

JOURNAL OF ECONOMICS AND SUSTAINABILITY http://e-journal.uum.edu.mv/index.php/jes

How to cite this article:

Foo, C.C., Russayani, I. & Lim, H.E. (2021). Going for advanced degrees? A study among the currently enrolled international students in Malaysia using a sequential approach. *Journal of Economics and Sustainability*, 3(2), 56-71. https://doi.org/10.32890/jes2021.3.2.5

GOING FOR ADVANCED DEGREES? A STUDY AMONG THE CURRENTLY ENROLLED INTERNATIONAL STUDENTS IN MALAYSIA USING A SEQUENTIAL APPROACH

¹Chuan Chew Foo, ²Russayani Ismail & ³Hock-Eam Lim

¹Department of Economics, Universiti Tunku Abdul Rahman, Malaysia ^{2,3}School of Economics, Finance and Banking, Universiti Utara Malaysia, Malaysia

Corresponding author: <u>foocc@utar.edu.my</u>

Received:29.4.21

Revised: 25.5.21

Accepted: 27.5.21

Published:31.7.21

ABSTRACT

Malaysia has positioned itself to be a regional higher education hub and targeted to increase its number of international students to 250,000 by 2025, from 81,424 students in 2013. In the face of COVID-19, Malaysia is expected to experience stiff competitions with other countries in attracting international students. In essence, apart from attracting new students to come and study, pursuing the currently enrolled international students to stay on for advanced degrees is equally crucial to achieving the objective of the internationalisation agenda. Many studies have been done on factors affecting the decision of international students in choosing a host country. However, the retention and its sequential nature have been largely ignored. This paper aims to examine the probability of retention using a sequential approach. The descriptive statistics analysis found that Malaysia could expect that around 42% of its currently enrolled international students will remain in Malaysia. Results of the estimated sequential logit model reveal that university services are the significant factor that influences the probability of retention, whereas the education cost is found to be insignificant. Thus, consumption motives dominate the investment motives in terms of the probability of retention. Based on the findings, various policy implications are suggested to improve the retention rate of international students in Malaysia.

Keywords: Probability of retention; sequential logit model; consumption motive; investment motive.

INTRODUCTION

Since the liberalisation and democratisation of higher education in 1997, Malaysia has positioned itself as a regional higher education hub. Even with the pandemic of COVID-19, Malaysia has targeted to attract 250,000 international students in 2025 (Hazlina, 2020). This represents almost double the number of international students, i.e., 127,583 in 2019 (Viggo, 2019). To achieve this target, inevitably, Malaysia must be ready to compete with other host countries, especially in South East Asia, in attracting international students. The initiatives taken by the Malaysian government show the seriousness of its intention in leading Malaysia towards becoming a successful regional education hub (Knight, 2011).

Knight (2011) defined an education hub as a country's effort to build a critical mass of local and foreign educational and research institutions, students, and industries, which interacts to initiate education, training, knowledge production and innovation. The hub could be categorised into three: student, talent, and innovation. From the definition, one could see the importance of international students in determining the success of an educational hub. Thus, it is important to attract qualified students and retain them to continue their postgraduate study, which concentrates more on research, development, and commercialisation (Abd Aziz Ismail & Doria Abdullah, 2014).

In promoting Malaysia as the hub of educational excellence, attracting quality students relies heavily on identifying and comprehending how decisions are made regarding education choices. In general, factors affecting their choices have to be identified correctly so that the host country can readily adjust to any changes and improvements; thus, research on the demand for tertiary education is important to infer the factors that affect the demand.

Studies on the factors that drive international students to select a host country have gained substantial attention in the literature. Most studies previously employed the push-pull model (e.g., Chien, 2015; Lee, 2013; Migin et al., 2015; Nachatar et al., 2014). Some used the satisfaction perspective (e.g., Ashraful Azam & Ahasanul, 2018), while others used the local demand perspective (e.g., Menon, 1998). The retention of the currently enrolled students from the educational choice motive and sequential perspective is largely ignored. This study aims to fill this gap by addressing this issue using the case of Malaysia.

