MODELLING AND FORECASTING THE SEASONAL VARIATIONS OF APPAREL EXPORTS IN SRI LANKA WITH A SPECIAL REFERENCE TO COVID-19 PANDEMIC

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The apparel industry in Sri Lanka contributes predominantly to the country's economy. Therefore, it is crucial for policymakers and other stakeholders to know about the apparel and textile export behavior to make informed decisions. Thus, the main aim of this study was to model and forecast Sri Lankan apparel and textile exports using the data for the period of January 2007 to December 2022 and provide accurate forecasts. ARIMA model was employed for the univariate time series analysis with modelling and forecasting. Among the candidate models, ARIMA $(1,1,1)(2,0,0)_{12}$ was the best-fitted model based on the information criteria: AIC, AICc and BIC. Then, the model adequacy checking of the selected model was done using residual diagnostic graphs, the portmanteau test, the Ljung-Box test, and the characteristic roots of the model, which found that the model was adequate for forecasting. Subsequently, the forecasts were generated for two years ahead, and the forecast accuracy was checked with metrics such as MAPE, RMSE and MAE. The best-fitted model was found to have an average prediction error of 11.77%, while RMSE and MAE were 78.57 and 59.92, respectively. Further, an analysis of the major fluctuations of the time series during the period of study was done, and it was found that despite the inevitable adverse impact of the COVID-19 pandemic in its initial phase, the apparel sector swiftly adapted and showed a significant improvement in export earnings during the post-COVID period.

Keywords: *ARIMA, export earnings, textile exports*