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The utilization of drone emprit in seeing the trend of increasing oil fuel through social media data

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ABSTRACT

This study investigates the use of drone emprit as a tool to monitor the trend of increasing fuel prices through analysis of data obtained from social media platforms using twitter. The aim of this study is to develop a new approach in understanding and forecasting fuel price fluctuations by utilizing widely available data on social media. The research combines drone emprit technology to get a visual picture of the situation at various fuel distribution sites, and integrates it with text and sentiment analysis taken from social media platforms. The methodology used includes visual data collection using drone emprit, collection of text data from social media platforms, and integrated data processing and analysis. The results of this study are expected to provide deeper insights into the factors influencing fuel price increases, including social and economic factors reflected in online conversations. By combining visual data and text analysis, the study contributes to the development of new methodologies for understanding and forecasting economic trends using innovative data sources.

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Introduction

Fuel oil plays a crucial role in the global economy and people's daily lives. Fluctuations in fuel prices have a significant impact on various aspects of life, including mobility, industry, and inflation. Therefore, accurate monitoring and understanding of the trend of rising fuel prices is essential in making informed economic and business decisions. In this digital age, social media has become an invaluable source of data in understanding people's views, reactions to events, and social trends (Najiyah, 2023). More and more individuals are sharing their opinions, experiences, and sentiments online, creating a digital footprint that reflects perceptions and responses to global events, including rising fuel prices (Nuzila, 2022) (Hrp & Aslami, 2022).

However, social media data analysis does not always include visual dimensions that can provide valuable additional information. Drone emprit, an innovative technology that allows shooting images and videos from low altitudes, can provide a richer visual view of the situation at fuel distribution sites and other related places. The combination of visual data from drone emprit with text and sentiment

analysis from social media has the potential to provide more complete and accurate insights into the factors influencing the upward trend in fuel prices (P Suharso, 2019).

In this context, this study aims to combine drone emprit technology with social media data analysis to come up with a new approach in understanding and forecasting fuel price fluctuations. By integrating visual data and text analysis, this research is expected to make a significant contribution in the development of a more holistic and innovative methodology in analyzing economic trends. In the following chapters, we will go into more detail about the methodology used, data analysis, potential findings, as well as the implications of this research in economic and business contexts (Putut Suharso, 2019) .

As for the beneficial impact of this research is that it can increase a deeper understanding of Influence Factors, this research is expected to provide deeper insight into social, economic, and environmental factors that influence the trend of increasing fuel prices. By combining visual data and text analysis, this research can help identify and understand the complex dynamics underlying price fluctuations. The results of this study can contribute to the development of predictive models to forecast future trends in fuel oil prices (I Fahmi, 2020b). This can help governments, the energy industry, and other business sectors in planning and taking more proactive actions in the face of price changes. By understanding public sentiment and opinion through social media analysis, this research can help governments and companies in designing policies and strategies that are more responsive to people's needs and concerns related to fuel prices (Bahtiar, Hanafi, Putra, & Hartanti, 2023; Hastuti, Maulana, Tompo, & Ferizka, 2023).

Visual information obtained from drone emprit can provide a more detailed view of the field situation at fuel distribution sites. This can help in optimizing distribution and mobility plans in areas affected by price changes. This research can also contribute to further research on the use of drone emprit in various contexts of economic and social analysis. In addition, the cross-disciplinary approach used can inspire technological and methodological innovation in the future. In a competitive business environment, more information about fuel oil price trends can give companies a competitive advantage in planning more effective pricing and distribution strategies (Adji, Bashith, Nashith, & Amin, 2019).

This research can raise public awareness about the impact of fuel oil prices and the factors that influence fluctuations. This can provide the public with better information to make decisions regarding mobility and energy expenditure. Thus, the results of this study have the potential to have a significant positive impact on various economic, social, and environmental aspects related to fuel oil prices (Bashith, Adji, & Nurdin, 2021) (Qabil et al., 2022).

