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## Sentiment Analysis to Know Public Perception Regarding to Public Communication of Indonesian Customs and Excise

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**ABSTRACT:** This study highlights the positive impact of social media sentiment analysis in enhancing public perception of the Directorate General of Customs and Excise in Indonesia. By employing the Social Media Analytics (SMA) framework and the Brand24 tool, the research examines public sentiment on Twitter and TikTok during two periods in 2024. The findings reveal a significant improvement in sentiment from May to mid-August, driven by the government's proactive and transparent communication, including direct intervention by the Minister of Finance. This shift underscores the effectiveness of responsive governance in fostering public trust and engagement. The study emphasizes the value of ongoing sentiment monitoring, proactive communication strategies, and the promotion of ethical standards as key to maintaining and further enhancing public confidence. These insights contribute positively to the understanding of social media's role in public sector communication and its potential to support better governance.

**Keywords:** Customs and Exice, Social Media Analytics, Sentiment Analysis, Public Communication



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## INTRODUCTION

Technological advancements have transformed the lives of modern society. The government must be capable of meeting the increasingly critical needs of the public. Feedback from the public, both positive and negative, is essential in shaping a good and transparent government. Since the government itself is an entity that regulates and leads the country, it is responsible for serving the citizens and for formulating and implementing policies. Additionally, the government's function is to disseminate information and communicate its goals and policies to the public through traditional, conventional, and new media (CNN Indonesia, 2024; Holsapple et al., 2018; Hong, 2022; Suseno et al., 2018).

The development of technology enables direct and fast communication with the public, which is increasingly favored. Internet users in Indonesia reached 221 million out of a total population of

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278 million in 2023. This indicates a positive trend in Indonesia's internet penetration, reaching 79% of the total population (We Are Social, 2024).

On the Twitter platform, the term "tweet" refers to messages or status updates posted by users. Each tweet is an expression of the feelings or situations experienced by Twitter users. Additionally, tweets can reflect users' opinions on events or situations they are encountering. These opinions are not merely personal expressions but can also serve as important indicators for evaluating responses to specific companies or institutions. Thus, tweets not only function as a means of quickly sharing information and thoughts but also as tools to gauge public sentiment and assessments of various entities within the context of social media (Cahyono, 2017; Moss et al., 2015; Reddick et al., 2017).

In early 2024, the Directorate General of Customs and Excise (Direktorat Jenderal Bea dan Cukai) of the Ministry of Finance became the center of attention on social media due to criticism of their performance and the services provided by certain employees. The Minister of Finance, Sri Mulyani, intervened to respond to these criticisms. According to public policy observer Trubus Rahadiansyah, these cases indicate unethical practices by some individuals in Customs and Excise, who exploit regulatory loopholes for their personal gain (CNN Indonesia, 2024).

Social media is a collection of technological tools that enable interaction and various activities among the public. Its functions are diverse, including communication between individuals or groups, use in work or business, sources of entertainment, and even the dissemination of false information or hoaxes. Twitter (X) and TikTok are typical examples of social media. These platforms allow active user participation, are public, support two-way conversations, form communities based on interests, and utilize networks of user connections (Ibrahim et al., 2021).

Twitter (X) allows users to share short messages called tweets. Participation is widespread through retweets, replies, and likes. Twitter's openness is evident from the ease of creating accounts and following other users. Conversations occur through replies and threads, while communities are formed through hashtags and trending topics. Connectivity arises as users follow other accounts and engage in discussions (de las Heras-Pedrosa et al., 2022; Jia, 2022; Moore, 2016a, 2016b).

TikTok allows users to create and share short videos. Active participation is seen in the creation and sharing of videos. Openness is reflected in the platform's easy access and usage. Conversations occur through comments and video duets. Communities are formed based on viral trends and challenges. Connectivity occurs through interactions and collaborations between users. With these characteristics and features, it is clear that Twitter (X) and TikTok meet the criteria as social media platforms. These platforms enable widespread participation, openness, conversation, community building, and connectivity between users, making them prime examples of current social media (Hansen & Hilbrich, 2022; Lemon & VanDyke, 2021; Patel et al., 2023; Wang et al., 2021).

