

ABSTRACT

Commodity prices play a crucial role in economic stability and societal well-being. Research from the Central Statistics Agency (BPS) shows that in March 2018, the Food Poverty Line (GKM) contributed 73.48% to the poverty line, while the remaining portion came from non-food commodities (housing, clothing, education, and health). However, a challenge in managing food prices is the limited ability to identify specific periods when food prices experience significant increases. Therefore, access to accurate and real-time information regarding future food price movements is essential for effective policy-making, such as through appropriate market interventions or other policies.

To address this issue, a proposed solution through Capstone Design, a collaboration between Telkom University, the National Food Agency, and the National Research and Innovation Agency, is a web-based application that displays historical data and food price predictions using the Temporal Fusion Transformer (TFT) algorithm. This model is designed by considering various factors that influence food price fluctuations, including important dates, food stock levels, and other relevant variables. The goal is to provide visualizations of historical food price movements, future price predictions, and the impact of various variables on these predictions.

Testing has shown that the developed algorithm has an accuracy of up to 99% for 30-day predictions. The website integrated with this algorithm also offers a good user experience, evidenced by an average SUS score of 87,08. Overall, the performance of this website is optimal and efficient, with loading times under 5 seconds.

Keywords: Food Prices, Temporal Fusion Transformer, Price Predictions, Economic Stability, Web-Based Application