LITERATURE REVIEW

In literature, student "retention" or "persistence" is defined as student re-enrolment in university, whether it is continuous from one semester to another semester or whether students resume study after being temporarily interrupted (Kwai, 2009). However, this study investigates the currently enrolled international student's re-enrolment into universities in Malaysia for their advanced study. Therefore, the student retention or persistence model is partially applicable here to cater to this paper's needs. As far as the retention model is concerned, Tinto's retention model is often cited in research related to student persistence (Tinto, 1975) and is applicable in this paper.

Tinto (1975) indicated that an individual's integration into the academic system and social system in higher education institution plays a role to ensure his/her level of persistence when going through the system in his/her studies. The retention level will be higher when the student integrates more into the institution's system. After the integration, the individual's commitment and institution's commitment will be the main determinants of whether or not the individual will remain with the education institution until the completion of his or her degrees. The higher the individual's commitment to complete his or her study, the higher the probability of continuing with the particular institution.

Tinto's model was supported by Pascarella and Terenzini (1980), who developed a multidimensional instrument to examine the major dimensions of Tinto's model and determine the validity of the instrument in identifying the freshly enrolled students' persistence and dropout. The five institutional integration scales that were developed were found to identify the persistent level and dropout for the freshly enrolled students when 14 pre-college characteristics, academic performance, and extracurricular involvement were added to the discriminant analysis.

Bean (1980), who investigated the determinants of student attrition in higher education institutions, found that institutional commitment is the most important variable that influences the decision to drop out from school for both men and women. Furthermore, the other most influential determinant to the institutional commitment is the opportunity (transfer) variable. Thus, the institutional commitment (for example, the quality of services provided by the university) and the external factor (an opportunity that is available outside the university) are equally important.

Later, Bean, and Metzner (1985) developed a conceptual model of the factor affecting dropout syndrome in their research to emphasise student selection for socialisation to certain behaviours and attitudes. The model was estimated by path analysis, and it was found that college grades, institutional fit, and institutional commitment are important predictors of a dropout syndrome. Furthermore, the research indicated that a student's peers are important agents of socialisation.

Kwai (2009) stated a need to recognise the retention model for international students from other cultures and socioeconomic backgrounds since most research concentrates on local students. Therefore, Kwai (2009) investigated the factors influencing retention among international students in two public state-wide four-year university systems. The results showed that the variables that positively influenced the international students' retention into their second year were their spring semester GPA result, credit hours completed, and having a part-time job on campus.

Another research done by Srivastava et al. (2011) to examine the concerns and preferences influencing international graduate students' (IGS) decision to continue their advanced degrees in the US universities found that funding support, university and immigration regulations, and having a good academic advisor were the top three concerns for the students. Meanwhile, the top three influential factors were funding opportunities, ranking of the school, and quality of the faculty members. On the other hand, comparing the retention factors of local and international students, Haverila et al. (2020) found that social integration, study skills, adjustment to college life, extracurricular, and housing arrangement are perceived more important by international students than local students.

In short, studies on the factors that attract new international students are numerous, including those that focused on the issues related to the retention of existing international students. However, retention related to the educational choice motive of currently enrolled international students is still lacking. Furthermore, the two sequential stages of retention, i.e., from the intention to further study to the choice of a country, is yet to be investigated. Thus, this paper aims to address this gap by estimating the effects of educational choice motive on the retention of international students in Malaysia using a sequential approach.

DATA AND METHODS

Data

Data from 753 international students currently studying in Malaysian universities in the last semester of their undergraduate or master's degree programs were obtained in 2013¹. A combined stratified random sampling and quota sampling were applied. First, the stratified sampling randomly involved selecting the university in the five strata of public university (research, comprehensive, and focus) and private university (private and foreign university branch). The Universiti Malaya (UM), Universiti Islam Antarabangsa Malaysia (UIAM), Universiti Utara Malaysia (UUM), Multimedia University (MMU), and University of Nottingham Malaysia (UNIM) were selected randomly from each of the five strata respectively.² Second, the quota sampling design was implemented. The quota was imposed into the diploma, bachelor, and master's degree programmes, proportionately based on the number of international students at the selected universities. The combined sampling design ensured the sample representativeness, i.e., the sample consists of international students from various universities in Malaysia.

