A Comparison of Decision Making Models and Electricity Energy Demand Forecasting for Turkey

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Energy is vital for industrialization and development countries like Turkey. Energy, particularly electricity, is essential for improving quality of live and developing as social and economic like European Countries. Projections for Turkey demonstrate positive results from the use of energy, especially for electricity, and identify key areas for improvement by 2023 (ESMAP Report, 2011).

Turkey is rapidly growing with a 73 million young and confident people. So, energy requirements have been rising with increasing population for twenty years in Turkey. The development a country and people living of standards is directly related to the energy utilization rate. Authors and researchers claimed that, the Turkish economy is currently the fastest growing economies among the European Union. In addition, there are a lot of and different studies that were published recently on forecasting of Turkey's electricity demand. But the aim of this study is to compare forecasting models each other with error estimations and estimate future demand. This study is a proposition of a new approach by comparing grey prediction and multiple regression models with Model of Analysis of the Energy Demand (MAED). Turkish Ministry of Energy and Natural Resources carry out MAED. In this study, electricity energy consumption in Turkey is forecasting with grey prediction and multiple regression models from 1970 to 2010. In this model, we used total export, total import, population and GDP data unlike than Akay and Atak (2007). This study also explores new approach by using more data and suggestions regarding to electricity consumption. As a result, proposed approaches estimates have more accurate results than MAED model in the comparison of electricity consumption.

Keywords: Turkey's Electricity Consumption Forecasting; Grey Prediction; Multiple Regressions.