematical formulas that are often used in NLP (Natural Language Processing) models:

1) Bag of Words (BoW)
   Bag of Words is a text representation that simplifies text into word frequency form. The basic formula of BoW is to count the number of occurrences of each word in a document.
   $$BoW(d) = [n_{1,} n_{2,} \dots, n_{v,}]$$
   where $\boldsymbol{n_{i,}}$ is the frequency of the word $\boldsymbol{i}$ in the document $\boldsymbol{d}$, and $\boldsymbol{V}$ is the size of vocabulary

2) Term Frequency-Inverse Document Frequency (TF-IDF)
   TF-IDF is a method for assessing the importance of a word in a document based on its frequency of occurrence and rarity throughout the document.
   $$\mathrm{TF}(t,d) = \frac{\mathrm{f}_{t,d}}{\sum \mathrm{t}' \epsilon d \, \mathrm{f}_{t,d}}$$
   Where $\boldsymbol{\mathrm{f}_{t,d}}$ is the frequency of the word $\boldsymbol{t}$ in the document $\boldsymbol{d}$. and $\boldsymbol{t' \epsilon d}$ is the number of documents containing the word $\boldsymbol{t}$.
3) Word2Vec
   Word2Vec is an embedding technique that maps words into fixed-dimensional vectors based on the context of the words. This model consists of two main architectures: Continuous Bag of Words (CBOW) and Skip-gram.
   $$J = -\log P(\omega_t | \omega_{t-m_1}, \dots, \omega_{t-1,} \omega_{t+1,} \dots, \omega_{t+m} | \omega_t)$$
   Deep learning techniques such as BERT and GPT-3 can be trained using big data to identify these emotional patterns more accurately.

Public Distrust and Disobedience

Public distrust and disobedience are phenomena that often arise in the context of social media, where negative perceptions of certain institutions or groups can encourage public distrust and disobedience. Studies on social media analysis show that widespread negative sentiment can trigger disobedience and damage social stability. In the context of insurgency and asymmetric warfare, understanding how public sentiment is formed and developed through social media can provide important insights into conflict dynamics and strategies used by non-state actors.

Insurgence and Asymmetric Warfare

Studies on the dynamics, origins and trends of insurgency and asymmetric warfare show that the media has an important role in shaping conflict narratives and influencing public perceptions. An understanding of how media framing and sentiment analysis can be used to identify and understand public sentiment is important for designing effective security strategies and maintaining national stability.

This research aims to compare media framing and public sentiment towards Palestinian and Rohingya refugees using deep learning methods. By using the latest NLP-based sentiment analysis techniques such as BERT and GPT-3, we hope to provide deeper insight into the influence of media on public perception and its implications for social and political stability in Indonesia.

LITERATURE REVIEW

Online media has an important role in shaping public opinion and influencing perceptions through news framing. Media framing is the process of selecting and emphasizing certain aspects of reality to form a certain interpretation in the audience. Research shows that online media often provide biased representations of certain issues, including the refugee crisis, which can influence public opinion and government policy. News framing related to Palestinian and Rohingya refugees, for example, can differ significantly depending on the narrative chosen by the media.

Sentiment Analysis for Media

Sentiment analysis is a technique used to evaluate opinions, sentiments, and emotions expressed in text. In the media context, sentiment analysis helps identify positive, negative, or neutral sentiment in news and social comments. This technique allows researchers to understand how the media frames news and its impact on public perception. For example, sentiment analysis of news about refugees can reveal whether media coverage is more positive or negative, and how this influences public opinion.

NLP (Natural Language Processing) Based Sentiment Analysis

Natural Language Processing (NLP) is a field of computer science that focuses on the interaction between computers and human language. Modern NLP techniques such as BERT (Bidirectional Encoder Representations from Transformers) and GPT-3 (Generative Pre-trained Transformer 3) have proven

effective in sentiment analysis due to their ability to understand the context and meaning of complex texts. These models use deep learning approaches to analyze text on a large scale and identify sentiment patterns with higher precision than traditional methods.

