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## **Is decision-making process a mediator of the relationship between economic factor and international academic destination?**

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**Abstract:** International students are the bedrocks of the global higher education market. Thus, worldwide, higher education institutions (HEIs) focus most international marketing efforts on understanding the complexities surrounding this student market. Recent studies on international higher education reveal the choices made by this student cohort and a wide variety of factors influencing such selections. This present study focuses on a student decision that is made under a set of options. Using structural equation modelling (SEM), this study aims to investigate the relationships of economic factor and decision-making process with the choice of international academic destination. Results, conclusions, and recommendations are discussed.

**Keywords:** economic factor; the decision-making process; choice of international academic destination; international students; SEM; structural equation modelling; student market; international education; higher education; HEIs; higher education institutions.

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## 1 Introduction

International students are the bedrocks of the global higher education market. This market segment can change and strengthen the economic status of nations around the world (Ahmad and Shah, 2018; Wei, 2013). Thus, worldwide, higher education institutions (HEIs) exert much efforts to better understand the complexities surrounding this student market. To increase market share in the international student market, most HEIs focus on understanding how these students decide for overseas study. Recent studies on international higher education reveal the choices made by this student cohort (i.e., choice of country, university, and program) and the wide variety of factors influencing such selections (see, Paulino and Castaño, 2019). Among the factors, economic was mentioned as one of the most influential. The relationship between the economic factor and decision-making process and choice of academic destination has been investigated for years. Recent studies found that economic factor is positively linked with the choice of academic destination. Many studies revealed that the economic factor is associated with the decision-making process. Most of these studies utilised undergraduate students as primary respondents of the study. While the literature on academic destination choice is growing, limited studies investigate the decision-making

process of international students, especially the decision-making of postgraduate students. This present study contributes to the limited literature of international students' decision-making process by investigating the relationships of economic factor and decision-making process with the choice of academic destination using international postgraduate students in the Philippines as respondents of the study. This study is vital in the formulation of marketing strategies useful in increasing the HEIs' shares in the international student market.

## **2 Methods**

A total of 242 international students, enrolled during the academic year 2018–2019, from the 21 universities in the Philippines, served as respondents of the present study. The proportions of male and female respondents are almost equal (49% male and 51% female), a vast majority are single (88%), enrolled in the masters (81%) and doctorate (19%) programs. The respondents, on average, are 31 (SD = 6.89) years old. All the variables in the present study were measured using a self-administered survey questionnaire which was developed by the researchers. The choice of academic destination, being the dependent variable, is a single item in the questionnaire that asked the international students their primary criterion in choosing academic destination whether country, university or program. The economic factor, being the independent variable, consisted of thirteen (13) items/question-statements adapted from Paulino and Castaño (2019) which were measured using a five-point ordinal response option ranging from 1 (not influential) to 5 (extremely influential). The decision-making process, being the moderator of the study, consists of five causal stages such as “*Problem recognition (Stage 1)*” causes “*Information Search (Stage 2)*” which causes “*Evaluation of alternatives (Stage 3)*” which causes “*Enrolment decision (Stage 4)*” which causes “*Post-enrolment behaviour (Stage 5)*”. Each stage of the decision-making process consisted of five (5) items/statements which were measured using the five-point response options ranging from 1 (strongly disagree) to 5 (strongly agreed). Both item-content validity indices (I-CVI) and scale-content validity indices (S-CVI) for economic factor and decision-making process were excellent based on the criteria of Polit and Beck (2006). The convergent and discriminant validity and reliability of both economic factor and the decision-making process were adequate. The convergent and discriminant validity and reliability statistics are presented in the next section as part of the PLS-SEM results.

