FORECASTING MODELLING OF FINAL ENERGY CONSUMPTION USING FUZZY REGRESSION METHOD FOR SMALL DATASETS (CASE STUDY: INDONESIA)

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ABSTRACT

Energy and its consumption play important roles in enhancing a country's economic growth. Increasing trend in world energy consumption proves that energy is an essential commodity for every nation in the future. In this research, final energy consumption by sector in Indonesia is modelled in the case of a small dataset using fuzzy regression method. Forecasting model is determined with two approaches, namely by using a constant and without constants regression. Final energy consumption as dependent variable will be predicted against the independent variables which are population and Gross Domestic Product (GDP). Result of energy consumption forecasting can be used as a basis of production management of primary energy supply in the future. Based on the comparative value of MAPE, the final energy consumption shows that the fuzzy regression method without constant approach is better than the constant because it has the smallest MAPE that is 2,75%.

Key words : small dataset, energy consumption, fuzzy regression