

Universiti Teknologi MARA

**A Comparison Study on Fuzzy Time Series
and Holt-Winter Model in Forecasting
Tourist Arrival in Langkawi, Kedah**

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**Report submitted in fulfillment of the requirements for
Bachelor of Science (Hons.) Management Mathematics
Faculty of Computer and Mathematical Science**

July 2020

STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the products of my own work and that any idea or quotation from the of other people, published or otherwise are fully acknowledge in accordance with the standard referring practices of the discipline.



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ABSTRACT

Tourism industry in Malaysia has been growing significantly over the years. Tourism has been one of the major donors to Malaysia's economy. Based on the report from the Department of Statistics, a total of domestic visitors in Malaysia were recorded at about 221.3 million in 2018 with the increase of 7.7% alongside a higher record in visitor arrivals and tourism expenditure. This study aims to make a comparison between two methods, which are Fuzzy Time Series and Holt-Winter in forecasting the number of tourist arrival in Langkawi based on the monthly tourist arrival data from January 2015 to December 2019. Both models were generated using Microsoft Excel in obtaining the forecast value. The Mean Square Error (MSE) has been calculated in this study to get the best model by looking at the lowest value. The result found that Holt-Winter has the lowest value that is 713524285 compared to Fuzzy Time Series with value of 2625517469. Thus, Holt-Winter model is the best method and has been used to forecast the tourist arrival for the next 2 years. The forecast value for the years 2020 and 2021 are displayed by month.

Keywords: Tourism Malaysia, Forecasting, Fuzzy Time Series, Holt-Winter

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