Social Media Analytics (SMA) is an approach to understanding and measuring social media performance in real-time. It involves methods for monitoring trending topics, measuring likes, comments, and content shares, conducting statistical analysis, mapping topics or social networks, and measuring sentiment in shared content. SMA encompasses four main stages in its process. These stages consist of discovery, tracking/collection, preparation, and analysis. By understanding the dynamics and sentiment on social media, organizations can respond more effectively to online issues and events (Stieglitz et al., 2018).

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The first stage, discovery, involves identifying themes or subjects to be analyzed. This requires a deep understanding of the issues being discussed on social media and their relevance to the analysis's objectives. Once the theme is determined, the second stage is tracking or data collection. This involves searching and collecting data from various sources like Twitter (X) and TikTok. Data collection must be conducted carefully to ensure all relevant information related to the theme is accessed. The third stage is preparing the data for analysis. The collected data is structured into a suitable format, cleaned of noise or irrelevant information, and prepared for further analysis. It is important to ensure the data is ready to be analyzed according to the research objectives (Arts et al., 2016; Hartgerink & van Zelst, 2018; Yang, 2021).

The final stage is analysis, according to the set objectives. This involves analyzing the data to gain valuable insights related to the chosen theme. The analysis can include techniques such as trend analysis, social network mapping, or sentiment analysis. The results of this analysis are used to draw conclusions and make relevant recommendations according to the organization's needs or research objectives. Thus, the SMA stages help ensure that the analysis process is conducted carefully and directed to gain insights from social media data.

Sentiment Analysis (SA) is the process of evaluating opinions or views in text, especially on social media, to determine whether the sentiment is positive, negative, or neutral. Sentiment analysis is a key component of the SMA framework. Sentiment analysis is an automated process for extracting, understanding, and processing unstructured text to identify attitudes in opinions spread on social media. The results are categorized as positive, negative, or neutral, helping organizations improve and enhance their performance (Gautam & Yadav, 2014).

From a machine learning perspective, SA is considered a classification problem, where the goal is to categorize text into positive or negative sentiment (Murfi et al., 2019). However, in this study, the Brand24 tool was used to easily conduct Sentiment Analysis. Brand24 uses the Estimated Social Media Reach (ESMR) algorithm to estimate social media reach, which is the number of people mentioning the monitored keywords. This estimate is based on factors such as the number of discussions and engagement levels. Brand24 provides insights into public sentiment towards the researched entity, making it easier to collect and analyze social media data. This tool monitors four main aspects: the number of people using the keywords, the number of followers, the number of interactions (likes, comments, shares), and the Visibility Percentage, which shows how many followers viewed the post (Hutagalung et al., 2023).

Several studies have delved into the relationship between social media and sentiment analysis. An analysis of the sentiment of tweets pertaining to Donald Trump and Jokowi amidst the Covid-19 policies (Dwianto et al., 2021). Analyzing Jokowi's communication with the public through tweets during the Covid-19 crisis (Prayoga, 2020). Additionally, (Pratama et al., 2019) concentrated on sentiment analysis on Twitter to comprehend public responses to the DKI Jakarta Governor election debate. These studies offer valuable insights into public opinion and sentiment across different contexts, thereby underlining the significance of analyzing text data from social media.

Based on this background, research is needed to map public sentiment towards Customs and Excise through issues circulating on social media. Social media is not only a platform for sharing information but also serves as a foundation for decision-making. According to (Tsou et al., 2015), companies use social media reports to support decision-making processes, both ex-post and in real-time. The Social Media Analytics (SMA) framework is relevant for this analysis (Stieglitz et al., 2018). Social media analysis provides valuable insights for developing effective strategies (Nulty et al., 2016). This research will contribute to the literature on sentiment analysis and provide guidance

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to Directorate General of Customs and Excise stakeholders in making policy decisions and communication strategies.

