Time Series Modeling on Monthly Tourist Arrivals to Sri Lanka
A Comparative study of Alternative Approaches

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ABSTRACT

Tourism plays a vital role in many economies in the world and no exception for Sri Lanka. Exploring of potential tourist arrivals is significant for both future planning in tourist industry and related services. Therefore, regular monitoring of tourist arrivals is vital. Kurukulasooriya & Lelwala (2014), Konarasinghe, (2016) and Gnanapragasam & Cooray (2016) are different approaches in this context in Sri Lanka. Changing pattern of tourism demand appeals forecasting models in different time horizons. Thus, this study address this knowledge gap as the research problem with comparing of two different time series techniques with latest data. The main objective of this research is to reveal the most suitable forecasts for future tourist arrivals in a comparative edge. Current study has been entirely based on monthly foreign tourist arrivals. Annual reports of Sri Lanka Tourist Authority provides relevant data and information. Time horizon for the current research covered from January 2009 to August 2018. Linear trend pattern is most suitable for seasonally adjusted data and thus month to month increase of tourist arrivals are approximately 1525 heads per month. This increasing rate can be used by the decision makers in the tourism sector for their future strategic planning. The multiplicative classical decomposition and the Holt Winters' multiplicative exponential smoothing model with seasonality were employed for forecasting. Performance of the various models were evaluated using ex-post forecast accuracy which was evaluated by means of MAPE, MPE, and RMSE. Comparatively multiplicative classical decomposition model outperform multiplicative Holt-Winter's method and this is contrary to the existing literature in Sri Lankan tourism. This may be due to the recent changing pattern of tourist arrivals. Positive impact of seasonality is preferred from December to March and the months of August and September. The maximum seasonal increment is 30 percent for these months which is reported in December. There is a negative seasonal impact for remaining months in the year. Six months ahead forecasts were generated through Multiplicative Classical Decomposition. The seasonal effect of tourism must be addressed in policy agenda under the tourism development planning and forecasting models are required continuous updates.

Key words: Time Series Forecasting, Tourist Arrivals, Classical Decomposition, Holt-Winter's Method

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