

Effects of Infrastructure, Safety and Academic Qualities on Demand for Educational Tourism in Malaysia

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Abstract: This study explores critically major determinants of inbound educational tourism demand in Malaysia between 2002 and 2014 by employing dynamic panel system Generalised Method of Moment (GMM). The study found academic reputation as the main driving factor of educational tourism followed by economic capacity of country of origin and the quality of higher education. The findings of this study provide some insights for the policymakers to plan their promotional strategies to attract a greater number of international students to Malaysia to pursue their higher education.

Keywords: Educational tourism, Higher education, GMM, Malaysia

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1. Introduction

Tourism has enjoyed phenomenal growth over the past three decades despite global recessions and intermittent bouts of shocks such as terrorism and health epidemics. The United Nation World Tourism Organization (UNWTO) reported that global tourist arrivals increased significantly from 278 million in 1980 to 1 billion in 2013. Moreover, with an annual growth rate of 3.3 per cent since 2010, the total number of international travellers is forecasted to reach 1.8 billion by 2030 (UNWTO, 2014). While holiday and leisure are the primary motivations for travel, Mazzarol and Soutar (2002) noted that travel for the purpose of education has increasingly established itself as a prominent sub-sector of the tourism industry, an observation borne out by growing number of travellers for that purpose (Llewellyn-Smith & McCabe, 2008; Babin & Kim, 2001). Indeed, Gibson

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(1998) also argued that this trend signifies that educational tourism has become a future trend of tourism. Given its growing prominence as a niche sector in the tourism industry, the educational tourism segment is now perceived to be an important sub-sector of the overall economy that mandates further attention and enquiry.

Educational tourism has increasingly received special attention in Malaysia given its potential as a new engine of economic growth (Matahir & Tang, 2017a; 2017b). Initiatives to foreground Malaysia as a major educational hub have gained momentum over the past decade. These include the establishment of educational centres in selected countries (e.g. China, the United Arab Emirates, Vietnam, etc.) for marketing and the setting up of agencies to assist international students in matters pertaining to registration and immigration. Apart from that, the promotion of educational tourism is implemented through collaborative inter-agency frameworks such as that between Ministry of Higher Education (MOHE) and Ministry of Tourism and Culture (MOTAC) which led to *101 Edutourism Packages* in 2015 that contained information on Malaysia's public universities.

This emphasis on educational tourism is beginning to bear fruit as attested by both revenue gains and tourist arrivals for educational purposes. In fact, mid-term reviews of the Ninth Malaysian Plan showed the government earned RM1.4 billion in foreign exchange from the educational tourism segment with international student enrolment totalling 92,318 in 2007 (Malaysia, 2008). Given the upward trajectory of global students' entry into local educational institutions, Malaysia targeted to attract 250,000 international students by 2025. According to the statistics released by MOHE, there are approximately 122,034 international students currently enrolled in both public and private higher education institutions (HEIs) as of 2015. Despite these encouraging numbers, the figure is still below the projected target of 150,000 students primarily due to stiff competition from other regional educational hubs such as Singapore and South Korea (Lee, 2014). Consequently, Malaysia may not realise the benefits of educational tourism easily as envisaged (Ariff, 2007).

Information on educational tourism is vital input in the conceptualisation of effective educational tourism friendly policies and the implementation of successful promotional initiatives. However, a dearth of studies on non-economic aspects of educational tourism in Malaysia has thus far impeded efforts to further galvanise educational tourism promotion efforts. This study attempts to fill that gap by examining the role of non-economic variables of educational tourism namely, academic reputation, academic quality (both teaching and research), facility, and safety in the selection of Malaysia as an educational tourism destination. The results of this study are expected to provide valuable insights to stakeholders and

policymakers in the educational sector to design proactive policies and effective promotional programmes to serve as catalysts in attracting more educational tourists as well as ensure sustainability and viability of the educational tourism sub-sector.

This study is organised as follows. Section 2 is a review of past studies on educational tourism while section 3 describes methodology and data. Section 4 discusses empirical results while Section 5 concludes the paper by providing policy recommendations based on the findings of the study.

2. Related Literature

While a plethora of studies have suggested the main factors that contribute to demand for tourism in both developed and developing countries, space constraints preclude a detailed explanation. Nevertheless, two major strands of literature are evident: a) studies that focus overall tourism demand (e.g. Garín-Muñoz and Montero-Martín, 2007; Tang and Tan, 2015); b) studies that explore various sub-segments of tourism demand of which, investigating educational tourism via panel data analysis (e.g. Rodríguez, Martínez-Roget, and Pawlowska, 2012; Bento, 2014) and cross-section data analysis (e.g. Mazzarol and Soutar, 2002; Lam, Ariffin, and Ahmad, 2011; Abubakar, Shneikat, and Oday, 2014) is pertinent to this discussion. Divisekera (2013) and Lim (2006) on the other hand, provide a comprehensive discussion of general factors that lure tourists to visit a particular destination or site.