## METHOD

Based This research uses the Social Media Analytic (SMA) framework approach, with a special focus on Sentiment Analysis (SA) using the Brand24 tool. Brand24 is a social media analytics tool that provides a variety of features to analyze data from various social media platforms such as Facebook, Twitter, and TikTok. This tool is also able to measure social media performance through various metrics such as the number of likes, responses, shares, and positive and negative mentions (Hutagalung et al., 2023).

The data used in this study was collected from social media posts related to Customs. The main objective of this study is to analyze the sentiment of Indonesian netizens towards Customs policies and performance, identifying whether the sentiment is positive, negative, or neutral. For this purpose, keywords used include #beacukai, #beacukai, @beacukai, and @beacukai, with data collected in Indonesian language over a one-month period.

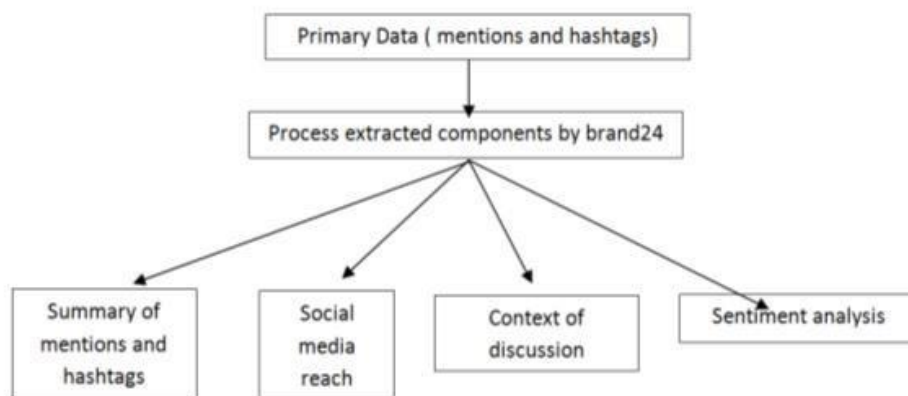


Figure 1. Research Design

The data collection process in this study was facilitated by Brand24. Through this software, users only need to select relevant keywords. In the context of this research, the keywords used are #beacukai, #beacukai, @beacukai, and @beacukai. After that, the data coverage period must be specified, which in this case is one month. Brand24 then automatically processes the keywords to generate various forms of infographics. These infographics include sentiment analysis, a summary of the mentions, the forms of emotions that appear in the mentions, and an overall score that shows the percentage of visibility.

This systematic approach allowed the researcher to get a clear and comprehensive picture of public perceptions of Customs on social media. By using Brand24, this research was able to leverage technology to efficiently collect and analyze data on a large scale. The results of this analysis are expected to provide deep insights into how the public responds to Customs' policies and performance, as well as provide a solid basis for improvement and development of Customs' communication strategy in the future.

## RESULT AND DISCUSSION

This graph shows the overall results of mentions on social media, according to the keywords #beacukai #beacukai @beacukai @beacukai.

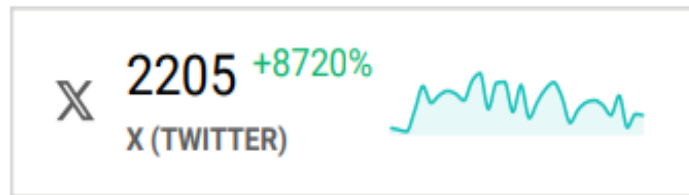


Figure 2. Number of mentions on Twitter in the month of May 2024

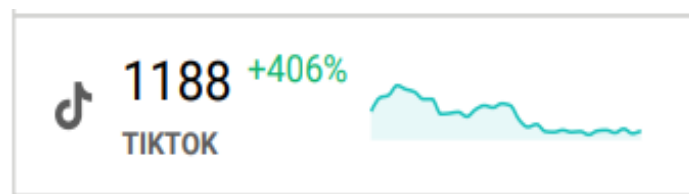


Figure 3. Number of mentions on TikTok in the month of May 2024

Based on the analysis results through brand24, it can be seen that the keyword #beacukai #beacukai @beacukai @beacukai is used more by X (Twitter) users than TikTok users. The first graph shows the results of mentions using the keyword #beacukai #beacukai @beacukai @beacukai as many as 2205 mentions from X (Twitter) users, while the second graph shows 1188 mentions using the keyword #beacukai #beacukai @beacukai @beacukai from TikTok users.