Mathematical Models and Formulas for Emotion Analysis

Emotion analysis often uses mathematical models and formulas to measure the intensity and polarity of emotions expressed in text. One model that is often used is the Valence-Arousal (VA) model, where emotions are mapped on two dimensions: valence (positive or negative) and arousal (emotional intensity). Deep learning techniques such as BERT and GPT-3 can be trained using big data to identify these emotional patterns more accurately. For example, this approach can be used to identify the level of emotion in media coverage of refugees and understand how these emotions influence public opinion.

Public Distrust and Disobedience in Social Media Analysis

Public distrust and disobedience are phenomena that often arise in the context of social media, where negative perceptions of certain institutions or groups can encourage public distrust and disobedience. Studies on social media analysis show that widespread negative sentiment can trigger disobedience and damage social stability. For example, negative sentiments towards the government or minority groups can spread through social media and influence public behavior. NLP-based sentiment analysis can be used to identify and understand these dynamics.

Dynamics, Origins, and Trends of Insurgency

Media has an important role in shaping conflict narratives and influencing public perceptions. In asymmetric conflicts, non-state actors often use the media to promote their narratives and influence public opinion. Media framing and sentiment analysis can be used to identify narratives that can affect national stability and design strategies to overcome these threats.

Understanding Security and the Nature of Asymmetric Warfare

National security depends not only on military strength but also on the ability to manage data and public emotions. In this context, understanding the dynamics of public sentiment on represent on media online news is crucial for recognizing and responding to threats to national stability. Research on the nature of asymmetric warfare emphasizes the importance of sentiment analysis and data management to minimize the negative effects of propaganda and data manipulation. In this context, understanding how the media and public sentiment can be used as tools in information warfare is important. For example, sentiment analysis can help identify propaganda patterns used by insurgency groups to influence public opinion.

METHODOLOGY

Research Approach

Resources: Information will be collected from various This research uses quantitative and qualitative approaches to analyze media framing and public sentiment towards Palestinian and Rohingya refugees. This approach involves collecting and analyzing data from various online media sources as well as using NLP (Natural Language Processing) techniques for sentiment analysis.

This research employs both quantitative and qualitative approaches to analyze media framing and public sentiment towards Palestinian and Rohingya refugees. The qualitative aspect focuses on examining how different media outlets frame news coverage, identifying patterns in language use, emphasis, and narratives that shape public perception. Meanwhile, the quantitative approach utilizes data from various online media sources, applying Natural Language Processing (NLP) techniques to conduct sentiment analysis. NLP enables the identification of emotional tones, biases, and trends in media reporting and public reactions on digital platforms. By integrating these methods, the research aims to provide a comprehensive understanding of how media representation influences public opinion and policy responses towards these refugee crises.

Data Source

Research data was collected from online news articles published by international media and Indonesian media during a certain period. Data sources include:

1) News articles from international online media such as BBC, CNN, Al Jazeera, and The New York Times.
2) News articles from Indonesian online media such as Kompas, Tempo, and Detik.
3) Comments and posts from social media such as Twitter and Facebook relating to Palestinian and Rohingya refugees.

Data Collection Techniques

Data collection was carried out using web scraping to collect news articles and social media comments. In addition, it uses the Twitter API to download tweets that are relevant to certain keywords.

