

PEMODELAN DAN PERAMALAN PERMINTAAN PELANCONG ASING KE MALAYSIA BERDASARKAN MODEL ADLM

(Modelling and Forecasting of Foreign Tourist Demand to Malaysia Based on ADLM Model)

SITI SYAHIRA ABDUL HALIM & NORA MUDA

ABSTRAK

Corak permintaan pelancong asing ke Malaysia dianalisis dan diramal dengan menggunakan kaedah ekonometrik. Kaedah ini digunakan bagi menentukan faktor-faktor ekonomi yang mempunyai kesan terhadap permintaan pelancong asing ke Malaysia. Walaupun terdapat banyak kajian lepas telah dijalankan bagi mendapatkan model siri masa dan model ramalan kedatangan pelancong asing ke Malaysia, tetapi model-model tersebut tidak mengambil kira faktor makroekonomi pelancong dalam membuat peramalan. Dalam kajian ini, sembilan buah negara dipilih, iaitu negara yang banyak menyumbang kepada ketibaan pelancong ke Malaysia, iaitu Australia, Brunei, China, Indonesia, India, Jepun, Filipina, Korea Selatan dan United Kingdom. Beberapa pemboleh ubah makroekonomi dipilih, iaitu bilangan ketibaan pelancong di Malaysia, pendapatan pelancong, harga relatif, harga pengganti dan pemboleh ubah patung untuk meneliti permintaan pelancong asing ke Malaysia dalam jangka pendek dan panjang. Terdapat krisis ekonomi pada tahun 1997 dan serangan SARS pada tahun 2003 memberi kesan ketara yang menjejaskan permintaan pelancongan asing di Malaysia dalam jangka masa pendek. Manakala pemboleh ubah pendapatan pelancong pula memberi kesan kepada permintaan pelancongan di Malaysia dalam jangka panjang. Model Taburan Lat Autoregresi (ADLM) digunakan dalam kajian ini dan dimodelkan menggunakan data dari tahun 1990 hingga 2014. Seterusnya peramalan permintaan pelancongan dibandingkan dengan data sebenar pada tahun 2015 bagi pengesahan kecekapan model.

Kata kunci: pelancongan; model ekonometrik; Model Taburan Lat Autoregresi (ADLM); MAPE

ABSTRACT

The pattern of foreign tourist demand to Malaysia is analyzed and predicted using econometric method. This method is used to determine the economic factors that affect the demand of foreign tourists to Malaysia. Although many previous studies have been conducted to obtain time series models and predictor models of foreign tourist arrivals to Malaysia, but these models do not take into account the macroeconomic factors of tourists in making forecasts. In this study, nine countries have been selected, namely the countries that contribute to the arrival of tourists to Malaysia, namely Australia, Brunei, China, Indonesia, India, Japan, the Philippines, South Korea, and the United Kingdom. Several macroeconomic variables were selected; the number of tourist arrivals in Malaysia, tourist income, relative price, substitute price and dummy variables; to examine the demand of foreign tourists to Malaysia in the short and long terms. There was an economic crisis in 1997 and SARS attacks in 2003 which significantly affected the demand for foreign tourism in Malaysia in the short run. Mean while the tourist income variable affects the tourism demand in Malaysia in the long run. The Autoregressive Distribution Lag Model (ADLM) is used in this study and is modeled using yearly data from 1990 to 2014. The forecast are then compared to the actual arrival data in 2015 for validation of model efficiency.

Keywords: tourism; econometric model; Autoregressive Distribution Lag Model (ADLM); MAPE