Income, particularly income elasticity, has thus far remained the most commonly employed variable in modelling tourism demand as it can be used in categorising its utilitarian value. Hence, a tourism product is deemed to be a luxury or normal good if income elasticity is positive or greater than unity and vice versa. (e.g. Albaladejo, González-Martínez, & Martínez-García, 2016; Lorde, Li, & Airey, 2016; Tang & Tan, 2015; Seetanah, Dubarry, & Ragoodoo, 2010; Hanafiah & Harun, 2010; Salleh et al. 2008; Garín-Muñoz & Montero-Martín, 2007).

Apart from income, an important variable is the price. Price of tourism is included in the modelling process to measure the sensitivity of tourists toward price of the product or places that they want to travel. This is also known as the price elasticity of tourism demand. Previous studies have tended to use relative price differentials between destination and source as a proxy for tourism price. Scholars (e.g. Garín-Muñoz and Montero-Martín, 2007; Lim, 2004; Lee, 1996) have employed exchange rate and transport cost during the modelling process whence determining the price of tourism. Notwithstanding which proxy is applied, the price elasticity of tourism demand varies across countries. For example, Song, Wong, and Chon (2003) found the price elasticity of tourism demand in Hong Kong was

between -0.206 to -2.88 for each country of origin while Önder, Candemir and Kumral (2009) noted that the price elasticity of tourism demand in Izmir and Istanbul was -1.91 and -0.03 respectively. Salleh et al. (2008) and Tang and Tan (2015) reported the price elasticity of tourism demand in Malaysia also differed across major tourism sources.

In assaying non-economic factors, several studies have employed behavioural-based approaches that focus on the role of habits and preferences in influencing tourism demand. Specific behaviours studied include repeated visits to the same destination, and the influence of word-of-mouth information regarding a particular destination. These behaviours are usually proxied as lagged dependent variables for habits and preferences (e.g. Garín-Muñoz & Montero-Martín, 2007; Song et al., 2010; Tang & Tan, 2015; Habibi, 2016; Albaladejo, González-Martínez, & Martínez-García, 2016).

Studies that examined factors that influence demand for educational tourism, like their overall tourism demand corollaries, often incorporated income and price variables in their modelling. However, the outcomes of such modelling are often varied. Rodríguez, Martínez-Roget, and Pawlowska (2012) noted the impact of income on educational tourism is negative and marginally significant. In contrast, income is significant in explaining the inflow of international students to Europe when only economic factors are considered in isolation but becomes insignificant when non-economic factors (e.g. the Erasmus student mobility programme and the stage of internationalisation of higher education) are included (Bento, 2014).

In terms of relative price, Rodríguez, Martínez-Roget, and Pawlowska (2012) highlighted its insignificance in explaining demand for educational tourism, a finding supported by Bento (2014). Using a push-pull model in their studies, Lam, Ariffin, and Ahmad (2011) as well as Abubakar, Shneikat, and Oday (2014) suggested that price is not a major concern for international students embarking on further studies abroad. To surmise, extant literature seems to suggest economic factors are minor considerations when determining choice of educational tourism destinations.

Studies utilising non-economic factor approaches (e.g. Mazzarol and Soutar, 2002; Staniscia, 2012; Abubakar, Shneikat, and Oday, 2014) highlighted that academic reputation or image of the educational institutions is one of the key factors that influence the demand for educational tourism. In the case of Malaysia, Lam, Ariffin, and Ahmad (2011) pointed out that educational tourists choose an institution after consulting with their family members and peers, especially those who have graduated from a particular institution. In affirming these findings through panel data analysis, Rodríguez, Martínez-Roget, and Pawlowska (2012)

and Bento (2014) reported the magnitude of these variables was 0.41 and 0.36 respectively.

Quality of education is another important aspect that influences international students' choice of their study destination. As evident from international student mobility data, there is an obvious unidirectional international student flow from developing to developed countries based on the notion that developed countries are more likely to offer quality education (UNESCO, 2013). This assumption is buttressed by data from other sources which indicated that United States is prime destination for international students as it is perceived to offer quality education (Anonymous, 2016). Similarly, Lam, Ariffin, and Ahmad (2011), in the case of Malaysia and Abubakar, Shneikat, and Oday (2014) in the case of Cyprus, reported quality of education as a prime consideration by international students. However, other studies indicated that this factor is not significant hence suggesting that quality of education is an indeterminate factor in influencing the demand for educational tourism (Sá, Florax, & Rietveld, 2004; Van Bouwel & Veugelers, 2013; Soo & Elliot, 2010; González, Mesanza & Mariel, 2011; Bessey, 2012; Beine, Noël, & Ragot, 2014).

Recent studies on educational tourism have pointed to the safety factor in influencing choice of destination as travelling to another country normally involves a certain degree of uncertainty, particularly when one lacks information pertaining to safety in the target destination. The safety factor is prominent in the push-pull model adopted by Mazzarol and Soutar (2002), Lam, Ariffin, and Ahmad (2011) and Abubakar, Shneikat, and Oday (2014). In contrast, the safety factor showed nebulous results in educational tourism studies that adopted the panel study modelling approach (Rodríguez, Martínez-Roget, & Pawlowska, 2012; Bento, 2014).