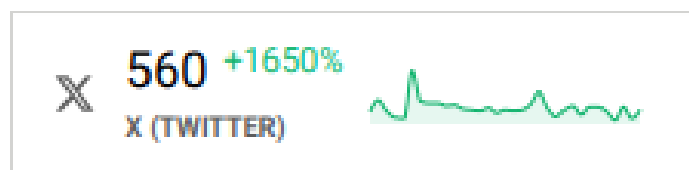


Figure 4. Number of mentions on Twitter in the middle of July to middle of August 2024

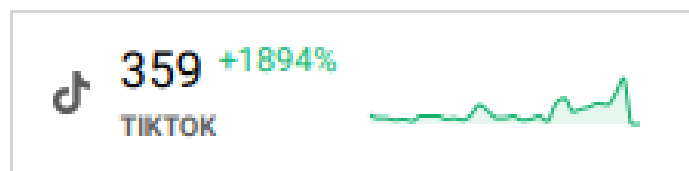


Figure 5. Number of mentions on TikTok in the middle of July to middle of August 2024

As for the results of the analysis through brand24 in the second period, namely from July until August 2024, it can be seen that the keyword #beacukai #beacukai @beacukai @beacukai is used more by X (Twitter) users than TikTok users. The first graph shows the results of mentions using the keyword #beacukai #beacukai @beacukai @beacukai as many as 560 mentions from X (Twitter) users, while the second graph shows 359 mentions using the keyword #beacukai #beacukai @beacukai @beacukai from TikTok users.

### **Sentiment Analysis Examples of Tweet/Mention on Social Media**

This graph shows the results of sentiment search based on different emotions on social media, according to the keywords #beacukai #beacukairi @beacukai @beacukairi.

One example of a positive sentiment tweet with the keyword #beacukai #beacukairi @beacukai @beacukairi on Twitter is done by the account @Pepatah\_dr\_Chin. This Tweet/Mention belongs to the Admiration emotion category because this account holder is amazed and proud that Indonesia Customs can carry out international cooperation with Singapore and Malaysia Customs.



*Figure 6. Example of tweet-/ mention with positive sentiment*

One example of a negative sentiment tweet with the keywords #beacukai #beacukairi @beacukai @beacukairi on Twitter was made by the account @mursyid\_yusuf. This Tweet/Mention falls into the Fear emotion category because the account owner is afraid to bring home the electronic goods he bought when he studied abroad. He is afraid that the goods he bought will be banned by the Directorate General of Customs and Excise (DJBC).



*Figure 7. Example of a tweet-/ mention with negative sentiment*

One example of a positive sentiment tweet with the keyword #beacukai #beacukairi @beacukai @beacukairi on Twitter was done by the account @code08\_2024. This tweet/mention belongs to the Joy emotion category because the account holder is happy and excited that the Minister of Finance (Menkeu) Sri Mulyani Indrawati has intervened directly to deal with the problems that have plagued the Directorate General of Customs and Excise (DJBC).

