

# Engaging Investors through Social Media: A Positive Sentiment Analysis of Emtrade's Twitter

Dian Kurnianingrum \*  
Entrepreneurship Department  
Bina Nusantara University  
Jakarta, Indonesia  
[dian\\_k@binus.ac.id](mailto:dian_k@binus.ac.id)

Okky Rizkia Yustian  
Entrepreneurship Department  
Bina Nusantara University  
Jakarta, Indonesia  
[okky.yustian@binus.ac.id](mailto:okky.yustian@binus.ac.id)

Rachel Monica  
Entrepreneurship Department  
Bina Nusantara University  
Jakarta, Indonesia  
[rachel.monica@binus.ac.id](mailto:rachel.monica@binus.ac.id)

Isma Addi Jumbri  
Faculty of Technology Management &  
Technopreneurship  
Universiti Teknikal Malaysia Melaka  
Melaka, Malaysia  
[isma@utem.edu.my](mailto:isma@utem.edu.my)

Rosyidah Rahmah  
Entrepreneurship Department  
Bina Nusantara University  
Jakarta, Indonesia  
[rosyidah.rahmah@binus.ac.id](mailto:rosyidah.rahmah@binus.ac.id)

Budi Rustandi Kartawinata  
Business Administration Department  
Telkom University  
Bandung, Indonesia  
[budikartawinata@telkomuniversity.ac.id](mailto:budikartawinata@telkomuniversity.ac.id)

**Abstract**—This study analyzes the positive sentiment topics in Emtrade's Twitter posts over one year. Emtrade, an EduFinTech company, uses its Twitter account to post information about the stock market. The research collected and analyzed 442 tweets from @emtrade\_id, focusing on 65 positive sentiment tweets. Using sentiment analysis and the LDA algorithm, the study identified five main clusters of positive topics: financial performance, market potential, and investment opportunities, dividends and retail investor engagement, employment, and economic conditions, and market dynamics and commodity prices. The findings show that Emtrade's tweets often discuss strong financial performance, market potential, and investment opportunities, which attract investors. Additionally, tweets about dividends and approachable investments are aimed at retail investors. The study provides insights into Emtrade's communication strategy on social media, highlighting the company's efforts to engage and attract investors through positive sentiment topics.

**Keywords**—Sentiment Analysis, Social Media, Twitter, Stock Market, Investment Opportunities

## I. INTRODUCTION

The stock market is a challenging thing to predict for both academics and practitioners in the world of finance. This is because stock data readers are faced with dynamic and complex data [1]. Even so, stock trading is quite profitable for investors in terms of generating profits. Investors are also always looking for the right ways to analyze the stock market conditions amidst an uncertain environment. Nowadays, there are many ways to read the market, such as using social media, news, and even third parties[2], [3] Investors can see the latest news via social media or search engines so they can find out the latest news. As is known, the stock market itself is very sensitive to internal and external influences. Apart from that, investors can also collaborate with third parties to analyze the market [3].

One example of the third party referred to in this research is the Emtrade company. Emtrade is an EduFinTech application that is being transformed into a Robo-Advisory platform. Emtrade provides structured insights, stock references, market analysis, and a question-and-answer feature for its clients regarding questions about stocks. Emtrade itself has a Twitter account with the username @emtrade\_id, where they post information about the latest

stock market every day. Their posts have positive, neutral, and negative sentiments. Each category of sentiment certainly has its influence and benefits.

This research aims to understand topics with positive sentiment posted by the emtrade company via the @emtrade\_id account.

## II. LITERATURE REVIEW

### A. Sentiment Analysis

Sentiment analysis or opinion mining research is research that aims to analyze public sentiment or opinion regarding topics, events, individuals, issues, services, products, organizations, and their attributes [4], [5], [6] Nowadays, people can express their personal opinions freely on social media, one of which is Twitter. This makes Twitter a repository for data on people's opinions that can be utilized by various parties [7], [8]. The opinion data obtained can be categorized into three sentiments, namely positive, neutral, and negative sentiment, which can be used for various purposes.