Therefore, from the foregoing, it is clear demand for tourism, particularly educational tourism, is not merely determined by economic factors while non-economic factors seem to play a significant role in explaining tourists' choice of destination. More importantly, cultural similarity, educational quality, availability of facility, safety, and promotional policy have not been given the attention they deserve in modelling educational tourism demand in Malaysia. Owing to these drawbacks, this topic deserves to be explored with the aim to add to body of knowledge on educational tourism demand in Malaysia by factoring non-economic variables into the model. This would ensure estimation results are useful for policymaking.

3. Methodology and Data

3.1 Model Specification and Data

The previous section has discussed variables that play a role in demand for educational tourism in Malaysia. Based on the literature and theory of consumer behaviour, the following educational tourism demand function for Malaysia is formulated:

$$\text{ETOUR}_{M,jt} = f(\text{GDP}_{jt}, \text{P}_{M,jt}, \text{Z}) \quad (1)$$

From the model, $\text{ETOUR}_{M,jt}$ is educational tourists from country of origin (j) to destination country, Malaysia (M) at time t . The number of international students is proxy for educational tourists since this is the best proxy available in Malaysia.¹ GDP_{jt} is the per capita real GDP of the origin country and $\text{P}_{M,jt}$ is price of educational tourism measured by the relative cost of living in Malaysia to the country of origin. The cost of living measures overall expenses incurred by international students, including their cost of education, daily expenditure and travel costs. Following Song and Wong (2003) and Tang and Tan (2015), $\text{P}_{M,jt}$ is calculated using relative price index between Malaysia and country of origin adjusted with exchange rate as shown by Equation (2):

$$\text{P}_{M,jt} = \frac{\text{PI}_{Mt} / \text{ER}_{Mt}}{\text{PI}_{jt} / \text{ER}_{jt}} \quad (2)$$

where PI_{Mt} and PI_{jt} are the price index measured by GDP deflator (2005 = 100) for Malaysia and that of country of origin respectively. ER_{Mt} denotes the nominal exchange rate between Ringgit Malaysia against the US dollar and ER_{jt} is the nominal exchange rate between the currency of country of origin against the USD.

In Equation (1), Z represents a vector of major factors that influence educational tourism demand. Z is further categorised into several factors, namely academic reputation, quality of higher education, level of safety, existing infrastructure, initiatives to promote educational tourism, and religion. This study followed Rodríguez, Martínez-Roget, and Pawlowska

(2012) and Bento (2014) in using a lagged dependent variable ($ETOUR_{M,jt-1}$) to measure academic reputation of the institution. The past value of educational tourism indicates the experience from their past visits and this information can be spread to other friends and relatives via word-of-mouth (WOM) indicating the institution's reputation. This view is consistent with Nguyen and Blanc (2001) who noted an organisation's reputation is a cumulative sum of its past action

Quality of higher education is segregated into teaching quality (TQ) and research quality (RQ). The teaching quality indicator is measured by the lecturer-student ratio in the Malaysian HEIs based on QS World University Ranking lecturer-student ratio to be the most effective proxy metric to measure the teaching quality of an institution. In conceptualising indicator for research quality, two similar studies, namely, Jin and Jin (2013), are used as a guide. They noted quality of tertiary education involves assessing the cognitive ability of its teaching staff, which is reflected in a faculty's research publications and by Yang (2007) and Haddow and Genoni (2009), who observed that quality of research is measured by total citations per article. Based on the two perspectives, this article uses total citation per article published by Malaysian researchers in Scopus indexed journals as an indicator of research quality.

In addition, transport and communication index was developed based on public transport as well as information and communication technology (ICT) facilities, including the number of telephones and total number of internet subscribers as a proxy for the availability of infrastructure (INFRA). According to Khadaroo and Seetanah (2007, 2008) and Cohen (1979), the availability of infrastructure in the destination country is important to attract tourists. Travel to a foreign land is fraught with issues of safety. Hence, this study uses social safety index to measure the level of safety (SAFE) in Malaysia. Finally, two qualitative variables are introduced into the model. First, a one-off dummy variable (D_{EMIO}) to capture the impact of policy initiatives by the government in promoting Education Malaysia programme, such as establishment of higher education promotional centres in selected countries.² Second, cultural factor is introduced in the model to examine how culture similarities would influence decision-making among students. Nonetheless, cultural indicator is more subjective. In light of this, religion (D_{MUSLIM}) is used as a proxy for culture in view of the fact that religion is part of culture (Cohen & Hill, 2007).

