

Big Data Approach in Policy Making for Government Using Sentiment Analysis and Monte-Carlo

**Nuim Khoirunnisa¹, Sekar Salma Putri¹, Muchammad Nur Kholis¹, Farah Alysa Putri¹ ¹Undergraduate*

Program of Statistics, Universitas Islam Indonesia, Yogyakarta, Indonesia, Universitas Islam Indonesia,

Yogyakarta, Indonesia

20611047@students.uii.ac.id

ABSTRACT

Background: Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-Cov-2) is a novel virus that causes a global pandemic Coronavirus Disease 2019 (Covid-19). The spread of the COVID-19 pandemic was very fast through direct contact, so the government issued various policies to suppress the spread of Covid-19. Extension policies set by the government caused various responses, especially the dine-in regulation is a maximum of 20 minutes. Therefore, researchers predict the length of time a person eats and analyze the sentiment of Generation Z in order to apply data science in decision making.

Methods: This study uses primary and secondary data. Primary data was obtained by distributing questionnaires through Google Form and analyzed using the Monte-Carlo method, while secondary data was obtained by scraping Twitter data and analyzed using sentiment analysis.

Results: Based on the simulation carried out 10 times on the length of time eating at home and eating dine-in alone using the Monte-Carlo method, the prediction results obtained the average length of time eating for 17 minutes and 25 minutes with an accuracy rate of 96,393 respectively. % and 94,799%. Meanwhile, data testing using MAPE shows a prediction error rate of 3.472% for eating at home and 3.052% for dine-in alone, so it can be stated that the prediction success is 96.268% and 96.948%, respectively. These results indicate that the simulation results that have been carried out are accurate.

Conclusions: Sentiment analysis results were also obtained, namely negative responses of 34.13%, positive of 30.2%, and neutral of 33.99%. Based on the negative views obtained from sentiment analysis on the PPKM dine-in policy, and the simulation results of the Monte Carlo method, there is a need for a review for the government in making policies.

Keywords: *Monte-Carlo, Sentiment Analysis, PPKM, COVID-19.*