Method

The research adopts a cross-disciplinary approach that combines drone emprit technology with social media data analysis to understand the trend of increasing fuel prices. The method used can be described in the following stages:

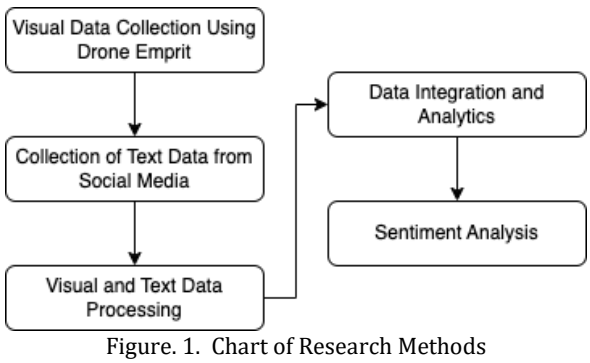

Figure. 1. Chart of Research Methods
Source: Research Processed Results

The method used can be described in the following stages:

1. Visual Data Collection Using Drone Emprit:
   - Drone emprit are used to take pictures and videos from locations relevant to the distribution of fuel oil, such as refueling stations, oil processing plants, and distribution lines.
   - Visual data obtained from drone emprit includes a more detailed visual picture of the ground situation, including fuel scarcity, queues, and other related activities.
2. Collection of Text Data from Social Media:
   - Text data is retrieved from various social media platforms such as Twitter, Facebook, and Instagram using relevant web scraping tools or APIs.
   - Text data includes posts, comments, and messages that reflect people's views and reactions to changes in fuel prices.
3. Visual and Text Data Processing:
   - Visual data from drone emprit are analyzed to identify specific patterns or situations related to fuel price trends.
   - Text data is analyzed to identify keywords related to fuel prices, public sentiment, and social or economic factors that might influence trends.
4. Data Integration and Analytics:
   - Visual data and text analysis are integrated to provide a comprehensive picture of the field situation and community reactions.
   - Possible correlations between visual and text data are explored to identify patterns that might indicate factors contributing to price trends.
5. Sentiment Analysis:
   - Sentiment analysis techniques are used to assess the general sentiment contained in text data.
   - Sentiment analysis helps in identifying whether the public is likely to respond positively or negatively to rising fuel prices(Ismail Fahmi, 2018).

Through this cross-disciplinary approach, the study seeks to combine visual data obtained from drone emprit with text and sentiment analysis from social media(Wahyuddin, Sudipa, et al., 2023). This method is expected to provide deeper insights into the factors influencing the upward trend in fuel oil prices, as well as contribute to the development of new approaches in economic trend analysis using innovative data sources (Pangestu & Perlita, 2023).

Results and Discussions

In this study, we applied an innovative approach by using drone emprit to obtain visual data from fuel oil distribution locations and combine it with social media data analysis to see trends in increasing fuel prices,can be seen in Table 1 related to Twitter users' comments or responses to the increase in fuel prices (Tambunan, Aprilia, & Rahayu, 2022; Wardani, Suriana, Arfah, Zulaili, & Lubis, 2022)

Table 1. Twitter users' response to fuel price hike

Avatar	User	Status	#Followers	#Retweeted	All Time	Sentiment
 1	Dr. Indra Kusumah @aindraku	RON 95 (quality above Pertamax) in Malaysia is priced at RM2.05 or Rp6,642/liter. Much cheaper than Pertalite in Indonesia pdhl the quality is below (RON 90). Surprisingly Pertamina Lost 191 but Petronas (Malaysia) Profit 853 T. So cancel the fuel increase! Pertamina Reform! https://t.co/bdYJb80Hnk 3/Sep/2022 23:30 WIB	15,599	4,916	10,720 24,563	Negative 100%

	Miw. @lilaccountz	Fuel is getting more expensive, kitchen ingredients are getting more expensive, salaries are not going up. This is not because of tawakkal with Allah and the blessing of sustenance that Allah loves, already crazy living in this country is so dizzy managing finances daily 3/Sep/2022	61,442	4,284	11,786 39,326	Negative 100 %
	Dandhy Laksono @Dandhy_Laksono	Jokowi came to power with a strategy of "quick wins" through infrastructure projects and various "cash transfers", because it is most easily visible There were no breakthroughs in other sectors such as law, health, agrarian, environment. The state budget was also stuck. Fuel is raised. The solution: "cash transfer" again. 3/Sep/2022	240,436	2,845	6,505 17,135	Positive 94.59 %
	Dino ajor @ripbotttt	The purpose of fuel is to reduce people who like to ride motorbikes aimlessly while crying	10,082	2,487	6,918 26,830	Negative 100 %
	Eko Widodo @ekowboy2	Fully support the labor & student movement stand with the people against the increase in fuel prices The one who is standing.. Please retweet loudly!!	104,969	2,372	4,264 6,559	Neutral 93.8 %