Based on the above, the demand model for educational tourism can be expressed as below:

Model 1: Teaching quality

$$\ln\text{ETOUR}_{M,jt} = \alpha_1 + \beta_1 \ln\text{ETOUR}_{M,jt-1} + \beta_2 \ln\text{GDP}_{jt} + \beta_3 \ln\text{P}_{M,jt} + \beta_4 \text{D}_{\text{MUSLIM}} + \beta_5 \text{D}_{\text{EMIO}} + \beta_6 \ln\text{TQ}_{Mt} + e_{1it} \quad (3)$$

Model 2: Research quality

$$\ln\text{ETOUR}_{M,jt} = \alpha_2 + \omega_1 \ln\text{ETOUR}_{M,jt-1} + \omega_2 \ln\text{GDP}_{jt} + \omega_3 \ln\text{P}_{M,jt} + \omega_4 \text{D}_{\text{MUSLIM}} + \omega_5 \text{D}_{\text{EMIO}} + \omega_6 \ln\text{RQ}_{Mt} + e_{2it} \quad (4)$$

Model 3: Availability of infrastructure

$$\ln\text{ETOUR}_{M,jt} = \alpha_3 + \psi_1 \ln\text{ETOUR}_{M,jt-1} + \psi_2 \ln\text{GDP}_{jt} + \psi_3 \ln\text{P}_{M,jt} + \psi_4 \text{D}_{\text{MUSLIM}} + \psi_5 \text{D}_{\text{EMIO}} + \psi_6 \ln\text{INFRA}_{Mt} + e_{3it} \quad (5)$$

Model 4: Safety

$$\ln\text{ETOUR}_{M,jt} = \alpha_4 + \vartheta_1 \ln\text{ETOUR}_{M,jt-1} + \vartheta_2 \ln\text{GDP}_{jt} + \vartheta_3 \ln\text{P}_{M,jt} + \vartheta_4 \text{D}_{\text{MUSLIM}} + \vartheta_5 \text{D}_{\text{EMIO}} + \vartheta_6 \ln\text{SAFE}_{Mt} + e_{4it} \quad (6)$$

where \ln is the natural logarithm term, α_i denotes the intercept term, β_i , ω_i , ψ_i , and ϑ_i are the elasticities coefficient of respective variables and e_{it} is error term that fulfils the i.i.d. assumptions. We expect that $\ln\text{ETOUR}_{M,jt-1}$, $\ln\text{GDP}_{jt}$, $\ln\text{TQ}_{Mt}$, $\ln\text{RQ}_{Mt}$, $\ln\text{SAFE}_{Mt}$, and $\ln\text{INFRA}_{Mt}$ have a positive effect on the demand for educational tourism in Malaysia. Following the theory of demand, $\ln\text{P}_{M,jt}$ should have a negative effect on the demand for educational tourism. As mentioned before, D_{EMIO} is a dummy variable for policy initiatives. Countries which have Malaysian educational promotional centres are assigned value of 1, while the value 0 indicates otherwise. With regards to D_{MUSLIM} , a country is recognised as either a homogenous Muslim country or whose majority population is Muslim. Thus, a dummy value of 1 indicates the country of origin has the same religion like Malaysia while a value of 0 denotes otherwise. Coefficients of D_{EMIO} and D_{MUSLIM} are expected to be positive.

The study utilised unbalanced panel data covering 149 countries between 2002 and 2014 period. The list of countries under investigation is

shown in Appendix 1. Data used in this research are gathered from various sources. Data on enrolment of international students in Malaysia are obtained from the Ministry of Higher Education. The safety index and the infrastructure index are extracted from the Malaysian Quality of Life report published by Economic Planning Unit (EPU). In addition, the per capita real GDP, the nominal exchange rate and the GDP deflator are obtained from United Nations Statistical Division.³ With respect to research quality indicators for higher education, data is obtained from Scopus website and collated while data pertaining to teaching quality are obtained from Department of Statistics.

3.2 *Econometric Methodology*

This study employs a panel data estimation setting to examine the influential factors behind educational tourism demand in Malaysia. Wooldridge (2002) notes that employing panel data can increase the number of observations and provide a greater degree of freedom. Nevertheless, the issue of endogeneity in the panel setting becomes a concern because it affects the consistency of estimation results, especially in static models. Endogeneity arises from several sources with one being bias caused by an omitted variable(s). This is because, if the omitted variable(s) is correlated with other explanatory variables and highly correlated with the error term, the estimation results will violate the Gauss-Markov conditions.

It has been shown that variables related to educational tourism are largely influenced by the reputation of the educational institutions, which are either built upon their past performance or perceived value, the information of which is either gleaned via WOM or through formal information gathered from various sources. As this information is important in decision making, it is imperative that it is included in the model. Hence, in order to insert this dynamic characteristic in our estimation, we choose the most robust technique to estimate our model i.e., the Generalised Method of Moments (GMM) as suggested by Arellano and Bond (1991). The GMM is also suitable given the nature of the panel dimension where the number of cross-section (N) unit (i.e. countries) clearly exceeds the number of time (T) unit. In general, the dynamic panel model can be expressed as follows Equation (7):

$$y_{it} = \alpha y_{it-1} + \beta' x_{it} + \eta_i + \mu_{it} ; i = 1, 2, \dots, N \text{ and } t = 1, 2, \dots, T \quad (7)$$

where i and t are country and time index respectively while y is the dependent variable in which it also appears as lagged-one independent

variable, x is a vector of independent variables that affect the dependent variable, η_i is country specific effect and μ_{it} is the error term. As mentioned earlier, the presence of lagged-one dependent variable can cause simultaneity bias due to the problem of endogeneity. This problem can be overcome by transforming Equation (7) into its first different form as shown by the following Equation (8):

$$\Delta y_{it} = \alpha \Delta y_{it-1} + \beta' \Delta x_{it} + \Delta \mu_{it} \tag{8}$$