A self-administered questionnaire was employed to collect the data. The questionnaire solicits the respondents' socio-demographic information (such as age, gender, family background), intention to study further, and the next destination choice to study further. First, the students were asked, "Do you have the intention to further your study after finishing your current level of study?" Second, those who answered "Yes" would answer the following question, "Would you like to continue your Bachelor/Master/PhD in Malaysia?"

The educational choice motive was categorised into a university environment (8 items), university service (6 items), academic quality (4 items), education cost (6 items), information & guidance (5 items), social (5 items), and regulations (2 items) (see Appendix 1 for detail). The items were measured on a seven-point rating scale, with 1 being "strongly disagree" and 7 "strongly agreed". The respondent's scores on the items were averaged for each category.

Method

Since the dependent variable, retention, was measured using two sequential questions (intention and retention), a sequential logit model was used. Figure 1 presents the framework of the sequential approach to model retention.

¹ The "currently study" refers to the year 2013. This is the best available data for us. Although the data appear outdated, they are still relevant since the structure of international student community in Malaysia is largely unchanged during the past few years.

² There are 44 universities in Malaysia. Five universities (UM, UIAM, UUM, MMU, and UNIM) represent each of the five major clusters in the university sector in Malaysia: research university (UM), comprehensive university (UIAM), focus university (UUM), local private university (MMU), and foreign branch private university (UNIM). Thus, the sample meets minimal representativeness.



Figure 1. The sequential approach of retention model

The respondents faced two transition stages in the retention model. First, the students had to choose to study further or not. Second, if they chose to study further, then they had to indicate whether they would choose to study in Malaysia or not. If the two transition processes are independent, one could estimate a logit model to the second stage based on the sub-sample that consists of those who choose to study further. However, this was not likely as the choice on the two transition stages was made by similar respondents.

Assume that there are two underlying variables that represent the tendency to choose to study further (first stage transition, intention to study further or not) and to choose Malaysia (final stage of transition, study further in Malaysia or not), y_{1i}^* and y_{2i}^* , respectively. The underlying variables are also assumed to be related to a set of covariates linearly, x_{1i} and x_{2i} respectively. Thus, we obtain:

 $y_{1i}^* = x_{1i}' \beta_{1i} + u_{1i}$ (1) where $y_1^* = \text{underlying tendency to further study}$ $X_1 = \text{independent variables}$ $u_1 = \text{error terms}$

The observed outcomes on choice (y_{1i}) as reported by the respondents are related to the y_{1i}^* as follows:

$$y_{1i} = \begin{cases} 1 & if \ y_{1i}^* > 0 \\ 0 & if \ y_{1i}^* \le 0 \end{cases}$$
(2)

On the other hand, the final stage transition could be modelled similarly as follows: $y_{2i}^* = x'_{2i}\beta_{2i} + u_{2i}$ (3) where $y_2^* =$ underlying tendency to choose Malaysia $X_2 =$ independent variables $u_2 =$ error terms

The observed outcomes on choice (y_{2i}) as reported by the respondents are related to the y_{2i}^* as follows:

$$y_{2i} = \begin{cases} 1 & \text{if } y_{2i}^* > 0\\ 0 & \text{if } y_{2i}^* \le 0 \end{cases}$$
(4)

A sequential approach regards the two transitions as a sequence of stages. The choice of the second (final) stage is nested in the choice of the first stage to reflect the decision trees, as shown in Figure 1. The maximum likelihood estimated method is employed to estimate the transition probabilities and then the predicted probabilities for retention, i.e., choose Malaysia for those who have chosen to study further.