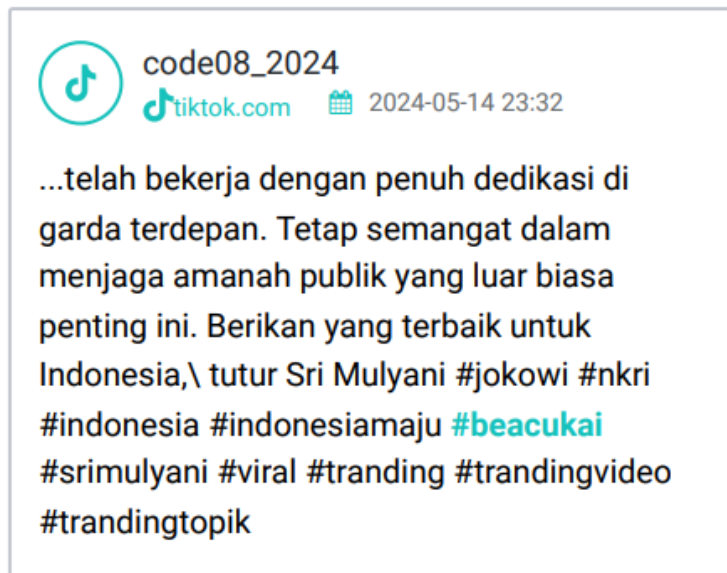


Figure 8. Example of tweet-/ mention with positive sentiment

One example of a negative sentiment tweet with the keyword #beacukai #beacukairi @beacukai @beacukairi on Twitter was done by the account @Abermartin. This tweet/mention belongs to the Sadness emotion category because the account holder is sad because the Minister of Finance (Menkeu) Sri Mulyani Indrawati was forced to intervene directly to deal with the problems that entangled the Directorate General of Customs and Excise (DJBC) alone.



Figure 9. Example of tweet-/ mention with negative sentiment

### Sentiment Results Indonesia Customs Agency

Sentiment analysis of social media users using the keywords #beacukai #beacukairi @beacukai @beacukairi on social media.

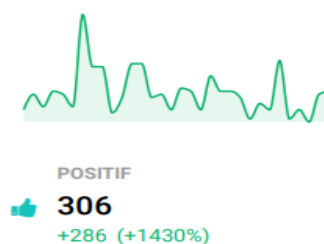


Figure 10. Positive sentiment results in the month of May 2024



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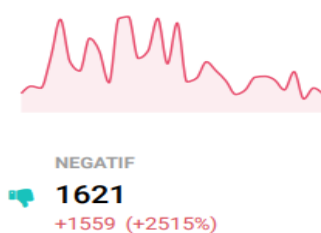


Figure 11. Negative sentiment results in the month of May 2024

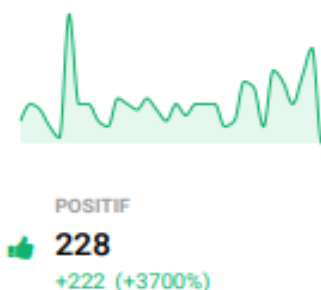


Figure 12. Positive sentiment results in the middle of July to middle of August 2024

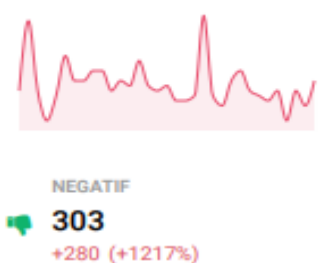


Figure 13. Negative sentiment results in the middle of July to middle of August 2024

Sentiment analysis is a tool used for language processing, text analysis, and computational linguistics to identify and classify public opinion about media. Sentiment analysis is carried out to see the tendency of a person's views or opinions on a problem or object, whether they tend to have a negative or positive view or opinion. The purpose of sentiment analysis is to find out the researcher's attitude towards a document subject. In this study, the results of sentiment analysis based on the two graphs above show positive and negative sentiment analysis.

The two graphs combined show different sentiment analysis results in May 2024, the number of positive sentiment analysis is 306 sentiments. While the number of negative sentiment analysis is 1621. However, if we look at the two graphs in mid-July to mid-August 2024. There are different sentiment analysis results, the number of positive sentiment analysis is 228. While the number of negative sentiment analysis is 303.