While the transformation to first different form can eliminate country specific effects from the model, it is obvious that $\Delta y_{it} = (y_{it} - y_{it-1})$ and $\Delta \mu_{it} = (\mu_{it} - \mu_{it-1})$ are correlated and therefore, violates the classical linear regression model's (CLRM) assumption. To avoid this problem, Arellano and Bond (1991) suggest using lagged level of the explanatory variable as instruments with the assumptions that the error term does not contain a serial correlation and the explanatory variables are weakly exogenous. Equation (8) can thus, be estimated and follows the moment conditions

$$\text{of } E[y_{it-s} \cdot (\mu_{it} - \mu_{it-s})] = 0 \quad \text{and}$$

$E[x_{it-s} \cdot (\mu_{it} - \mu_{it-s})] = 0$; for $s \geq 2$ and $t = 3, \dots, T$. This estimator is better known as the First Difference GMM (hereafter FD-GMM). Nevertheless, the FD-GMM also contains several deficiencies, prominent of which is the poor performance of the FD-GMM when there are too many instrumental variables (Arellano & Bover, 1995). Bond (2002) also noted the estimated coefficient of the lagged dependent variable tends to be closer to the fixed effect estimated coefficient which is an indication of a finite simple bias. Thus, in order to increase dynamic estimation efficiency, Blundell and Bond (1998) modified the FD-GMM estimator by combining the moment condition in the first difference and in the level, i.e. Equation (7) and (8), with additional moment conditions such as

$$E[(y_{it-s} - y_{it-s-1}) \cdot (\eta_i + \mu_{it})] = 0 \text{ and}$$

$E[(x_{it-s} - x_{it-s-1}) \cdot (\eta_i + \mu_{it})] = 0$; for $s = 1$. This improved estimator is better known as the system GMM.

The validity of this system GMM estimator depends on two diagnostic tests i.e. the Arellano-Bond autocorrelation test and the over-identification test developed by Sargan (1958) and Hansen (1982). Arellano and Bond

(1991) suggested testing the order of serial correlation of the error term since normally the null hypothesis of the presence of serial correlation would be rejected at the order 1 or AR (1) because $\Delta\mu_{it}$ are correlated with $\Delta\mu_{it-1}$ via μ_{it-1} . Thus, according to Roodman (2009), the test of the second order of autocorrelation is important as it will detect the correlation between μ_{it-1} in $\Delta\mu_{it}$ and μ_{it-2} in $\Delta\mu_{it-1}$, in which the null hypothesis for the presence of autocorrelation in AR (2) should not be rejected.

Nevertheless, estimation results could fulfil the serial conditions where the AR (2) is not rejected suggesting that the model is free from autocorrelation problem. However, if the instrumental variables are invalid, the problem of endogeneity cannot be overcome. In addition, too many instruments employed in the model would result in a small sample bias. Thus, the Sargan-Hansen test for over-identification will be used to verify the validity of the instruments in the model. The test showed the null hypothesis of the joint instruments is valid and the model is specified correctly. If this test fails to reject the null hypothesis, it indicates that the model is inappropriate.

4. Estimation Results and Discussions

The previous section has discussed the specifications of the model as well as data and estimation methods used in this study. In this section, we discuss the estimation results from the dynamic system GMM of the proposed Model (1) to (4) of Equation (3) to (6) in Table 1. Overall, the diagnostic tests of the autocorrelation across the models yield the predicted outcome. While there is first order autocorrelation, all models are devoid of second order autocorrelation. In addition, validity of the instrumental variables with the Sargan-Hansen test was also checked. The results show that the null hypothesis of over-identification restrictions is not rejected for all models, suggesting that all instruments in the models are valid. Overall, our findings suggest the all coefficients have a predicted link with economic theory.

Table 1: The results of dynamic panel system GMM estimation

Variables	Model 1	Model 2	Model 3	Model 4
$\ln\text{ETOUR}_{M,jt-1}$	0.8726*** (0.0495)	0.8714*** (0.0488)	0.8726*** (0.0495)	0.8726*** (0.0496)
$\ln\text{GDP}_{jt}$	0.0169** (0.0081)	0.0173** (0.0083)	0.0169** (0.0081)	0.0169** (0.0028)
$\ln\text{P}_{M,jt}$	-0.0058** (0.0028)	-0.0060** (0.0028)	-0.0058** (0.0028)	-0.0058** (0.0028)
D_{MUSLIM}	0.0198** (0.0095)	0.0204** (0.0094)	0.0198** (0.0095)	0.0197** (0.0095)
D_{EMIO}	0.0053 (0.0131)	0.0046 (0.0129)	0.0053 (0.0132)	0.0053 (0.0131)
$\ln\text{TQ}_{Mt}$	0.2213** (0.0872)			
$\ln\text{RQ}_{Mt}$		0.0026*** (0.0008)		
$\ln\text{INFRA}_{Mt}$			0.2145** (0.0846)	
$\ln\text{SAFE}_{Mt}$				0.2152** (0.0850)
Diagnostic tests				
AR (1) test	-2.87***	-2.88***	-2.86***	-2.87***
AR (2) test	-1.03	-1.03	-1.03	-1.03
Sargan-Hansen test	138.46	143.97	138.45	138.45
No. of Instruments	141	148	141	141
No. of observations	1706	1706	1706	1706

Notes: The asterisks *** and ** denote significance at 1% and 5% respectively. Numbers in the parenthesis is the robust standard error. The results are based on the two-step system GMM with Windmeijer (2005) small sample correction.