### B. Previous Research

TABLE I. PREVIOUS RESEARCH

| No | Authors                                               | Year | Country    |
|----|-------------------------------------------------------|------|------------|
| 1  | Sharma V.; Manocha T.                                 | 2023 | India      |
| 2  | Manguri, K. H.; Ramadhan, R. N.; Amin, P. R. M.       | 2020 | Kurdistan  |
| 3  | El Rahman S.; AlOtaibi F.; AlShehri W.                | 2019 | Arab Saudi |
| 4  | Hossain A.; Karimuzzaman M.; Hossain M. M.; Rahman A. | 2021 | Swiss      |

Table 1 provides previous research related to sentiment analysis utilization to analyze the user sentiment of a business. Previous research by Sharma and Manoca [9], used customer sentiment analysis as a comparative analysis. This survey was conducted with four online fashion stores in India. This research can help retailers understand customer perceptions and find out how their company differs from competing companies [9].

There was also research by Manguri et al. [10] that analyzed public sentiment and emotions during the COVID-

19 pandemic. Research using sentiment analysis has also been used to compare KFC and McDonalds companies. The research found that McDonald's was more popular than KFC in terms of both positive and negative reviews. According to this research, the research methods used can be reused for various purposes, such as detecting rumours about the spread of disease and so on [11].

Apart from that, there was also previous research from Hossain et al [12] that used sentiment data analysis from headline news of The Daily Star Bangladesh as a comparison of the condition of a country in two years. In 2018, the words that appeared most frequently were Awami League (AL), Rohingya, Kill, BNP, Poll, Khaleda, Tigers, Case, and Bank. In 2019 the words that appeared most often were Tiger, PM, Road, Dhaka, Dengue, Kill, Rohingya, and Murder. These words describe the condition of Bangladesh at that time [12].

These studies show that sentiment analysis helps businesses understand market trends, customer satisfaction, and public opinion, guiding better decisions and improving engagement with customers.

### III. METHODS

Data on Emtrade sentiment was obtained through posts from the Twitter account @emtrade\_id from June 28, 2022, to June 28, 2023. The methodology of this study involved several key steps as shown in Figure 1. First, the data was collected and preprocessed by removing irrelevant elements such as URLs, emojis, and non-alphabetical characters. This was followed by tokenization, which split the text into individual words, and stemming, using the Sastrawi library, to reduce words to their root forms. Stopwords in Indonesian, along with custom stopwords, were removed to ensure the remaining content was relevant for analysis. Sentiment analysis was then conducted manually to classify the text into positive, neutral, or negative categories, with a focus on positive sentiment for further analysis. Latent Dirichlet Allocation (LDA) was used for topic modeling, with the model set to identify five topics based on domain knowledge. The model was trained using 15 passes to ensure stable topic extraction. The topics were visualized using pyLDAvis, providing an interactive tool for exploring topic relationships and significance. The dominant topic for each document was also extracted, allowing the text to be categorized by its main theme. Finally, coherence scores were used to evaluate the quality and interpretability of the topics.

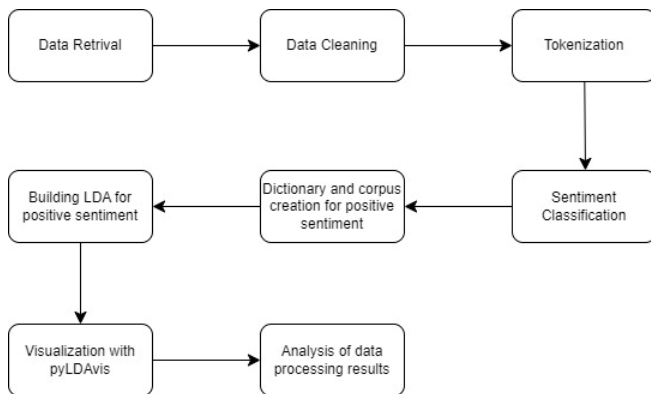


Fig. 1. Research Methods

### IV. RESULT AND DISCUSSION

This research utilizes positive post data from Emtrade's Twitter, an investment advisory company. The aim is to understand what positive advice can be offered to investors. The positive post data has undergone a data cleaning process and is then used to build an LDA algorithm to identify the positive topics frequently discussed by the company.