## **3 Results**

### *3.1 Summary statistics of the variables of the study*

The dependent variable of the study is the choice of academic destination with three nominal categories (i.e., country, university, and program). Out of a total of 242 international postgraduate students who participated the survey, 58.2% ( $n = 140$ ) chose the program as their primary criterion of choosing the academic destination, while the 30.4% ( $n = 74$ ) chose the country and the rest, representing 11.4% ( $n = 28$ ), chose the university. The economic factor which serves as the independent variable yielded a grand

mean score of 3.55 (SD = 0.79). The extent of decision-making among the international postgraduate student respondents can fall within high to very high.

### *3.2 Choice of academic destination model*

The relationship among the economic factor, decision-making process, and choice of academic destination was tested utilising the partial least squares-structural equation modelling (PLS-SEM) using the WarpPLS 6.0 (Kock, 2018). PLS-SEM requires less stringent assumptions about sample size, normality, and measurement levels of the observed variables (Hulland, 1999). Following Hulland's suggestion in conducting PLS-SEM, which has been used by many researchers (e.g., Dimaunahan and Amora, 2016), the gathered data were subjected to the two-stage analysis:

- the measurement model was examined to assess the reliability and convergent and discriminant validity of the variables
- the structural model was evaluated to investigate the relationship of the variables under study.

The data reveal that the item loadings are statistically significant and greater than the 0.5 cut-offs (Kock, 2018); no cross-loading items (0.00–0.44); the average variance extracted (AVE) for each variable is higher than 0.5 (Fornell and Larcker, 1981) and the composite reliability and Cronbach's alpha are higher than 0.7 (Fornell and Larcker, 1981; Nunnally, 1978) or greater than 0.60 (Nunnally and Bernstein, 1994), indicating that the measures of the variables have convergent validity. Following Fornell and Larcker's (1981) criterion, it can be inferred that all the variables have discriminant validity since the square roots of the AVE are greater than the correlations of the variables. The aforementioned convergent validity, discriminant validity, and reliability statistics suggest that the measurement model is adequate for subsequent structural model estimation. Subsequent analysis of the structural component of the PLS-SEM can be pursued since the goodness of fit and quality indices of the model such as average path coefficient, average R-squared, average adjusted R-squared, average block VIF, average full collinearity VIF, and Tenenhaus GoF are within the acceptable range.

### *3.3 Direct effects of variables on the other variables*

The data in Table 1 shows that the sequential relationships between the five stages of the decision-making process are statistically significant. Based on Cohen's (1988) rule of thumb about effect size, the effect of Stage 1 to Stage 2 is between medium to large ( $f^2 = 0.27$ ) extent, while the effect of Stage 2 to Stage 3 is at a medium ( $f^2 = 0.17$ ) extent. Also, the extent of the effect is large for Stage 3 to Stage 4 ( $f^2 = 0.43$ ) and Stage 4 to Stage 5 ( $f^2 = 0.46$ ). Further analysis reveals that the economic factor (econ) significantly affects #Country ( $\beta = 0.30$ , SE = 0.10,  $p < 0.01$ ) to a small extent ( $f^2 = 0.09$ ). This implies that those with a high perception of economic factor tend to choose a country relative to the program as their primary criterion of choosing an international academic destination. Economic factor, on the other hand, appeared to be insignificantly related to #Univ ( $\beta = 0.15$ , SE = 0.11,  $p > 0.05$ ); that is, among international students, the economic factor is not a significant predictor of choosing a university relative to the program. It can be noted that economic factor predicts significantly Stage 1 ( $\beta = 0.27$ , SE = 0.11,  $p < 0.01$ ,