Turning to the interpretation of estimation results, income of the origin country is statistically significant in explaining the demand for educational tourism in Malaysia at 5% level. Moreover, given the value of the income elasticity across the models is 0.02, it can be inferred that an increase in income by 10 per cent in the country of origin increases the inflow of

international students to Malaysia by 0.2 per cent. This finding is inconsistent with that of Rodríguez, Martínez-Roget, and Pawlowska (2012) and Bento (2014) who noted that income is not a significant factor that influences the mobility of international students. This divergence in outcomes is mainly due to the choice of proxy for educational tourism. The authors used international students affiliated to the ERASMUS exchange programme and who received financial support from both home and destination countries. Therefore, it is not surprising to find an insignificant result for income.

With respect to the cost of living, we find that it has a significant negative impact on demand for educational tourism. As expected, the findings of negative signs of the cost of living fulfil the price-quantity relationship underpinning consumer behaviour theory. In addition, the magnitude of price elasticity indicates that students are not sensitive to changes in the cost of living in Malaysia. With the value of the price elasticity about 0.01, it can be implied that every 10 per cent increase in the cost of living will lower the demand for educational tourism by approximately 0.1 per cent. This finding is again not consistent with previous studies such as Rodríguez, Martínez-Roget, and Pawlowska (2012) and Bento (2014). The present study believes that disparity in outcomes may plausibly be due to the choice of sponsored students as proxy for educational tourism demand.

As far as non-economic factors are concerned, it is shown that academic reputation is statistically significant at 1% level. With its coefficient values of approximately 0.87 across models, we notice that academic reputation transmitted via WOM seems to play a very important role in influencing the demand for educational tourism in Malaysia. In fact, its impact is much greater than that of economic factors. These results are supported by previous studies (e.g. Mazzarol and Soutar, 2002; Pimpa, 2005; Padlee, Kamaruddin, and Baharun, 2010; Rodríguez, Martínez-Roget, and Pawlowska, 2012; Bento, 2014). From a different perspective, academic reputation gains its intrinsic worth through an agglomeration of subjective abstractions pertaining to satisfaction, positive attitudes and perceptions towards the educational institutions they are enrolled in. The sharing of these personalised/subjectivised perspectives are normally through personal conversations and interactions which by default underscores the vital role of WOM in projecting a positive image of a country as a desirable and reputable education destination.

The results also show how religious similarities between Malaysia and the country of origin play a significant role in determining the demand for educational tourism wherein D_{MUSLIM} is statistically significant at 5% level in all models. This supports the fact that most international students

pursuing their education in Malaysia are from Muslim countries affected by the geopolitical fallout emanating from events surrounding the September 2001 tragedy (Sirat, 2008). In this regard, Malaysia is ideally positioned to benefit from a reverse flow in international students, especially involving those from the Muslim cohort who are seeking alternative education destinations to their hitherto traditional ports of call, namely, developed Western countries. It is conceivable that this reversion could accelerate with the ascendancy of the Trump presidency and its generally stringent regulations and xenophobic attitudes to foreign students from the Muslim world.

With regard to other non-economic factors, estimation results indicate that teaching quality, research quality, availability of infrastructure and safety are significant factors which collectively drive the demand for educational tourism in Malaysia. With respect to teaching quality in Malaysian HEIs as presented in Model (1), we find that teaching quality is both positive and highly significant in explaining the demand for educational tourism in Malaysia. The coefficient value for teaching quality is 0.221 and this indicates that if teaching quality is improved by 10 per cent, on average, the inflow of educational tourists will increase by approximately 2.2 per cent. Similarly, research quality as shown in Model (2) also has a positive relationship with the inflow of educational tourism. Nevertheless, the value of its coefficient is much lower, approximately 0.003, when compared with that of teaching quality. It is worth noting that educational tourists to Malaysia are more likely to be concerned about teaching quality rather than research as their cohort is primarily enrolled in undergraduate programmes where the focus is on teaching rather than research.⁴ This trend may account for the low magnitude coefficient of research quality.

Infrastructure is also important for educational tourism in Malaysia. From Model (3), we find that a 10% expansion in infrastructure facilities will increase the inbound educational tourists by about 2.1%. As for the safety and security factor, the results in Model (4) indicate that these have a positive effect on educational tourism demand in Malaysia at the 5% significant level. This suggests that a 10 per cent increase in the safety index will, on average, trigger a student inflow of approximately 2.2 per cent. It can be thus conjectured that any increased investment in the safety eco-system will not only improve the quality of life but will also help attract more educational tourists to Malaysia.