TABLE II. CLUSTER 1 (OVERALL FINANCIAL PERFORMANCE)

| Rank | Topic (Indonesian) | Topic (English) | Score  |
|------|--------------------|-----------------|--------|
| 1    | laba               | profit          | 5,30%  |
| 2    | bersih             | clean           | 37,00% |
| 3    | triliun            | trillion        | 2,90%  |
| 4    | dividen            | dividend        | 2,60%  |
| 5    | tbk                | public company  | 2,00%  |

This research collected Tweets from @emtrade\_id over one year, from June 28, 2022, to June 28, 2023. The researcher gathered 442 Tweets, consisting of 65 positive sentiment Tweets, 362 neutral sentiment Tweets, and 15 negative sentiment Tweets. The main goal of this research is to understand the primary positive sentiment topics most frequently discussed by the company. Therefore, the data processing focuses on Tweets with positive sentiment posted by the company.

TABLE III. CLUSTER 2 (MARKET POTENTIAL AND INVESTMENT OPPORTUNITIES)

| Rank | Topic (Indonesian) | Topic (English)         | Score |
|------|--------------------|-------------------------|-------|
| 1    | saham              | stock                   | 4,10% |
| 2    | ihsg               | Jakarta Composite Index | 2,40% |
| 3    | emas               | gold                    | 2,00% |
| 4    | potensi            | potential               | 1,60% |
| 5    | sentimen           | sentiment               | 1,60% |

From the topic clustering results using LDA, the company's positive sentiment topics are categorized into five clusters. The first cluster relates to financial performance, the second cluster relates to market potential and investment opportunities, the third cluster relates to dividends and retail investor engagement, the fourth topic relates to employment and economic conditions, and the last topic relates to market dynamics and commodity prices.

TABLE IV. CLUSTER 3 (DIVIDENS AND RETAIL INVESTOR ENGAGEMENT)

| Rank | Topic (Indonesian) | Topic (English) | Score |
|------|--------------------|-----------------|-------|
| 1    | dividen            | divident        | 2,20% |
| 2    | lengkap            | complete        | 2,20% |
| 3    | yuk                | let's           | 2,20% |
| 4    | adro               | Adaro Energy    | 2,20% |
| 5    | juta               | million         | 1,70% |

Table 2 presents the five main words that frequently appear or are discussed in the first cluster. This cluster focuses on financial performance and earnings. The keywords include "profit," "clean," "trillion," "dividend," and "public company." These terms indicate discussions about the company's financial health, profits, and dividends. The presence of large financial figures, such as trillions, highlights the scale of the company's success. Overall, the sentiment in this cluster is strongly positive because it emphasizes successful financial outcomes and profitability. Topic modeling visualization using pyLDAvis of Cluster 1 is shown in Figure 2.

