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Developing a Tourist Arrivals Forecasting System for Sri Lanka

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This study attempts to identify suitable forecasting models for accurate forecasting of tourist arrivals in Sri Lanka. Monthly arrival data, obtained from Sri Lanka Tourism Development Authority, for January 2010 to October 2014 period have been used to build models and evaluate the degree of accuracy of their forecasts in respect to the total arrivals as well as arrivals from six origin countries. The reason for selection and confinement to the said duration was the unique growth trend observed in tourist arrivals after conclusion of civil war in 2009. Altogether four forecasting models were evaluated using four accuracy measures namely MPE, MAPE, RMSE and Theil's U. From the analysis it appears that forecasts from Holt Winters multiplicative seasonal model for Total tourist arrivals and for three of the selected origin countries (India, United Kingdom and Maldives) outperform those from other models in terms of most of the accuracy measures. For France, SARIMA model generated the most accurate forecasts while for China and Germany, Holt Winters additive seasonal model showed more accurate forecasts. Vector Autoregression model was the other model that was considered. Although the selected statistical forecasting models are good examples of modern methodology, neural network approach can be more successful with a much larger data set. As the final outcome a web-based system is being developed to make these forecasts publicly available. This system will also work as a platform for sharing experts' opinions about future flow of tourist arrivals to further support the decision making process of users.

Key words: tourist arrivals, forecasting support system

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