The results of this study bring valuable insights into the impact of the trend of rising fuel prices on society (Wahyuddin, Rismayani, et al., 2023), which is based on a combination of visual data and sentiment analysis from social media (I Fahmi, 2020a; Ismail Fahmi, 2017). Some relevant discussion points are:

1. Correlation Between Field Situation and Community Response:
   - It can be observed whether field situations, such as long lines at charging stations, have a correlation with more negative community responses.
   - This pattern can indicate how real situations affect people's perceptions.
2. Factors Affecting Sentiment:
   - The study can identify certain factors that trigger negative or positive responses in the context of rising fuel prices.
   - These factors can involve economic conditions, energy-related news, or the influence of global trends.
3. Policy and Crisis Management Recommendations:
   - These results could provide valuable input for governments and the energy industry in the face of rising fuel prices.
   - Recommendations may include measures to manage crisis situations and respond to public sentiment.
4. More Comprehensive Conclusion:
   - Through this combined approach, more comprehensive conclusions can be drawn about the

factors affecting fuel prices and their impact on society.

Thus, the use of drone emprit in observing the field situation and sentiment analysis from social media data provides an innovative approach to understanding the trend of increasing fuel prices(Ramadhan et al., 2023; Samosir, Wahyuddin, & ..., 2022). The integration of visual and text data allows for a deeper understanding of the complex dynamics between physical conditions and societal responses (Arianto, 2020).

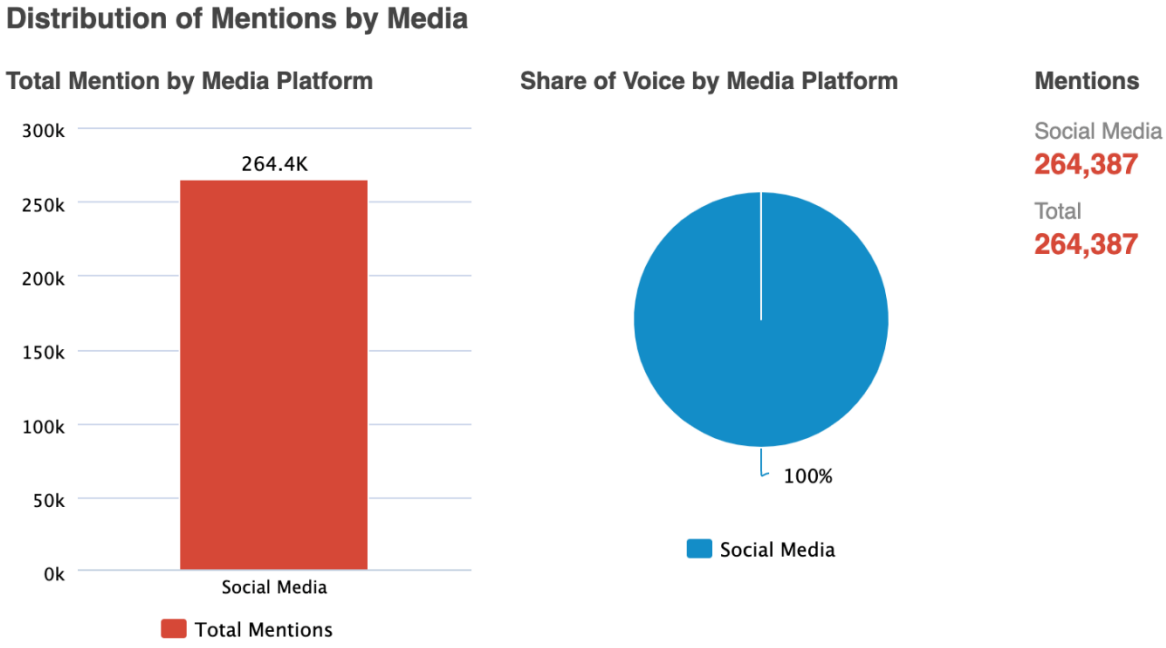

Figure. 2. Distibution of Mentions by Media
Source: Drone Emprit Academic

In figure 2. can see the total mentions from the media platform which is 264.4K and the total mentions through social media are 264,387 users. The total negative mentions on the fuel increase of 182.0K and positive mentions of 64.7K neutral as much as 17.7K can be seen in figure 3.