RESULTS AND ANALYSIS

Descriptive statistics analysis I: Sample characteristics

Table 1 and 2 present the sample characteristics. Table 1 shows that the majority of the international students are male (65.12%). The highest number of international students are from Middle Eastern countries (31.89%), followed by African countries (24.25%), Southeast Asian countries (19.60%), East Asian countries (11.96%), and other regions (12.29%). Relating to the levels of study, more than half of them (53.65%) are for a bachelor's degree, and the remaining for a master's degree. More than half of their fields of study are social sciences, business, and law (54.98%).

On average, the international students are around 25 years old and have been studying in Malaysia for around 43 months. Their academic achievement is impressive, averaging at 3.16 (out of 4). Relating to the educational choice motive, the international students perceive that the top three factors that affect their choice of educational destination are university environment (4.9157), social environment (4.5103), and education cost (4.4305). This reflects the importance of both the consumption and investment motive. Relatively, the consumption motive seems more important than the investment motive.

1		Freq.	Percent
Gender	Male	392	65.12
	Female	210	34.88
Hometown	East Asia	72	11.96
	South East Asia	118	19.60
	African	146	24.25
	Middle East	192	31.89
	Others (India, North American, Europe)	74	12.29
Level of			
study	Bachelor	323	53.65
	Master	279	46.35
Field of study	Education, Religious, Arts & Philosophy	50	8.31
	Social Sciences, Business & Law	331	54.98
	Information Technology & Communication	93	15.45
	Engineering, Manufacturing, Architecture	112	18.60
	Health Sciences & Medicine	16	2.66

Table 1

Sample	Characteristics	(<i>Categorical</i>)
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		

		Std		
	Mean	Dev.	Min	Max
age	25.50	3.73	19	50
CGPA	3.16	0.41	2	4
Month in Malaysia	43.45	18.37	7	96
University environment	4.9157	1.0335	1	7
University service	4.3486	1.1695	1	7
Academic quality	4.3592	1.2236	1	7
Education cost	4.4305	1.0838	1	7
Information and guidance	4.4223	1.0499	1	7
Social environment	4.5103	1.1296	1	7
Regulation	3.8206	1.5088	1	7

Table 2Sample Characteristics (Continuous/Discrete)

#### Descriptive statistics analysis II: Probability of retention in Malaysia

Table 3 presents the two sequential stages of Figure 1 using a simple percentage. Around 62% of the international students have expressed their intention to study further. Around 68% of them choose Malaysia as the destination country. Thus, the simple retention probability of the currently enrolled international students is 0.4186, i.e., we expect 41.86% of them will remain in Malaysia.

Table 3Retention in Malaysia (Overall)

	Freq.	Percentage
Intent to study further?		
Yes	370	61.46
No	232	38.54
If intent, study further in Malaysia?		
Yes	252	68.11
No	118	31.89

To gain further insight, we calculate the retention probability by the sample characteristics (see Table 4 and 5). From Table 4, among the currently enrolled international students, male (44.39%) are more likely to remain than females (37.14%). Those from African countries are more likely to remain (56.85%) than those from other regions. Master's degree students (46.95%) are more likely to remain than degree students (37.46%). Among the different fields of study, students of health sciences and medicine are the most likely to remain (68.75%).

	Intent t	o further	If intent	, further	Retain in	
	study?		Malaysia?		Malaysia	
	Yes	No	Yes	No	(1) x (3)	
	(1)	(2)	(3)	(4)	(5)	
Gender						
Female	58.10	41.90	63.93	36.07	37.14	
Male	63.27	36.73	70.16	29.84	44.39	
Hometown						
East Asia	45.83	54.17	60.61	39.39	27.78	
South East Asia	50.85	49.15	56.67	43.33	28.82	
African	73.97	26.03	76.85	23.15	56.85	
Middle East	66.15	33.85	67.72	32.28	44.80	
Others (India, North American, Europe)	56.76	43.24	69.05	30.95	39.19	
Levels of study						
Bachelor	59.75	40.25	62.69	37.31	37.46	
Master degree	63.44	36.56	74.01	25.99	46.95	
Fields of study						
Education, Religious, Arts & Philosophy	70.00	30.00	71.43	28.57	50.00	
Social Sciences, Business & Law	61.03	38.97	66.83	33.17	40.79	
Information Technology & Communication	67.74	32.26	66.67	33.33	45.16	
Engineering, Manufacturing, Architecture	51.79	48.21	67.24	32.76	34.82	
Health sciences & Medicine	75.00	25.00	91.67	8.33	68.75	