5. Conclusion and Policy Recommendations

Liberalisation of higher education and the commodification of knowledge has triggered an exponential growth in travel for the purpose of education. This segment has become another source of revenue for both developed and developing countries including Malaysia. In this study, major factors that influence the demand for educational tourism in Malaysia was examined. In order to achieve objectives of the study, educational tourism demand was modelled with a combination of both economic and non-economic factors with an unbalanced panel data setting from 2002 to 2014 covering 149 countries. The requisite estimation was done by employing GMM to estimate educational tourism demand for Malaysia.

In summary, the results indicate that academic reputation is the most influential factor in determining study destination. The study, consistent with economic theory, found that income has a positive effect on demand for educational tourism whereas cost of living (price) has a negative impact. Additionally, quality of education – both in terms of teaching and research play an important role in influencing the demand for educational tourism in Malaysia. Good infrastructure facilities and the security and political stability are also important factors that influence the choice of Malaysia as a destination for tertiary education. Apart from that, cultural connections as manifested via religious similarities between Malaysia and the origin country also attract international students, especially those from Muslim countries to Malaysia. However, findings suggest the establishment of Education Malaysia centres in selected countries did not significantly contribute towards the influx of educational tourists to Malaysia.

Several policy implications can be drawn from the foregoing. As non-economic factors, particularly academic reputation, play a significant role in the demand for educational tourism, it is timely that policy formulation and implementation are reconfigured towards improving academic reputation through improved management and administration efficiencies. Good interpersonal skills and managerial practices when dealing with international students are particularly important. Besides, internationalisation of local higher education institutions, especially private HEIs, through international collaboration such as twinning programmes, offshore campuses and scholar exchange and fellowships, will further enhance the image and prestige of local tertiary education institutions. These will create a positive impact on the students' experience and perception towards HEIs, and thus directly influence their friends and family via WOM.

Apart from maintaining and improving its academic reputation, the Malaysian HEIs should also put more emphasis on improving their teaching and research qualities as well as getting the right talent. This can

be done through offering faculty members the best possible incentives and creating a dynamic eco-system in which teaching and/or research can be enhanced through multidisciplinary and cross-faculty synergies as well as through a more integrated and collaborative university-industry engagements. Moreover, given the limited space reserved for foreign students at undergraduate levels in public HEIs, the government should initiate efforts to ensure quality provision of tertiary education in private HEIs through stringent enforcement of Malaysian Quality Accreditation protocols in the private tertiary institution sector. In terms of research quality, it is important for the government to allocate more funding to HEIs, especially research universities, to encourage these institutions to embark on greater research activities and publication in high impact journals.

Security and political stability of a country is also an important determinant to attract foreign students to Malaysia. As the threat of terrorism, crimes and other forms of violence continue to grow, there is a need to develop policies that ease the minds of international students traveling to Malaysia for educational tourism purposes. In conclusion, improving and sustaining these factors will be an advantage for the government and the Malaysian HEIs to encourage a greater number of international students, not only to achieve Malaysia's aim as an educational hub in the region but also able to generate revenue through educational tourism.

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NOTES

- ^{1.} According to Ritchie's (2006) framework, international students can be categorised under the education-first tourism where their main purpose for travelling abroad is to attend formal education. Huang (2008) also recognised full-time international students as educational tourists. Rodríguez, Martínez-Roget, and Pawlowska (2012) and Bento (2014) used the ERASMUS international students' exchange programme as a proxy for educational tourists in their respective studies. In fact, the growth in international student mobility is an important source for youth

travel segment and accounted for approximately 20 per cent of total arrival (Mattila et al., 2001; Kim, Oh, & Jogarathnam, 2007). Therefore, it is reasonable to use the number of international students to measure educational tourism demand.

2. The countries include United Kingdom, United States, Qatar, Egypt, China, Indonesia, and Vietnam.
3. Due to unavailability of data on consumer price index (CPI) for some countries, especially among the less developed countries (e.g. Somalia and North Korea), we use the GDP deflator as price level. In fact, a correlation analysis was done and we found CPI and GDP deflators are highly correlated.
4. According to the 2014 statistics of Malaysia Education Blueprint 2015-2025, enrolment of international students in post-graduate programmes only cover approximately 28 per cent of total enrolment of international students in Malaysia.