Rujukan

- Aswad K., Norsiah K. & Sabri N. 2013. International tourism demand in Malaysia by tourists from OECD countries: a panel data econometric analysis. *Procedia Economics and Finance* 7: 28-34.
- Banerjee A., Dolado J.J., Galbraith J.W. & Hendry F.F. 1993. *Co-integration, Error Correction, and the Econometric Analysis of Nonstationary Data*. New York: Oxford University Press.
- Chu F.L. 2004. Forecasting tourism demand: A cubic polynomial approach. *Tourism Management* 25: 209-218.
- Crouch G.I. 1994. The study of international tourism demand: A survey of practice. *Journal of Travel Research* 32: 41-54.
- Hendry D.F. 1995. *Dynamic Econometrics*. Oxford: Oxford University Press.
- International Monetary Fund. 2019. *International Financial Statistic Yearbook, 2019*. Washington: International Monetary Fund.
- Jarque C. & Bera A. 1980. Efficient tests for normality, homoscedasticity and serial independence of regression residuals. *Econometric Letters* 6: 255-259.
- Khairudin S., Ahmad N., Razali A., Japeri A.Z.U.-S.M. & Azmi A.B. 2018. Forecasting international tourist arrivals in Penang using time series model. *International Journal of Academic Research in Business and Social Sciences* 8(16): 38-59.
- Kim S. & Song H. 1998. Analysis of tourism demand in South Korea: a cointegration and error correction approach. *Tourism Economics* 3(1): 25-41.
- Kulendran N. & Witt S.F. 2001. Cointegration versus least squares regression. *Annals of Tourism Research* 28: 291-311.
- Kulendran N. & Witt S. F. 2003. Forecasting the demand for international business tourism. *Journal of Travel Research* 41(3): 265-271.
- Lewis C. D. 1982. *Industrial and Business Forecasting Methods*. London: Butterworths.
- Lim C. 1997. Review of international tourism demand models. *Annals of Tourism Research* 24: 835-849.
- Loganathan N. & Yahaya I. 2010. Forecasting international tourism demand in Malaysia using Box Jenkins Sarima application. *South Asian Journal of Tourism and Heritage* 3(2): 50-60.
- Mansor K.A. & Ishak W.I. 2015. Forecasting tourist arrivals to Langkawi Island Malaysia. *Cross-Cultural Management Journal* 1(7): 69-76.
- Mathieson A. & Wall, G. 1982. *Tourism: Economic, Physical and Social Impacts*. Harlow, UK: Longman.
- Mohd Hafiz Mohd Hanafiah & Mohd Fauzi Mohd Harun. 2010. Tourism demand in Malaysia: A cross-sectional pool time-series analysis. *International Journal of Trade, Economics and Finance* 1(1): 80-83.
- Pesaran M. H., Shin Y. & Smith R. J. 2001. Bound testing approaches to the analysis of level relationships. *Journal of Applied Econometric* 16(3): 289-326.
- Ramsey J. B. 1969. Test for specification error in classical linear least squares regression analysis. *Journal of the Royal Statistical Society* 31: 350-371.
- Salleh N. H. M., Othman R. & Ramachandran S. 2007. Malaysia's tourism demand from selected countries: The ARDL approach to cointegration. *International Journal of Economics and Management* 1(3):345-363.
- Sheldon P. J. 1993. Forecasting tourism: expenditure versus arrivals. *Journal of Travel Research* 32: 13-20.
- Shitan M. 2008. Time series modelling of tourist arrivals to Malaysia. *InterStat (October)*: 1-12.
- Smeral E. & Weber A. 2000. Forecasting international tourism: Trends to 2010. *Annals of Tourism Research* 27 (4): 982-1006.
- Song H. & Witt S.F. 2000. *Tourism Demand Modelling and Forecasting: Modern Econometric Approaches*. Pergamon: Oxford.
- Song H., Romilly P. & Liu X. 2000. An empirical study of outbound tourism demand in the UK. *Applied Economics* 32(5): 611-624.
- Song H. & Witt S.F. 2003. Tourism forecasting: The general-to-specific approach. *Journal of Travel Research* 42: 65-74.
- Song H., Wong K. & Chon K. 2003a. Modelling and forecasting the demand for Hong Kong tourism. *Hospitality Management* 22: 435-451.
- Song H., Witt S.F. & Jensen T.C. 2003b. Tourism forecasting: Accuracy of alternative econometric models. *International Journal of Forecasting* 19: 123-41.
- Song H., Witt S.F. & Li G. 2003c. Modelling and forecasting the demand for Thai tourism. *Tourism Economics* 9(4): 363-388.
- Song H. & Witt S.F. 2006. Forecasting international tourist flows to Macau. *Tourist Management* 27: 214-224.
- Song H. & Li G. 2008. Tourism demand modelling and forecasting - a review of recent research. *Tourism Management* 29(2): 203-220.
- Song H., Van de Veen R., Li G. & Chen J. 2012. The Hong Kong tourist satisfaction index. *Annals of Tourism Research* 39(1): 459-479.

*School of Mathematical Sciences
Faculty of Science and Technology
Universiti Kebangsaan Malaysia
43600 UKM Bangi
Selangor DE, MALAYSIA
E-mail: syera9231@yahoo.com, noramuda@ukm.edu.my**

*Penulis untuk dihubungi