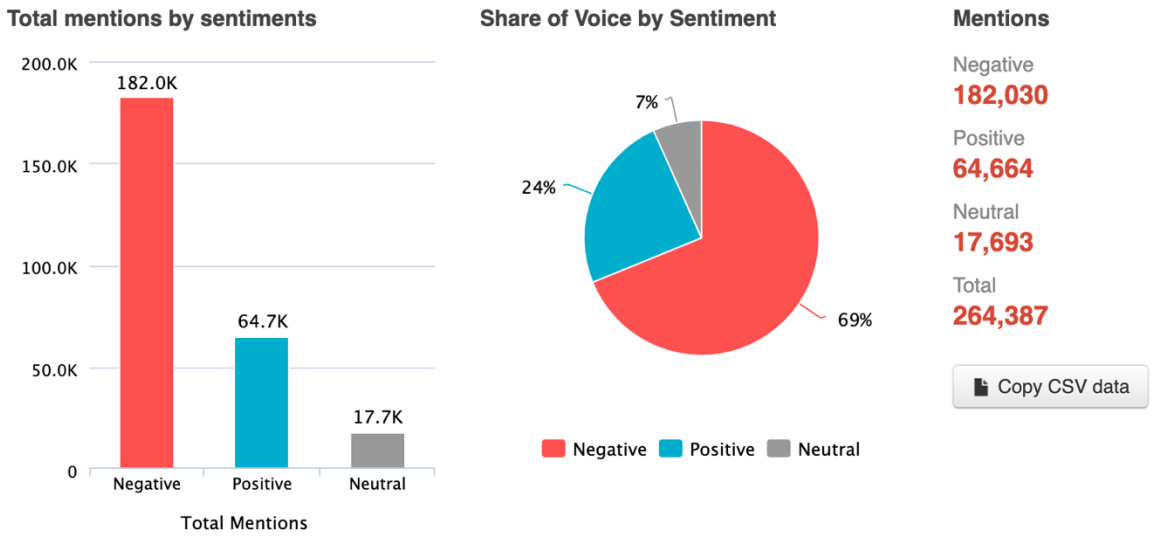

Figure. 3. Total Mentions by Sentiments

Source: Drone Emprit Academic

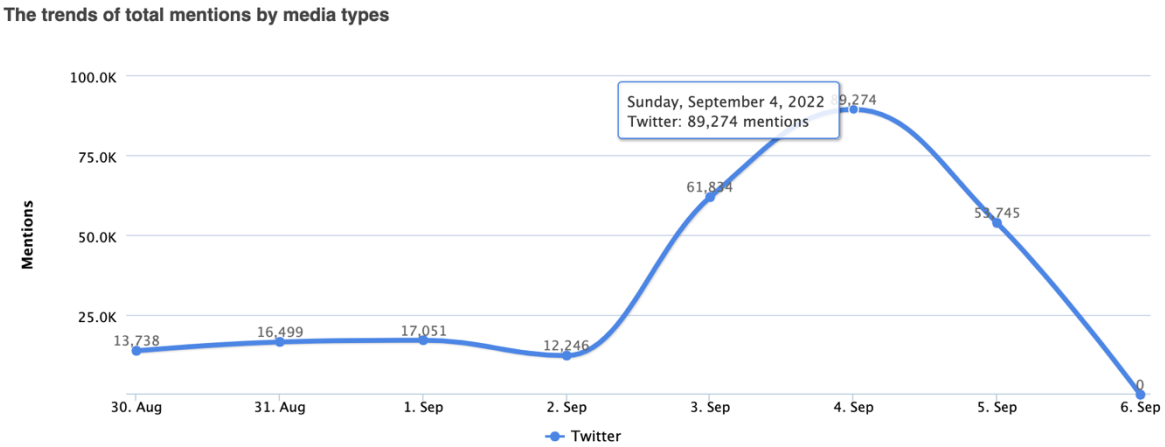

Figure. 4. The Trends of Total Mentions by Media Types
Source: Drone Emprit Academic

In figure 4. It can be seen the upward trend in mentions during the fuel price increase, where there were 89,274 mentions on September 4, 2022 and decreased dramatically on September 6, 2022. Social media data reflects people's real-time response to fuel price trends. It provides information about how price changes affect people's views and emotions.