$f^2 = 0.04$ ) and Stage 3 ( $\beta = -0.23$ ,  $SE = 0.11$ ,  $p < .05$ ,  $f^2 = 0.06$ ), implying that a higher perception about economic factor tends to have a higher perception about needs and motives and a lower perception about evaluation of alternatives. About the effect of each of the stages of decision-making process on choice of international academic destination (#Country and #Univ), it can be noted that only Stage 1 significantly affects #Country ( $\beta = -0.21$ ,  $SE = 0.11$ ,  $p < 0.05$ ,  $f^2 = 0.09$ ) and only Stage 3 significantly affects #Univ ( $\beta = 0.28$ ,  $SE = 0.10$ ,  $p < 0.01$ ,  $f^2 = 0.09$ ). The negative coefficient of Stage 1 to #Country indicates that the higher the perceived problem recognition, the lower the chance that international students choose a country relative to the program as their primary criterion of choosing an international academic destination. Conversely, the lower the perceived problem recognition, the higher the chance that international students choose a country relative to the program. On the other hand, the positive coefficient of Stage 3 to #Univ indicates that the higher the perceived evaluation of alternatives the higher the chance that international students choose university relative to the program as their primary criterion of choosing an international academic destination. Conversely, the lower the perceived evaluation of alternatives the lower also the chance that international students choose a university relative to the program. Figure 1 presents the choice of academic destination model with the path coefficients.

**Table 1** Direct effect of variables on another variable

	<i>Path coefficient</i>	<i>SE</i>	<i>p-value</i>	<i>f<sup>2</sup></i>
Stage 1 → Stage 2	0.50	0.10	0.000	0.27
Stage 2 → Stage 3	0.40	0.10	0.000	0.17
Stage 3 → Stage 4	0.63	0.09	0.000	0.43
Stage 4 → Stage 5	0.67	0.09	0.000	0.46
Econ → #Country	0.30	0.10	0.002	0.09
Econ → # Univ	0.15	0.11	0.091	0.02
Econ → Stage 1	0.27	0.11	0.005	0.07
Econ → Stage 2	0.16	0.10	0.068	0.04
Econ → Stage 3	-0.23	0.11	0.017	0.06
Econ → Stage 4	-0.17	0.11	0.059	0.06
Econ → Stage 5	0.05	0.11	0.331	0.01
Stage 1 → #Country	-0.21	0.11	0.025	0.09
Stage 2 → #Country	0.05	0.11	0.321	0.00
Stage 3 → #Country	-0.02	0.11	0.433	0.00
Stage 4 → #Country	-0.03	0.11	0.386	0.00
Stage 5 → #Country	0.15	0.11	0.089	0.01
Stage 1 → #Univ	0.05	0.11	0.340	0.01
Stage 2 → #Univ	-0.12	0.11	0.129	0.01
Stage 3 → #Univ	0.28	0.10	0.005	0.09
Stage 4 → #Univ	0.11	0.11	0.165	0.03
Stage 5 → #Univ	-0.01	0.11	0.479	0.00

$f^2$  is the Cohen's (1988) effect size coefficient: 0.02 = small, 0.15 = medium, 0.35 = large.

3.4 Indirect effects of the economic factor on choice through DMP

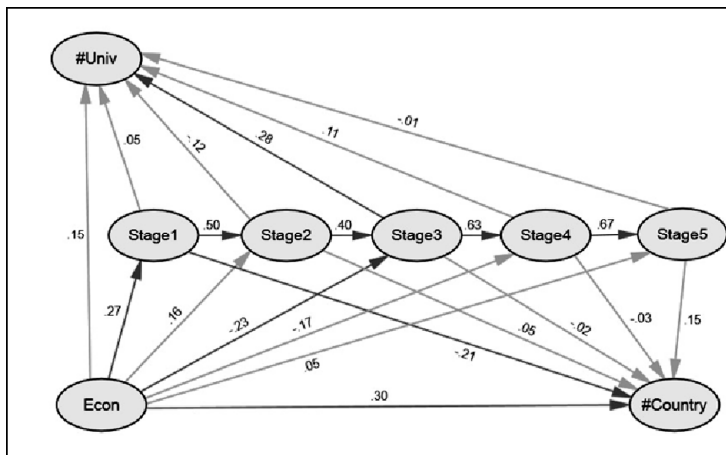
In this part of the study, the indirect effects of the economic factor on choice through each of the stages of the decision-making process were investigated. Table 2 shows that Econ indirectly affects #Country through Stage 1 ( $\beta = -0.057$ ,  $SE = 0.03$ ,  $p < 0.05$ ), implying that economic factor directly affects problem recognition which in turn directly affects country choice relative to the program. Further analysis reveals that econ indirectly affects #Univ through Stage 3 ( $\beta = -0.064$ ,  $SE = 0.03$ ,  $p < 0.05$ ), which implies that economic factor directly affects the evaluation of alternatives which in turn directly affects university choice relative to the program. The other indirect effects are statistically insignificant ( $p > 0.05$ ), indicating that the effect of the economic factor on country choice is not mediated by the other stages of the decision-making process such as Stages 2 to 5. The effect of the economic factor on university choice is not mediated by Stage 1 (problem recognition), Stage 2 (information search), Stage 4 (enrolment decision) and Stage 5 (post-enrolment decision).

