

ABSTRACT

DEVELOPMENT OF A SMART LIVING FORECASTING MODEL USING THE TIME SERIES METHOD (Case Study: Smart City, Banyumas Regency)

Oleh
Sara Vikana br Bangun 21103092

Banyumas Regency has adopted the Smart City concept, implemented through six dimensions, including the Smart Living pillar. The Smart Living development strategy encompasses the harmonization of spatial planning, the improvement of health infrastructure, and the provision of information technology-supported transportation facilities. However, a comprehensive quantitative evaluation and prediction of the success of Smart Living implementation has not been conducted to fully understand its impact. This research aims to develop a forecasting model that can identify the factors influencing the effectiveness of Smart Living in Banyumas Regency. Using data from 2021 to 2023, this study evaluates two forecasting methods, namely Simple Moving Average (SMA) and Simple Exponential Smoothing (SES). The analysis reveals that the SMA method tends to produce higher fluctuations and less stable predictions, particularly in investment development data for August and November. A surge in MAPE values was also detected in fire incident data for February, resulting in a percentage of 53.82%, and in maternal mortality data for November, resulting in a percentage of 133.33%. Based on these findings, the development of a responsive prediction system is recommended to provide early warnings or recommendations to the public in facing future risks. Additionally, the forecasting system needs to be evaluated and adjusted periodically to remain relevant to the dynamic changes in the Banyumas Regency community.

Keywords: *Smart Living, Forecasting, Simple Moving Average, Simple Exponential Smoothing, Banyumas Regency*