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Appendix

Appendix 1: List of countries under review

No.	Country	Sample	No.	Country	Sample	No.	Country	Sample
1	Afghanistan	2002 – 2014	51	Guatemala	2003 – 2014	101	Pakistan	2002 – 2014
2	Albania	2002 – 2014	52	Guinea Rep.	2002 – 2014	102	Palestine	2002 – 2014
3	Algeria	2002 – 2014	53	Guinea-B.	2003 – 2014	103	Panama	2003 – 2014
4	Australia	2002 – 2014	54	Guyana	2003 – 2011	104	P.N. Guinea	2003 – 2014
5	Austria	2004 – 2014	55	Hong Kong	2002 – 2014	105	Philippine	2002 – 2014
6	Azerbaijan	2002 – 2014	56	Hungary	2004 – 2014	106	Poland	2003 – 2014
7	Bahamas	2003 – 2014	57	Iceland	2005 – 2014	107	Portugal	2002 – 2014
8	Bahrain	2003 – 2014	58	India	2002 – 2014	108	Qatar	2002 – 2014
9	Bangladesh	2002 – 2014	59	Indonesia	2002 – 2014	109	Romania	2003 – 2014
10	Belarus	2003 – 2014	60	Iran	2002 – 2014	110	Russia	2002 – 2014
11	Belgium	2002 – 2014	61	Iraq	2002 – 2014	111	Rwanda	2002 – 2014
12	Benin	2002 – 2014	62	Ireland	2002 – 2014	112	Saudi Arabia	2002 – 2014
13	Bermuda	2011 – 2014	63	Italy	2002 – 2014	113	Senegal	2002 – 2014
14	Bhutan	2002 – 2014	64	Jamaica	2002 – 2014	114	Serbia	2007 – 2014
15	Bolivia	2006 – 2014	65	Japan	2002 – 2014	115	Seychelles	2002 – 2014

Appendix 1: (Continued)

No.	Country	Sample	No.	Country	Sample	No.	Country	Sample
16	Bosnia	2002 – 2014	66	Jordan	2002 – 2014	116	Sierra Leon	2002 – 2014
17	Botswana	2002 – 2014	67	Kazakhstan	2002 – 2014	117	Singapore	2002 – 2014
18	Brazil	2002 – 2014	68	Kenya	2002 – 2014	118	Slovakia	2005 – 2014
19	Brunei	2002 – 2014	69	Korea, South	2002 – 2014	119	Slovenia	2002 – 2014
20	Bulgaria	2007 – 2014	70	Kuwait	2003 – 2014	120	Solomon Island	2002 – 2014
21	Burkina Faso	2002 – 2014	71	Kyrgyzstan	2002 – 2014	121	Somalia	2002 – 2014
22	Burundi	2002 – 2014	72	Laos	2002 – 2014	122	South Africa	2002 – 2014
23	Cambodia	2002 – 2014	73	Lebanon	2002 – 2014	123	Spain	2003 – 2014
24	Cameroon	2002 – 2014	74	Lesotho	2002 – 2014	124	Sri Lanka	2002 – 2014
25	Canada	2002 – 2014	75	Liberia	2002 – 2014	125	Sudan	2002 – 2014
26	Chad	2002 – 2014	76	Libya	2002 – 2014	126	Swaziland	2002 – 2014
27	Chile	2002 – 2014	77	Macau	2002 – 2013	127	Sweden	2002 – 2014
28	China	2002 – 2014	78	Macedonia	2002 – 2014	128	Switzerland	2002 – 2014
29	Colombia	2002 – 2014	79	Madagascar	2005 – 2014	129	Syrian Arab	2002 – 2014
30	Comoros	2002 – 2014	80	Malawi	2002 – 2014	130	Tajikistan	2002 – 2014
31	Congo	2002 – 2014	81	Maldives	2002 – 2014	131	Tanzania	2002 – 2014
32	Costa Rica	2002 – 2014	82	Mali	2002 – 2014	132	Thailand	2002 – 2014
33	Cote D'Ivoire	2002 – 2014	83	Mauritania	2002 – 2014	133	Togo	2002 – 2014
34	Croatia	2002 – 2010	84	Mauritius	2002 – 2014	134	Trinidad & Tobago	2003 – 2014
35	Czech Rep.	2002 – 2013	85	Mexico	2003 – 2014	135	Tunisia	2002 – 2014
36	Denmark	2002 – 2014	86	Moldavia	2007 – 2014	136	Turkey	2002 – 2014
37	Djibouti	2002 – 2014	87	Mongolia	2002 – 2014	137	Turkmenistan	2002 – 2014
38	East Timor	2003 – 2008	88	Morocco	2002 – 2014	138	Uganda	2002 – 2014
39	Ecuador	2002 – 2014	89	Mozambique	2002 – 2014	139	UK	2002 – 2014
40	Egypt	2002 – 2014	90	Myanmar	2002 – 2014	140	Ukraine	2002 – 2014
41	Eq. Guinea	2003 – 2014	91	Namibia	2002 – 2014	141	UAE	2002 – 2014
42	Eritrea	2002 – 2014	92	Nauru	2002 – 2014	142	Uruguay	2007 – 2014
43	Ethiopia	2002 – 2014	93	Nepal	2002 – 2014	143	USA	2002 – 2014
44	Fiji	2002 – 2014	94	Netherlands	2002 – 2014	144	Uzbekistan	2002 – 2014
45	Finland	2002 – 2014	95	New Zealand	2002 – 2014	145	Venezuela	2005 – 2014
46	France	2002 – 2014	96	Niger	2002 – 2014	146	Vietnam	2002 – 2014
47	Gambia	2002 – 2014	97	Nigeria	2002 – 2014	147	Yemen	2002 – 2014
48	Germany	2002 – 2014	98	North Korea	2004 – 2014	148	Zambia	2002 – 2014
49	Ghana	2002 – 2014	99	Norway	2002 – 2014	149	Zimbabwe	2002 – 2014
50	Greece	2002 – 2014	100	Oman	2002 – 2014			