Table 4Retention in Malaysia (by Categorical Characteristics)

We compare the two extremes for the sample characteristics of discrete or continuous scale, i.e., the bottom 25th percentile (bottom 25%) versus the top 25th percentile (top 25%). From Table 5, those who are older (62.38%), high academic performance (49.63%), and lower duration of stay in Malaysia (51.11%) are more likely to remain in Malaysia. By the educational choice motive, those who perceive factors of university services (51.08%), academic quality (44.88%), education cost (45.87%), information and guidance (40.54%), and social environment (49.66%) as being more important are more likely to remain and pursue higher degree studies in Malaysia. However, the retention probability is almost equal for the regulation factor between the bottom and top 25%.

	Intent to further study?		If intent, further study in Malaysia?		Retain in Malaysia
	Yes	No	Yes	Yes	No
	(1)	(2)	(3)	(1)	(2)
Age	(1)	(-)	(0)	(1)	(=)
Bottom 25%	54.82	45.18	57.41	42.59	31.47
Top 25%	76.24	23.76	81.82	18.18	62.38
CGPA					
Bottom 25%	60.00	40.00	62.12	37.88	37.27
Top 25%	66.67	33.33	74.44	25.56	49.63
Month in Malaysia					
Bottom 25%	72.59	27.41	70.41	29.59	51.11
Тор 25%	49.67	50.33	68.42	31.58	33.98
University environment					
Bottom 25%	53.01	46.99	54.55	45.45	28.92
Top 25%	74.31	25.69	76.64	23.36	56.95
University services					
Bottom 25%	59.64	40.36	53.54	46.46	31.93
Тор 25%	60.43	39.57	84.52	15.48	51.08
Academic quality					
Bottom 25%	64.32	35.68	56.30	43.70	36.21
Top 25%	60.63	39.37	74.03	25.97	44.88
Educational cost					
Bottom 25%	63.37	36.63	61.47	38.53	38.95
Top 25%	63.16	36.84	72.62	27.38	45.87
Information & guidance					
Bottom 25%	62.15	37.85	58.18	41.82	36.16
Top 25%	60.81	39.19	66.67	33.33	40.54
Social					
Bottom 25%	62.72	37.28	53.77	46.23	33.72
Top 25%	63.09	36.91	78.72	21.28	49.66
Regulation					
Bottom 25%	69.80	30.20	63.83	36.17	44.55
Тор 25%	64.15	35.85	69.12	30.88	44.34

Table 5Retention in Malaysia (Bottom 25% versus Top 25%)

### **Estimated sequential logit model**

Table 6 presents the estimated sequential logit model (odds ratio). The estimated model is found to have high goodness of fit with the sample, as shown by the p-value of the overall fit test that is almost equal to zero. The first model represents the probability of intent to study further, i.e., Prob (further study). The second model represents the probability of retention, given that (conditional on) being intent to study further, i.e., Prob (Malaysia | further study).

	Prob (further study)		Prob (Malaysia   further study)	
	Odds ratio	P-value	Odds ratio	P-value
Male	0.8668	0.5080	1.0766	0.7920
Age	1.0552	0.1710	1.0623	0.2500
CGPA	1.1254	0.6460	1.0738	0.8390
Country of origin: ^{3a}				
East Asia	0.4324	0.0090***	0.6970	0.4250
South East Asia	0.3489	0.0010***	0.4914	0.0740*
African	0.8380	0.5330	1.4255	0.3020
Other coutries	0.5964	0.1170	0.9567	0.9190
Levels of study: ^{3b}				
First degree	1.4078	0.1950	1.3420	0.4530
Fields of study: ^{3c}				
Edu, Religion, Art, Philosophy	2.8204	0.0180**	1.6171	0.3880
Social Scs, Business, Law	1.3456	0.2520	1.0373	0.9200
ICT	1.6974	0.1080	0.7954	0.5980
Health, Medicine	1.0279	0.9740	1.0852	0.9470
Educational choice motive: ⁴				
University environment	2.3160	0.0000***	1.0309	0.8680
University service	1.0562	0.7030	1.4977	0.0180**
Academic quality	0.8041	0.0610*	1.1223	0.3900
Education cost	0.8717	0.2270	0.9405	0.6430
Information & guidance	0.9103	0.5150	0.8775	0.4610
Social environmeny	0.7199	0.0140**	1.0707	0.6730
Regulation	0.9045	0.2010	1.0754	0.4460
_cons	0.1762	0.2180	0.0352	0.0970*