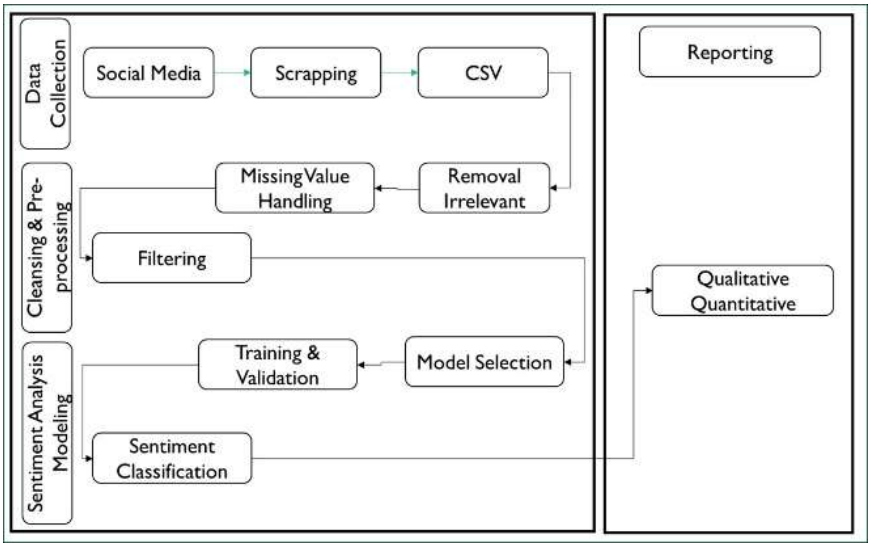
Media Framing Analysis

To analyze media framing, this research uses a qualitative approach with content analysis methods. News articles were analyzed to identify key themes, narratives, and points of view used in coverage of Palestinian and Rohingya refugees. Framing analysis will be carried out following Entman's framework, which involves identifying emphasized aspects, causes of problems, moral judgments, and suggested solutions.

NLP Based Sentiment Analysis

Sentiment analysis is carried out using NLP techniques, especially deep learning models such as BERT (Bidirectional Encoder Representations from Transformers). Sentiment analysis steps include:

1) Data Pre-processing: Cleans text data by removing punctuation, numbers, and special characters, and performing tokenization and stemming.
2) Data Labeling: Text data is labeled with positive, negative, or neutral sentiment using supervised learning algorithms.
3) Model Training: The BERT model is trained using a pre-labeled dataset to classify text sentiment.
4) Model Evaluation: Models are evaluated using accuracy, precision, recall, and F1-score metrics to ensure optimal performance.
   Here is the step explained below:



Mathematical Models and Formulas for Emotion Analysis

The Valence-Arousal (VA) model is used to measure the intensity and polarity of emotions in text. Emotions are mapped on two dimensions: valence (positive or negative) and arousal (intensity of the emotion). The mathematical formula used to measure valence and arousal is:

$$V = \frac{\sum_{i=1}^{n} v_i \cdot \omega_i}{\sum_{i=1}^{n} \omega_i}$$
$$A = \frac{\sum_{i=1}^{n} a_i \cdot \omega_i}{\sum_{i=1}^{n} \omega_i}$$

Where $\boldsymbol{v_i}$ and $\boldsymbol{a_i}$ are the valence and arousal scores of the word $\boldsymbol{i}$, and $\boldsymbol{\omega_i}$ is the weight of the $\boldsymbol{i}$ word based on its frequency of occurrence.

Social Media Data Analysis

Social media data analysis was carried out to identify the dynamics of public distrust and disobedience related to the refugee issue. Tweet and social media comment data are analyzed to identify patterns of negative sentiment and narratives that can fuel public distrust and non-compliance.

Data Validation and Triangulation

To ensure the validity and reliability of the data, data triangulation was carried out by comparing the analysis results from various sources and methods. Validation is also carried out through cross-validation on the NLP model to avoid overfitting.

RESERACH RESULTS

Media Framing Analysis Results

From the analysis of media framing towards Palestinian and Rohingya refugees, several main themes were found that were raised by international online media and Indonesian media. International media tends to emphasize humanitarian aspects and the suffering of refugees, while Indonesian media focuses more on domestic political and security implications.

For example, news about Palestinian refugees is often framed as victims of conflict who need international assistance, while news about Rohingya refugees is more often associated with domestic issues such as national security and social impacts. This framing shows that there are different perspectives in reporting that can influence public perceptions of the two groups of refugees.

Sentiment Analysis Results

Sentiment analysis using the BERT model shows that public sentiment towards Palestinian refugees tends to be more positive than sentiment towards Rohingya refugees. From the data collected, it was found that around 60% of news articles about Palestinian refugees had positive sentiments, while only 40% of news stories about Rohingya refugees showed positive sentiments.

