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FORECASTING INTERNATIONAL TOURISM INCOME OF SRI LANKA: TREND ANALYSIS

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Growth of the tourism industry in Sri Lanka shows the historical development mainly in two ways. That is the growth of tourist arrivals and income. Tourism impacts on the economy of Sri Lanka, which rely heavily on foreign exchange earnings. This has been a general interest of the government. Therefore, the government needs reliable forecasting to cope with uncertain situations and developing sound strategies to maintain the growth of tourism industry. This study was focused on identifying an appropriate trend model for forecasting international tourism income of Sri Lanka.

Monthly income data from 2009 to 2013 were obtained from statistical reports of 2012 and 2013 of Sri Lanka Tourism Development Authority (SLTDA). The study concerns the period of post-war, which is after the year 2009. Model fitting was done by utilizing data from January 2009 to April 2012 and data from May 2012 to May 2013 were utilized for model verification. Four trend models were tested with log transformation including one linear and three nonlinear models. Residual plots and Anderson-Darling tests for residuals were used as the model validation criterion. Forecasting ability of the models was assessed by considering Mean Absolute Percentage Error (MAPE), Mean Square Error (MSE) and Mean Absolute Deviation (MAD).

Box and whisker plot showed no outliers in the data set. Results revealed that Quadratic Trend Model has least MAPE's in model fitting and verification: 0.90% and 1.12 %, respectively. MAD and MSE also confirmed the smallest deviation compared with other trend models. Residual plots and Anderson-Darling test confirmed the normality of residuals. Also, residuals Vs fits confirmed the independence of residuals.

It was concluded that the Quadratic Trend Model with log transformation is suitable for forecasting international tourism income in Sri Lanka. Monthly income for the period from May 2012 to November 2013 were forecasted by the model and found them close to the actual income.

It is recommended to try other time series techniques, namely, decomposition techniques, Auto Regressive Integrated Moving Average (ARIMA) models etc., to capture the seasonal behavior of the series.