Table 6Estimated Sequential Logit Model

Note:

1. ***, **, and * represents 1%, 5% and 10% level of significance.

2. Log likelihood value = -525.58124; Overall fit test (LR test) with a p-value of almost equal to zero.

3. Comparison group: a. Middle East countries. b. master's degree. c. Engineering, Manufacturing, Architecture.

4. Educational choice motive: the variables represent the average scores of the items for each category. See Appendix 1 for the items.

By a simple percentage calculation, gender, age and CGPA are found to have a substantially higher probability of retention (see Table 4 and 5) even though the effect of controlling other variables is insignificant. Thus, this highlights the importance of regression analysis. For the probability of intent to study further, the significant determinants are found to be (a) the country of origin (where the students from Middle Eastern countries are more likely to study further than those from East Asia and South-East Asian countries), (b) fields of study (where students of education, religions, art and philosophy are more likely to further their study), and (c) educational choice motive. The university environment is found to be the most significant. The more favourable the student perception of the university environment, the more likely they will study further.

On the probability of retention, students from the Middle East are more likely to remain than those from South East Asia. The fields of study, gender, age, and CGPA are found to have no significant effects on the probability of retention. Among the educational choice motives, only the university service has a significant and positive influence on the probability of retention. The others, including education cost, are found to be insignificant in affecting the retention of international students.

## **DISCUSSIONS AND CONCLUSION**

Using a sample of the currently enrolled international students in Malaysia, this paper examines the probability of retaining international students in Malaysia. This paper contributes to this strand of literature by using a sequential approach in addressing retention. The descriptive statistical analysis results show that the chance of retention is at around 0.4186. That is, we expect 41.86% of the international students will remain in Malaysia. In comparing the bottom 25th percentile and top 25th percentile, university services, academic quality, education cost, information and guidance, and social skills appear to play an important role in improving the chance of retention. The results of regression analysis reveal that the probability of retention is affected significantly by the country of origin and university service. Education cost has been found to have no significant influence. Thus, the consumption motive (represented by the university environment, service, and academic quality) is found to dominate the investment motive (represented by education cost) in retention.

The university service is measured by the timely and accurate information given by the administrative staff and support systems of the international office and other departments to students. Evidently, good communication skills and service quality of the administrative staff are important. This can be achieved by encouraging them to attend training in communication skills, English language or other international languages, and problem-solving skills so that they can handle international students better. Furthermore, an effective support system should be developed to reduce the bureaucracy within and across departments, for example, by utilising the strengths of information technology to provide an efficient service to students.

In addition, the efficiency of government departments that deal with international students should be further enhanced. For example, the Malaysian authorities may further enhance the services provided by the Education Malaysia Global Service Centre (EMGS), such as the handling of visa application to Malaysian higher education institutions, the renewal of student visa for the currently enrolled international students, and the management of international student welfare. Since the establishment of EMGS, its efficiency as a one-stop centre has been questioned. Many international students have complained about delayed visa renewal that could take more than a few months without any valid reason given. This may increase the risk of students being detained by the police because their visa is already expired, and they do not have valid proof of their student status (Kulasagaran, 2014).

