KINERJA METODE *FUZZY TIME SERIES* CHEN PADA DATA YANG MENGALAMI ANOMALI
(Studi Kasus : Prediksi Jumlah Wisatawan Mancanegara di Kabupaten Banyuwangi Sebelum dan Saat Pandemi)

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ABSTRAK

Penelitian ini bertujuan mengukur kinerja metode *Fuzzy Time Series* Chen dalam memprediksi jumlah kunjungan wisatawan mancanegara ke Kabupaten Banyuwangi sebelum dan selama pandemi COVID-19. Kabupaten Banyuwangi, dengan berbagai destinasi wisata unggulan, mengalami penurunan drastis jumlah wisatawan akibat pandemi. Penelitian ini menggunakan data historis dari Badan Pusat Statistik (BPS) Kabupaten Banyuwangi, dengan fokus pada periode 2017-2022 yang mencakup masa sebelum pandemi, saat pandemi, dan masa transisi. Metode *Fuzzy Time Series* Chen dipilih karena kemampuannya dalam memetakan data real time ke dalam himpunan fuzzy yang lebih fleksibel dan adaptif. Hasil penelitian menunjukkan bahwa metode *Fuzzy Time Series* Chen memiliki tingkat akurasi yang lebih baik pada kondisi data yang stabil dengan nilai *Mean Absolute Percentage Error* (MAPE) sebesar 21,452% sebelum pandemi, dibandingkan dengan 317,601% saat pandemi, dan 241,401% pada masa transisi. Penelitian ini menyimpulkan bahwa metode Fuzzy Time Series Chen lebih cocok digunakan pada data dengan pola yang lebih stabil dan kurang efektif dalam kondisi data yang fluktuatif atau mengalami anomali.

Kata kunci*: Fuzzy Time Series* Chen, Prediksi jumlah wisatawan, Kabupaten Banyuwangi, Anomali data, *Mean Absolute Percentage Error (MAPE)*

Performance of Chen's Fuzzy Time Series Method on Data with Anomalies (Case Study: Prediction of the Number of Foreign Tourists in Banyuwangi Regency Before and During the Pandemic)

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ABSTRACT

This research aims to measure the performance of Chen's Fuzzy Time Series method in predicting the number of foreign tourists to Banyuwangi Regency before and during the COVID-19 pandemic. Banyuwangi Regency, with its various leading tourist destinations, has experienced a drastic decline in the number of tourists due to the pandemic. This research uses historical data from the Banyuwangi Regency Central Statistics Agency (BPS), with a focus on the 2017-2022 period which includes the period before the pandemic, during the pandemic and the transition period. Chen's Fuzzy Time Series method was chosen because of its ability to map real time data into a more flexible and adaptive fuzzy set. The research results show that Chen's Fuzzy Time Series method has a better level of accuracy in stable data conditions with a Mean Absolute Percentage Error (MAPE) value of 21.452% before the pandemic, compared to 317.601% during the pandemic, and 241.401% during the pandemic. transition period. This research concludes that Chen's Fuzzy Time Series method is more suitable for use on data with more stable patterns and is less effective in fluctuating or anomalous data conditions.

Keywords*: Fuzzy Time Series Chen, Prediction of Number of Tourists, Banyuwangi Regency, Data Anomalies, Mean Absolute Percentage Error (MAPE)*