**Table 2** Indirect effects of economic factor on choice through decision-making process

	Path coefficient	SE	p-value	f <sup>2</sup>
Econ → Stage 1 → #Country	-0.57	0.03	0.049	0.09
Econ → Stage 2 → #Country	0.008	0.03	0.790	0.01
Econ → Stage 3 → #Country	0.005	0.03	0.868	0.00
Econ → Stage 4 → #Country	0.005	0.03	0.868	0.00
Econ → Stage 5 → #Country	0.008	0.03	0.790	0.01
Econ → Stage 1 → #Univ	0.014	0.04	0.726	0.01
Econ → Stage 2 → #Univ	-0.019	0.04	0.635	0.02
Econ → Stage 3 → #Univ	-0.064	0.03	0.033	0.07
Econ → Stage 4 → #Univ	-0.019	0.04	0.635	0.02
Econ → Stage 5 → #Univ	-0.001	0.04	0.980	0.00

f<sup>2</sup> is the Cohen’s (1988) effect size coefficient: 0.02 = small, 0.15 = medium, 0.35 = large.

**Figure 1** Choice of international education model with the path coefficients



## 4 Discussion

The economic factor is directly influential to the international postgraduate students' choice of the country relative to the program but indirectly influential to their choice of university relative to the program. This result is in line with the findings of previous studies which suggest that economic factors are influential to the international students' choice of academic destination. However, the result challenges previous studies which have considered the economic factors like home countries economic wealth, population, bilateral trade, safety, cost of living and tuition fees, place or distance/proximity, etc. as factors influential to students' choice of academic destination (e.g., Ahmad and Buchanan, 2016; Ahmad and Shah, 2018; Bartham, 2016; Roostika, 2017). Though studies have established the strong connection of economic factors to students' choice, they have overlooked how these different economic factors affect students' decisions when faced with a 'set of choice' (i.e., country, university, program). The result infers that economic sensitive international postgraduate students tend to choose the country over the program as their primary criterion of choosing international academic destination while non-economic sensitive international postgraduate students tend to choose university relative to the program. This result conforms with the study of Hemsley-Brown and Oplatka (2015) which found economic factors like '*price and price sensitivity*' and '*geography*' to affect university choice. However, like other related researches, the study did not reflect the 'set of choice' available to international students.

Not all stages in the decision-making process are directly influential to the choice of international academic destination, only Stage 1 is directly influential to the choice of a country relative to the program while only Stage 3 is directly influential to the choice of university relative to the program. The negative coefficient of Stage 1 to #Country indicates that for international postgraduate students who are more aware of their needs for international education, the chance of choosing a country relative to the program as their primary criterion of choosing an international academic destination is low. Conversely, for international postgraduate students who are less aware of their needs for international education, the chance that they choose a country relative to the program is high. On the other hand, the positive coefficient of Stage 3 to #Univ indicates that the more evaluative the international postgraduate students to their choice of academic destination, the higher the chance that they choose university relative to the program as their primary criterion of choosing an international academic destination. Conversely, the lesser evaluative the international postgraduate students to their choice of academic destination, the lower also the chance they choose a university relative to the program. Contrary with the previous studies which revealed other stages of decision-making process as predictors of choice of international academic destination, for example, the Stage 2 as predictor of choice of higher education institution or university (e.g., Branco Oliveira and Soares, 2016; Hemsley-Brown and Oplatka, 2015), the result of the current study shows that only Stage 1 and Stage 3 foretell international postgraduate students' choice of academic destination. According to Nedelcu and Ulrich (2014), students have seen international programs offered by international higher educational institutions as 'windows' and 'mirrors' (p.90). Hence, most of them consider international higher education as an opportunity. This assertion may suggest that the increasing number of international students worldwide could be attributed to the increasing awareness of students on the benefits of overseas education. So being aware of such benefits, international postgraduate students around the globe now weigh up the