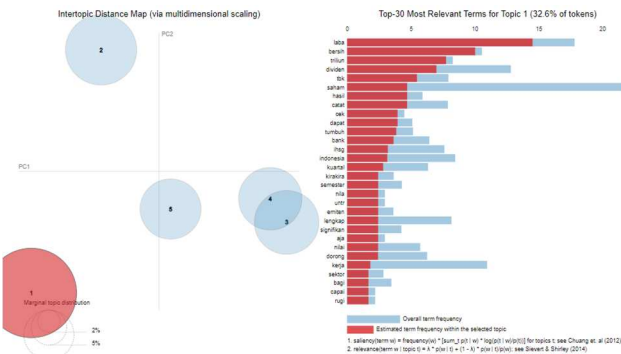


Fig. 2 Cluster 1 (Overall Financial Performance)

TABLE V. CLUSTER 4 (EMPLOYEMENT AND ECONOMIC CONDITIONS)

| Rank | Topic (Indonesian) | Topic (English) | Score |
|------|--------------------|-----------------|-------|
| 1    | kerja              | work            | 3,10% |
| 2    | indonesia          | indonesia       | 2,20% |
| 3    | cmry               | Cahaya Mas Raya | 2,10% |
| 4    | nilai              | value           | 1,70% |
| 5    | inflasi            | inflation       | 1,70% |

The second cluster centers around the stock market and investment potential. The keywords that frequently appear in this topic are illustrated in Table 3, and the keywords visualization is shown in Figure 3. The keywords here are "stock," "Jakarta Composite Index," "gold," "potential," and "sentiment." These terms suggest discussions about market performance and opportunities for investment. The focus on stocks and gold reflects optimism about market trends and potential gains. The sentiment is positive, driven by the potential for investment and favorable market conditions.

TABLE VI. CLUSTER 5 (MARKET DYNAMICS AND COMMODITY PRICES)

| Rank | Topic (Indonesian) | Topic (English) | Score |
|------|--------------------|-----------------|-------|
| 1    | saham              | stock           | 5,80% |
| 2    | harga              | price           | 2,50% |
| 3    | minyak             | oil             | 1,60% |
| 4    | dagang             | trade           | 1,60% |
| 5    | bareng             | together        | 1,50% |

The third cluster highlights dividends and investment opportunities, focusing on specific companies like Adaro

Energy. Table 4 reflects the topic that most likely appears in the third cluster. Key words include "dividend," "complete," "let's," "Adaro," and "million." The casual language, such as "let's," indicates an approachable tone, likely aimed at retail investors. The emphasis on dividends and investment opportunities drives a positive sentiment, encouraging engagement and interest in the stock market. The keywords cluster visualization is shown in Figure 4.

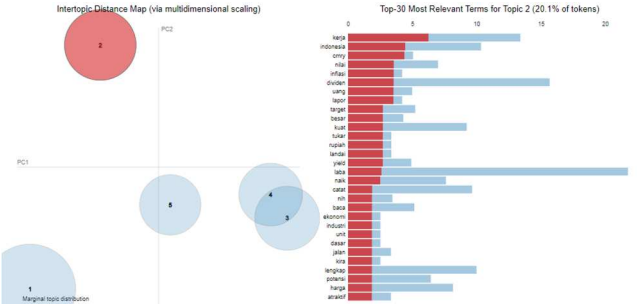


Fig. 3 Cluster 2 (Market Potential and Investment Opportunities)

Cluster 4, as shown in Table 5, addresses employment and economic conditions in Indonesia, with mentions of specific companies. The keywords are "work," "Indonesia," "Cahaya Mas Raya," "value," and "inflation." This cluster discusses the economic environment, including challenges like inflation. While there is positive sentiment around work and specific companies, concerns about inflation introduce a mixed sentiment. Overall, the sentiment is generally positive but acknowledges economic challenges. The keywords visualization of cluster 4 is shown in Figure 5.