The need for the Malaysian government to look into this matter is critical, as the delay caused by EMGS may result in the currently enrolled international students switching to another country for their advanced study. Coordination among universities and government agencies needs to be further enhanced to manage international students effectively. A smart collaboration, including information sharing between the government agencies, such as EMGS and the immigration department and the higher education institutions, should be remodelled to enhance the efficiency in managing the admission procedure regarding student visa applications or visa renewal (Ministry of Education Malaysia, 2015). Pertaining to this issue, the Malaysian education blueprint (higher education) has also highlighted the government's initiatives to improve further, such as ensuring

visa duration matches the study duration for postgraduate students and giving a special endorsement on visa renewal for high achievers.

There are a few caveats on the above findings. First, we use data of 2013. Although it is the best available data for us, the characteristics of international students in Malaysia might change, especially due to the Covid-19 pandemic. Second, the sample is based on international students from five universities. The sample does not represent other universities. Future studies are suggested to re-validate the findings of the present study using recent data that include the effects of the Covid-19 pandemic and international students from other universities.

## ACKNOWLEDGEMENT

We would like to thank Universiti Utara Malaysia for financially supporting this study through its PBIT (Penyelidikan Berkumpulan Impak Tinggi) research grant (S/O code: 12618). Thanks are also due to the anonymous referee whose comments have improved this paper substantially.

#### REFERENCES

- Abd Aziz Ismail, M., & Doria Abdullah. (2014). Malaysia: Becoming an Education Hub to Serve National Development. In J. Knight (Ed.), *International Education Hubs* (pp. 101–119). Dordrecht: Springer Netherlands. <u>http://doi.org/10.1007/978-94-007-7025-6</u>
- Ashraful Azam, K. & Ahasanul, H. (2018). Factors affecting international students' level of satisfaction towards selected public higher learning institutions in Malaysia. *International Journal of Education and Knowledge Management*, 1(3), 1-19.
- Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, 12(2), 155–187. <u>http://doi.org/10.1007/BF00976194</u>
- Bean, J. P., & Metzner, B. S. (1985). A Conceptual Model of Nontraditional Undergraduate Student Attrition. *Review of Educational Research*, 55(4), 485–540. <u>http://doi.org/10.2307/1170245</u>
- Chien, Y.-Y. G. (2015). International Postgraduate Students in Britain: Reasons for Studying Abroad and Issues Related to Adjustment. *International Journal of Technology and Inclusive Education*, 5(1).

http://www.universitiesuk.ac.uk/highereducation/Documents/2012/FuturesForHigherEducation.pdf

- Haverila, J.M., Haverila, K. & McLaughlin, C. (2020). Variables affecting the retention intentions of students in higher education institutions: a comparison between international and domestic students. *Journal of International Students*, 10(2), 358-352.
- Hazlina, A. (2020). *Raising foreign student enrolment post-Covid-19*. New Straits Times. Online news. https://www.nst.com.my/education/2020/07/606823/raising-foreign-studentenrolment-post-covid19#:~:text=%22The%20target%20for%202025%20is, and%20revitalises%20the%20nation's%20economy.
- Knight, J. (2011). Education Hubs: A Fad, a Brand, an Innovation? Journal of Studies in International Education, 15(3), 221–240. <u>http://doi.org/10.1177/1028315311398046</u>
- Kulasagaran, P. (2014, February). *Visa worries*. The Star Online. http://www.thestar.com.my/news/education/2014/02/09/visa-worries
- Kwai, C. K. (2009). Model of International Student Persistence: Factors Influencing Retention of International Undergraduate Students at Two Public Statewide Four-Year University Systems. University of Minnesota.
- Lee, C. F. (2013). An Investigation of Factors Determining the Study Abroad Destination Choice: A Case Study of Taiwan. *Journal of Studies in International Education*, 18(4), 362-381. <u>http://doi.org/10.1177/1028315313497061</u>
- Menon, M. E. (1998). Factors influencing the demand for higher education : The case of Cyprus. *Higher Education*, 35(3), 251–266.
- Migin, M. W., Falahat, M., Yajid, M. S. A., & Khatibi, A. (2015). Impacts of Institutional Characteristics on International Students' Choice of Private Higher Education Institutions in Malaysia. *Higher Education Studies*, 5(1), 31-42.
- Ministry of Education Malaysia. (2015). *Malaysia Education Blueprint 2015-2025 (Higher Education)*. Kementerian Pendidikan Malaysia. <u>http://hes.moe.gov.my/event/</u>
- Nachatar Singh, J. K., Schapper, J., & Jack, G. (2014). The Importance of Place for International Students' Choice of University: A Case Study at a Malaysian University. *Journal of Studies in International Education*, 18(5), 463-474. <u>http://doi.org/10.1177/1028315314523990</u>
- Pascarella, E. T., & Terenzini, P. T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *The Journal of Higher Education*, 51(1), 60–75. <u>http://doi.org/10.2307/1981125</u>