Social media sentiment analysis also reveals that public comments on platforms such as Twitter and Facebook tend to be more negative towards Rohingya refugees compared to Palestinian refugees. This can be seen from the high frequency of negative comments that mention threats to national security and stability.

Mathematical Models and Formulas for Emotion Analysis

Using the Valence-Arousal (VA) model, it was found that news about Palestinian refugees had higher valence scores (more positive) and lower arousal scores (calmer) compared to news about Rohingya refugees, who tended to have higher arousal scores (more intense).

The mathematical formulas used to calculate the valence and arousal scores provide a clear picture of the intensity of the emotions expressed in the text. For example, news articles about Rohingya refugees often show more intense and negative emotions, reflecting the public's level of distrust and concern.

Dynamics of Public Distrust and Disobedience

Social media analysis shows that the dominant negative sentiment towards Rohingya refugees can trigger public distrust and non-compliance with government policies regarding refugees. These negative sentiments are often

expressed in the form of comments criticizing government policies and expressing concern about the social and economic impact of the refugee presence.

RESULT AND DISCUSSION

The research results show that media framing and public sentiment towards Palestinian and Rohingya refugees are strongly influenced by the political and social context. Different news framing creates different perceptions among the public, which in turn can affect national stability.

These findings support the theory about the role of the media in shaping public opinion and influencing the dynamics of social media analysis and asymmetric warfare. Widespread negative sentiment can increase the risk of public insurgency and non-compliance, which threatens national stability and security.

This research also shows the importance of using NLP techniques and sentiment analysis to understand the dynamics of public emotions. By understanding the sentiments and emotions underlying public opinion, governments and policymakers can design more effective strategies to address sensitive issues such as the refugee crisis.

CONCLUSION

1) Differences in Media Framing: This research found that the media framing of Palestinian and Rohingya refugees is significantly different. International media tends to frame Palestinian refugees as victims who need humanitarian assistance, while Rohingya refugees are more often framed in the context of national security issues by the Indonesian media. This difference in framing contributes to differences in public perceptions of the two refugee groups.
2) Public Sentiment: Sentiment analysis shows that public sentiment towards Palestinian refugees is more positive than sentiment towards Rohingya refugees. This is reflected both in news articles and comments on social media, where negative sentiment towards Rohingya refugees is more dominant.
3) Emotion and Intensity: Through the Valence-Arousal model, it was found that news about Rohingya refugees showed higher and more negative emotional intensity compared to news about Palestinian refugees. These intense emotions can trigger public distrust and non-compliance with government policies.
4) Impact on National Stability: Negative sentiment and negative framing towards Rohingya refugees can affect national stability by increasing the risk of insurgency and public disobedience. These dynamics demonstrate the importance of a deeper understanding of how the media and public opinion interact in the context of sensitive issues.

RECOMMENDATION

1) Balanced Media Strategy: The media is expected to implement a more balanced and fair reporting strategy, focusing on the humanitarian aspects

of all refugee groups regardless of their origins. This can help reduce negative stigma and increase public solidarity.

2) Use of NLP for Policy: Governments and policy makers must utilize NLP techniques and sentiment analysis to monitor and understand the dynamics of public emotions in real-time. This information can be used to design policies that are more responsive and support national stability.
3) Public Education: There is an urgent need to improve public education on refugee and human rights issues. Effective awareness campaigns can help reduce prejudice and increase public support for refugees.
   Collaboration with Social Media: Governments and non-governmental organizations should work together with social media platforms to tackle disinformation and negative narratives that can influence public opinion. Proactive measures such as accurate information campaigns and content moderation can help reduce the negative impact of online sentiment.

FURTHER STUDY

It is recommended to conduct further, more in-depth research on the long-term impact of media framing and public sentiment on refugee policy. This research should cover a variety of countries and contexts to gain a more comprehensive understanding.

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