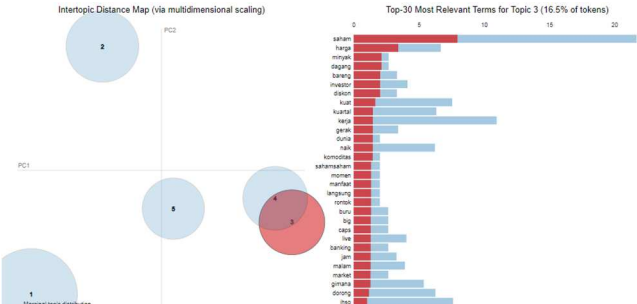


Fig. 4 Cluster 3 (Dividends And Retail Investor Engagement)

The last cluster, as shown in Table 6, focuses on stocks, prices, and commodities like oil. Keywords include "stock," "price," "oil," "trade," and "together." Discussions in this cluster revolve around market dynamics and trading opportunities, particularly in commodities. The positive sentiment is driven by the potential for trading and investment in stocks and commodities. However, there might be underlying concerns about price fluctuations. The overall keywords of cluster 5 are shown in Figure 6.

The sentiment analysis of Emtrade shows several key points that affect the business, investors, and stakeholders. First, the company's strong financial performance, with profits and dividends, suggests a healthy business that boosts internal confidence and attracts investors. Second, the positive outlook on stock market potential and investment

opportunities highlights Emtrade's appeal, increasing its market value and reputation. This brings in more business opportunities. Third, focusing on dividends and approachable investments makes Emtrade attractive to retail investors and signals financial health. Fourth, discussions about employment and economic conditions improve employee morale and attract talent, while giving investors a clear view of economic challenges, aiding their decisions. Lastly, positive sentiment about market dynamics and commodities supports strategic initiatives in trading and appeals to investors looking for diverse options. This also opens new business opportunities. Overall, Emtrade's strategic financial investment potential will attract investors, and strengthen relationships with stakeholders.

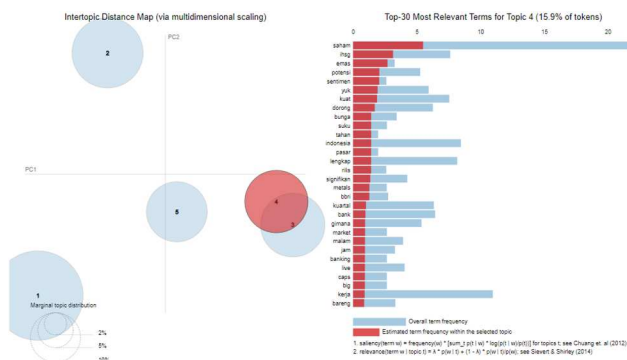


Fig 5 Cluster 4 (Employment And Economic Conditions)

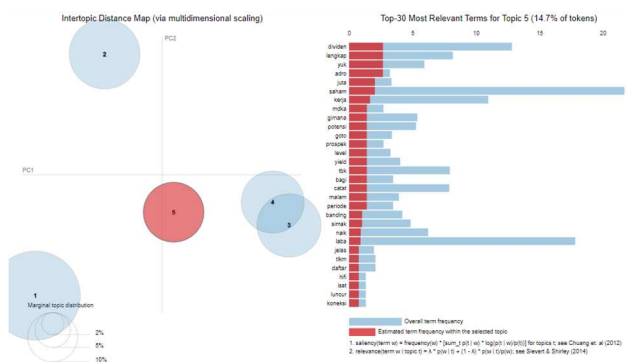


Fig 6 Cluster 5 (Market Dynamics And Commodity Prices)

## V. CONCLUSIONS

This study analyzed the positive sentiment topics in Emtrade's Twitter posts over a year. This research provides valuable insights into the key areas the company focuses on to engage with its audience. The findings reveal that Emtrade's positive sentiment tweets revolve around five main clusters: financial performance, market potential and investment opportunities, dividends and retail investor engagement, employment and economic conditions, and market dynamics and commodity prices.

Emtrade's Twitter post often talks about strong financial performance and profits, showing its good financial health to attract investors. By focusing on market potential and investment opportunities, Emtrade shows its plans to attract investors with promising options. Discussions about dividends and easy investment opportunities are aimed at retail investors, making Emtrade appealing to those new to the stock market.