- Srivastava, S., Srivastava, A., Minerick, A., & Schulz, N. (2011). Recruitment and retention of international graduate students in US universities. *International Journal of Engineering Education*, 26(6), 1561–1574.
- Tinto, V. (1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research. *Review of Educational Research*, 45(1), 89–125. <u>http://doi.org/10.3102/00346543045001089</u>
- Viggo, S. (2019). Malaysia to recalibrate its strategy as 200k int'l student target by 2020 looks unlikely. The PIE News. Online News. <u>https://thepienews.com/news/malaysia-to-</u> recalibrate-strategy-as-200000-target-looks-out-of-reach/

# **APPENDIX 1: Self-perceived educational choice motives**

The 7-point rating scale (1 being "strongly disagree", and 7 being "strongly agree") is used to measure the perceptions of the international students towards various factors related to the university that they are currently enrolled in particular and Malaysia in general. These factors are

No.	University environment
1	My current university has a comfortable study environment
2	I am satisfied with my current university.
3	I am proud of my current university in Malaysia
4	The facilities in library such as books, other material and information that I
	need to complete my assignments are enough.
5	I am satisfied with the security provided by my current university.
6	I am able to adapt to the weather in Malaysia
7	The facilities provided in the lecture hall are in good quality
8	The computer labs in my university are very up-to-date and equipped with
	high-technology instruments.
No.	University service
1	The administrative staff from other departments are helpful and friendly
2	The information provided by the international office/department is timely and
	accurate
3	The information provided by other departments is timely and accurate.
4	The administrative staffs from international office/departments are helpful and
	friendly.
5	The facilities provided in the cafeteria are clean and in good quality
6	The facilities provided in the student hostels are in good quality
	· · · · · · ·
No.	Academic quality
1	Lecturers are highly qualified in their field
2	Lecturers are always well-prepared when they give lectures.
3	Lecturers are internationally known in term of their publications
4	Lecturers are fluent in English language
No	Education cost
<u> </u>	The public transportation cost charged in Malaysia is reasonable
1	The prices of food and groceries sold in Malaysia is reasonable.
2	The other utility evenenditure such as electric hill share hill & etc in Melevice.
5	is reasonable
4	Is reasonable.
4	The prices of books and study equipment solu in Malaysia are reasonable.
5	The accommodation lees charged are reasonable.
0	The function nees charged by Malaysia nighter education institutions are
	reasonable
No	Information & Guidance
1	The information provided by internet regarding Malaysia is informative and
T	accurate
2	The information provided by other media regarding Malaysia is informative
-	and accurate.

3	The information provided by print media (newspaper, magazine, etc)
	regarding Malaysia is informative and accurate.
4	The information provided by <i>Education Malaysia</i> (a government agency)
	regarding Malaysia is informative and accurate.
5	Malaysian institutions are involved in a lot of the well-known education
	expos/fairs in my home country.

No.	Social
1	Malaysia is a very peaceful and safe country.
2	I am able to adapt to the Malaysian lifestyle.
3	Malaysians are very friendly and helpful.
4	Malaysians can speak fairly good English.
5	I believe there is no racial discrimination in Malaysia.
No.	Regulations
1	I am allowed to take up part time job while studying in Malaysia.
2	I am encouraged to apply for permanent residential status after my graduation.