

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**COMPARATIVE STUDY OF THE BOX-JENKINS
AND HOLT-WINTERS MODEL IN
FORECASTING TOURIST ARRIVALS**

P33S18

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**Report submitted in partial fulfilment of the requirement
for the degree of
Bachelor of Science (Hons.) Management Mathematics
Faculty of Computer and Mathematical Sciences**

DECEMBER 2018

ACKNOWLEDGEMENTS

Alhamdulillah praises and thanks to Allah because of His Almighty and His Utmost blessings, we were able to finish this final year project within the time duration given.

We are highly indebted to our supervisor, Madam Norliana Binti Mohd Lip for giving us the opportunity to embark on this project. Thank you for all the constructive comments and long discussions that enable us to complete this work. She has not only given feedback but also supported us and motivated us for work.

We would also like to frame our thanks to our lecturer, Sir Mohd Azdi Maasar who always keep support and encourage us in completing this final year project. Besides, we would like to express the deepest appreciation to all our peers who have helped us with this project.

Last but definitely not the least we would like to take this opportunity to express our gratitude and indebtedness to our beloved parents and family for their unconditional love and support throughout this whole process. Their blessings help and guidance was deep inspiration to us.

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ABSTRACT

Tourism can be described as the activities of persons known as visitors. A visitor is referring to someone who makes a visit to a main destination outside their usual environment for less than a year for any main purpose which including holidays, leisure and recreation, business, health, education or other purposes. Malaysia has many public holidays that causes number of tourist arrivals to Malaysia constantly changing every year. In addition, one of the sources of country's income contributed from the tourism sector. Thus, it is important to forecast the number of tourist arrivals. Hence, the forecasting beneficial for tourism agencies to improve their marketing techniques to attract more tourists to come to Malaysia. Furthermore, this paper is attempt to compare the accuracy of the techniques between Box Jenkins and Holt-Winters model. The sample data for this study were obtained from Tourism Malaysia Department, which consists of number of tourist arrivals against three countries which are Singapore, Korea and United Kingdom (UK) from year 2013 until year 2017. Microsoft Excel was used to examine the data for Holt-Winters meanwhile E-Views 7 was used to find the best Box Jenkins model. By comparing the value of Mean Square Error (MSE), Root Mean Square Error (RMSE), and Mean Absolute Percentage Error (MAPE), the findings of this study suggest that besides Box Jenkins, Holt-Winters model also suitable to be used in forecasting tourist arrivals. Hence, the Holt-Winters model are the appropriate model to forecast the tourist arrivals from United Kingdom (UK) and Korea. While, the SARIMA (1,1,1)(1,1,1)₁₂ is the appropriate model for forecasting tourist arrivals from Singapore. Therefore, Holt-Winters and Box Jenkins model are suitable used to forecast and determine the future trend of tourist arrivals. Last but not least, it is crucial to make an improvement in the accuracy of forecasting techniques and any further research regarding the tourist arrivals forecasting would be encouraged.