For future research, several areas could be explored to build on this study. Other researchers could compare Emtrade with similar companies to show how different strategies affect investor sentiment. Other researchers could compare different investor group's responses and posts. This action will provide a better understanding of how other companies interact with their stakeholder. These ideas can enhance our understanding of social media's role in financial markets and help companies refine their communication strategies.

## REFERENCES

- [1] W. Chen, M. Jiang, W. G. Zhang, and Z. Chen, "A novel graph convolutional feature based convolutional neural network for stock trend prediction," *Inf Sci (N Y)*, vol. 556, pp. 67–94, 2021, doi: 10.1016/j.ins.2020.12.068.
- [2] W. Khan, M. A. Ghazanfar, M. A. Azam, A. Karami, K. H. Alyoubi, and A. S. Alfakheh, "Stock market prediction using machine learning classifiers and social media, news," *J Ambient Intell Humaniz Comput*, vol. 13, no. 7, pp. 1–24, 2022, doi: 10.1007/s12652-020-01839-w.
- [3] R. Tao, C. W. Su, Y. Xiao, K. Dai, and F. Khalid, "Robo advisors, algorithmic trading and investment management: Wonders of fourth industrial revolution in financial markets," *Technol Forecast Soc Change*, vol. 163, p. 120421, 2021, doi: 10.1016/j.techfore.2020.120421.
- [4] L. Yue, W. Chen, X. Li, W. Zuo, and M. Yin, "A survey of sentiment analysis in social media," *Knowl Inf Syst*, vol. 60, no. 2, pp. 617–663, 2019, doi: 10.1007/s10115-018-1236-4.
- [5] M. S. Hajmohammadi, R. Ibrahim, and Z. Ali Othman, "Opinion Mining and Sentiment Analysis: A Survey," *INTERNATIONAL JOURNAL OF COMPUTERS & TECHNOLOGY*, vol. 2, no. 3, 2012, doi: 10.24297/ijct.v2i3c.2717.
- [6] K. Ravi and V. Ravi, "A survey on opinion mining and sentiment analysis: Tasks, approaches and applications," *Knowl Based Syst*, vol. 89, pp. 14–46, 2015, doi: 10.1016/j.knosys.2015.06.015.
- [7] A. Java, X. Song, T. Finin, and B. Tseng, "Why We twitter: An analysis of a microblogging community," in *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 2009, pp. 118–138. doi: 10.1007/978-3-642-00528-2\_7.
- [8] X. Wang, F. Wei, X. Liu, M. Zhou, and M. Zhang, "Topic sentiment analysis in twitter: A graph-based hashtag sentiment classification approach," in *International Conference on Information and Knowledge Management, Proceedings*, 2011, pp. 1031–1040. doi: 10.1145/2063576.2063726.
- [9] V. Sharma and T. Manocha, "Comparative Analysis of Online Fashion Retailers Using Customer Sentiment Analysis on Twitter," in *Proceedings of the International Conference on Innovative Computing & Communication (ICICC) 2022*, SSRN, Mar. 2023. doi: 10.2139/ssrn.4361107.

- [10] K. H. Manguri, R. N. Ramadhan, and P. R. Mohammed Amin, "Twitter Sentiment Analysis on Worldwide COVID-19 Outbreaks," *Kurdistan Journal of Applied Research*, no. Special Issue on Coronavirus (COVID-19), pp. 54–65, 2020, doi: 10.24017/covid.8.
- [11] S. A. El Rahman, F. A. AlOtaibi, and W. A. AlShehri, "Sentiment analysis of twitter data," in *2019 International Conference on Computer and Information Sciences (ICCIS)*, IEEE, 2019, pp. 1–4.
- [12] A. Hossain, M. Karimuzzaman, M. M. Hossain, and A. Rahman, "Text mining and sentiment analysis of newspaper headlines," *Information (Switzerland)*, vol. 12, no. 10, 2021, doi: 10.3390/info12100414.