Based on information from the sections "Example of Sentiment Analysis of Tweets/Mentions on Social Media" and "Sentiment Results of the Indonesian Customs Agency", there is a noticeable shift in public sentiment during the analyzed period. In the initial period in May 2024, there were 306 positive sentiments versus 1621 negative sentiments, indicating a more critical public perception of Customs at that time. However, in the second period from mid-July to mid-August 2024, the sentiment shifted slightly, with 228 positive sentiments and 303 negative sentiments. This change indicates an improvement in public perception, which was likely influenced by actions



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taken by the authorities, such as the intervention by the Minister of Finance, Sri Mulyani Indrawati, to address issues within the Directorate General of Customs and Excise.

## CONCLUSION

This research underscores the significant role of social media sentiment analysis in understanding public perception of government institutions like the Directorate General of Customs and Excise. The findings reveal a shift in sentiment over the periods analyzed, indicating that public opinion is not static but responsive to actions taken by the institution. Initially, in May 2024, public sentiment was predominantly negative, with criticism aimed at the performance and ethical conduct of certain Customs employees. However, the sentiment analysis from mid-July to mid-August 2024 shows a noteworthy improvement, with a reduction in negative sentiment and a relative increase in positive sentiment.

This shift can be attributed to the proactive measures taken by the government, such as the direct intervention by the Minister of Finance, Sri Mulyani Indrawati. Her involvement likely reassured the public that their concerns were being taken seriously, leading to a more favorable view of Customs. This outcome highlights the positive impact that transparent and responsive governance can have on public perception, particularly when addressing concerns directly and effectively. The research illustrates that public sentiment is not only a reflection of current perceptions but also a potential tool for guiding policy and communication strategies.

Building on the positive trends observed, it is recommended that the Directorate General of Customs and Excise continue to prioritize transparent communication and active engagement with the public. A key strategy is to maintain proactive communication by regularly updating the public on actions taken to address issues and highlighting positive developments. For instance, showcasing successful collaborations with international Customs agencies, as noted in some positive tweets, can enhance the agency's reputation and demonstrate its effectiveness on a global stage.

Ongoing sentiment monitoring is also crucial. Utilizing tools like Brand24 for continuous monitoring of public sentiment on social media will enable Customs to stay informed about public opinion in real-time. This will allow the agency to respond swiftly to emerging concerns, demonstrating a commitment to accountability and responsiveness. By actively engaging with the public, such as through responses to queries, acknowledgments of criticisms, and celebrations of positive feedback, Customs can foster a more interactive and transparent relationship with its audience. Creating forums or Q&A sessions where the public can directly engage with Customs officials could further enhance trust and understanding.

Finally, leveraging the positive sentiments expressed by the public, such as the favorable response to the Minister of Finance's intervention, can help build a narrative of continuous improvement and dedication to serving the public. By sharing success stories and positive feedback, the Directorate General of Customs and Excise can create a more balanced and positive public image, contributing to a more informed and engaged citizenry.

For future research on sentiment analysis in social media related to Customs and Excise, there are several recommendations that can be considered to improve the accuracy and completeness of the research results. First, it is important to expand the list of keywords used in the analysis. In addition

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to the keywords already used, such as #beacukai, #beacukairi, @beacukai, and @beacukairi, other relevant keywords should be added. This aims to capture more data that might have been missed in the previous analysis, providing a more comprehensive overview of the topic being researched.

Additionally, future research should involve more social media platforms. In this study, only Twitter and TikTok were compared, while other platforms like Facebook, Instagram, and YouTube also have large user bases and can provide additional perspectives. By including data from various platforms, sentiment analysis can become more comprehensive and accurate. More in-depth sentiment analysis is also necessary. Future research can attempt to identify nuanced sentiments like skepticism or cynicism, which may not be detected by simpler analysis methods.

A longer data collection period can also provide better insights into sentiment changes over time. For example, comparing data before and after significant policy changes can help identify sentiment trends and public reactions to those policies. Such longitudinal research can provide a more dynamic and contextual understanding of public sentiment. By considering and implementing these recommendations, future research is expected to provide more comprehensive and in-depth insights into sentiment analysis.

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