Forecasting Unemployment Rate in Malaysia During Covid-19 Using Box-Jenkins Models

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ABSTRACT

Unemployment is one of the most common issues confronting many countries around the world, including Malaysia. The unemployment rate in Malaysia has been one of the issues, particularly since the COVID-19 outbreak. As a result, to prevent the situation from worsening, forecasting is needed to foresee the unexpected situation that might happen in the future. Therefore, Box-Jenkins models were used and the best fit model is determined to forecast the unemployment rate in Malaysia during the pandemic COVID-19. For this purpose, the unemployment rate data set used from January 2020 to May 2022, was obtained from the Department of Statistics Malaysia Official Portal website. There were four models developed such as ARIMA (1,1,1), ARIMA (2,1,1), ARIMA (1,1,3) and ARIMA (2,1,3). The model's performance is determined using Akaike's Information Criteria (AIC), Bayesian Information Criterion (BIC), Hannan-Quinn, Box-Pierce Q Statistics, and Means Squared Error (MSE). The finding indicates that ARIMA (1,1,1) was selected as the best ARIMA model for forecasting since it has a better performance compared with other models. As a result, the findings of this study may be useful in predicting Malaysia's unemployment rate in the future and can help the government to find initiatives to cope with unemployment in Malaysia's future.

Keywords: Unemployment rate, Forecasting, ARIMA models