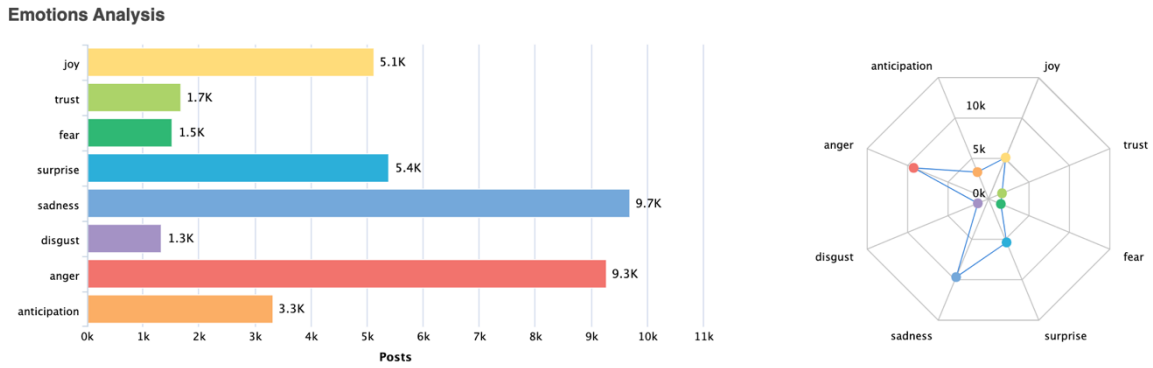

Figure. 5. Emotions Analysis
Source: Drone Emprit Academic

In the context of this study, we will investigate the way in which human emotions are reflected in text data generated across various social media platforms (Tantriawan et al., 2023). By analyzing the types of emotions reflected in comments, posts, and messages, we can weave a more complete picture of people's emotional responses as seen in figure 5.

By applying emotion analysis to social media data generated through the utilization of drone emprit, the study will provide deeper insights into how people's emotions contribute to perceptions and responses to fuel price trends. The implications of this research could extend toward business decision-making, monitoring public opinion, and developing policies that are more responsive to social and economic change. In other words, emotion analysis becomes a window connecting perceptions formed by visual data and emotional responses reflected in texts in cyberspace.(Wahyuddin, Heryana, et al., 2023)

One popular form of visualization is a "word cloud." In the context of using drone_emprit to see trends in increasing fuel prices through social media data, the use of word clouds provides an interesting visual picture of the words that appear most often in online conversations on this topic. can be seen in

figure 6. By applying a visual word cloud approach to social media data generated from the utilization of drone emprit, this research not only provides text information, but also helps to visually represent people's insights and opinions. This supports a deeper understanding of emotional responses and views to changes in fuel prices (Wibowo et al., 2023). The use of word cloud in this context creates a bridge between visual data obtained from drone emprit and people's verbal views contained in social media data.

Figure. 6. Word Cloud
Source: : Drone Emprit Academic

Conclusions

In conclusion, the use of dronr emprit as a tool to monitor the trend of rising fuel prices through social media data has great potential in providing additional insight into the factors that influence these price fluctuations. The drone emprit academic application can be an alternative to reading and analyzing current public opinion. The research has shown that combining visual data from drone emprit with text and sentiment analysis from social media platforms can provide a more comprehensive picture of social, economic, and public opinion factors associated with changes in fuel prices. Using drone emprit technology, the study enables real-time monitoring of the situation at various fuel distribution locations, which can provide valuable information for price trend analysis. The combination of visual data and text analysis from social media also provides an edge in understanding people's perceptions and reactions to fuel price increases. A total of 264K users gave mentions including negative mentions on the increase in fuel by 182.0K and positive mentions of 64.7K neutral by 17.7K. This illustrates that when there is an increase in fuel, social media users give more negative mentions to the increase and the graph of the spike in mentions occurs for about 1 to 2 days, then mentions from social media users will decrease. The suggestion for further research is that the trend of increasing fuel through social media data is an interesting and relevant research topic, there needs to be a comparative analysis of data found on social media through drone emprit applications with official data or government statistics related to fuel prices. This will help gauge the extent to which price changes discussed on social media correspond to economic realities. Using historical data and trends found on social media, build predictive models to forecast future changes in fuel prices. This can be an interesting challenge that blends sentiment analysis with statistical analysis. Therefore, the development of more accurate methods for integrating and analyzing data from multiple sources will be an important step in future research.

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