pros and cons of undertaking higher education (Wilkins and Huisman, 2013). This current study's result corroborates that international students nowadays, especially postgraduate students, are becoming more aware of their needs and evaluate the benefits and costs of attending overseas study seriously. As a consequence, their choices for the academic destination are becoming highly individualised which may vary depending on their respective needs and needs' awareness and manners of choice evaluation.

The economic factor is directly influential to Stage 1 and Stage 3. The result shows that international postgraduate students' awareness of their needs and evaluation of alternatives depends on their economic status. The more international postgraduate students' economic sensitivity, the more they are aware of their needs and more evaluative in their alternatives when choosing for the international academic destination. This current study's result agrees with an economic approach in students' decision making wherein the students act as investors and evaluate the benefits and costs of attending overseas study in a particular country destination, educational institution, and study program (Tavares and Ferreira, 2012). The result of this study implies that international postgraduate students are rational or economic men who consider all relevant information in decision making. Since abroad education decisions are high commitment, all pieces of information are outweighed. As rational or self-interested individuals, international postgraduate students balanced the cons and pros of their alternatives. The result suggests that international postgraduate students' economic sensitivity contributes to their belief that the higher the education level of the student, the higher the rate of return to education. Consequently, they are becoming more evaluative regarding their 'set of choice' for the academic destination.

The decision-making process of international postgraduate students influences the effect of the economic factor to the choice of the country relative to the program through Stage 1 and influences the effect of the economic factor to the choice of university relative to the program through Stage 3. This finding implies that the economic status of international postgraduate students affects their choice of the country over program through their awareness of needs for international education and affects their choice of the university over program through their evaluation of alternatives. This result suggests that economic sensitive students will choose the country over the program if they are aware of their needs for international academic destination and will choose university over the program if they are evaluative concerning their alternatives or choices for an international academic destination. Many attempts have been made to explain international students' decision-making process and choice for academic destination relative to motivating factors like economic factor (e.g., Ahmad and Buchanan, 2016); however, the influence of the decision-making process in the effect of economic factor to the choice of academic destination has not been fully explored and examined. Although there exists comprehensive literature on students' choice for international higher education, not much research has been done to examine the students' decision-making process in connection to their economic status and choice of international academic destination. This present study attempts to provide light on these relationships.

## **5 Conclusions and implications**

In contrast with previous studies, this study focused on a student decision that was made under a 'set of options'. Today, as most global HEIs vie on international student



enrollment, understanding their facets of choice becomes more imperative. The number of international student enrollment indicates HEIs' global competitiveness which is relative to segmentation, targeting, and positioning (Barkah and Raharja, 2018). Many education institutions have already adopted various competitive mechanisms and strategies (see, Barusman, 2018; Karsidi et al., 2017; Wamboye et al., 2014). However, a global HEIs can attract even more international students with the proper execution of internationalisation marketing strategies. A sound marketing strategy reflects a keen understanding of the behaviour of international students under rigorous competition. Paramount to this understanding is the explanation of the student's decision-making process. Due to the growing students' awareness and they are becoming more evaluative regarding their available alternatives, this paper suggests that future studies should consider extending this study covering other possible dimensions of international students' decision-making process and choice of international academic destination.

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