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## A STUDY OF SOCIOECONOMIC ATTRIBUTES ON OPEN AND DISTANCE LEARNING IN MALAYSIA

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### ABSTRACT

*In order to achieve competitive advantage, most institutions improve their service and facilities. Open and distance learning pedagogy has been on the upward trend over the years. It provides flexibility that attracts most of its learners who are adult-matured learners with much commitment such as work burden and family commitment. This paper integrated the attributes of the impact of socioeconomic on open and distance learning (ODL) in Malaysia. In this study, we have examined socioeconomic attributes on the open and distance learning mode in Malaysia using the multinomial logit model. The findings revealed that, male respondents with higher income are significant for the programme and facilities offered as compared to female respondents. The attribute of institution reputation too has increasing positive value for both levels for respondents who are single with higher income. While the attribute of facilities offered is significant for male with higher income. The highest level of attribute for programme offered is significant for male respondents in this study.*

**Keywords:** *Open and distance learning, attributes, socioeconomic*

### INTRODUCTION

In a technology-driven world, the open and distance learning (ODL) mode offers flexibility in terms of schedule and location that meets the growing demand of working adults. Rapid changes in the education technology require education providers, particularly private education institutions to have greater awareness and to be in the frontier of educational innovations. Education services offered must consider new innovation and must meet the changing needs of its learners in order for the institutions to stay in highly competitive business world today. In addition, private education providers today use marketing strategies to attract potential learners to their education institutions, such as, advertising, testimonials from alumni, financial incentive such as rebate for early sign-up and friend recommendations. As such a study on the most-sought-after attribute/reasons for potential learners to sign up with an education institutions is important.

While most education providers aim to provide the best infrastructures to meet the demands of their learners, ODL providers face different demands. According to Raghavan, Mohayidin, Chun, Juhari and Mariapan (2015), learning via ODL has its own sets of constraints on its learners such as workload, family responsibilities, time mismanagement, inability to cope with lessons and assignments, programme costs, lack of learning skills, lack of confidence and motivation, inaccessibility to learning resources, hardware and software issues, lecture scheduling, lack of feedback, lack of contact with course mates and faculty, alienation and isolation, lack of student support and services, and a lack of experience and/or training. ODL learners mode are relatively different from conventional learners as these learners are adults who study on part-time basis, with a string of commitment associated with their work, family and society in general. Hence their need for infrastructure has different emphasis. Therefore ODL institutions ought to have some insights on the type of attributes that adult learners seek or demand. Such insights would enable them to invest wisely in appropriate attributes as well as to ensure their sustainability in the market.

### The Research Objectives

The aim of this study is to assess the relationship between socio-economic factors with various levels of attributes for private ODL institutions in Malaysia.

## LITERATURE REVIEW

The trend in education over the past decade shows a shift towards student-centred learning environment. Student-centred concept is based on the constructivist perspective of learning, whereby students construct their own knowledge based on their experience gained (Jonassen, 1991). Vygotsky (1978) highlighted that the idea of learning resembles a type of “social activity”. The three main attributes that are sought by learners are academic programs, facilities on-off campus and financial aid is highlighted in Table 1. Other attributes such as programs issues, tuition fees, duration of studies, distance from house and religion are also perceived as important attributes (Antonoff, 2010; Pop, 2016; Ancheh, Krishnan, Nurtjahja, n.d.; Bhagat, Wu, & Chang, 2016; and Safford & Stinton, 2016).

Table 1: Summary of education provider attributes sought by learners

Author (Year)	Attributes
Brown (1991)	<ul style="list-style-type: none"> <li>• Academic</li> <li>• Social</li> <li>• Finance</li> </ul>
Plank & Chiagouris (1998)	<ul style="list-style-type: none"> <li>• Academic programs</li> <li>• Perceived good job after graduation</li> <li>• Financial aid</li> <li>• Value for money.</li> </ul>
Webb, Ashton, Kelly, & Kamali (1998)	<ul style="list-style-type: none"> <li>• Academic programs</li> <li>• Academic reputation of the institution</li> <li>• Marketability of the degree conferred</li> <li>• Faculty contact time</li> <li>• Accreditation</li> <li>• Campus employment</li> <li>• Financial aid</li> <li>• Placement reputation</li> <li>• Completion time</li> <li>• Library size</li> </ul>

Joseph, Yakhou, & Stone (2005)	<ul style="list-style-type: none"> <li>• Programs issues, academic reputation</li> <li>• Physical aspects</li> <li>• Career opportunities</li> <li>• Geographical location of the institution</li> <li>• Duration of studies</li> </ul>
Antonoff (2010)	<ul style="list-style-type: none"> <li>• Size of the institution</li> <li>• Academic Environment</li> <li>• Academic Offerings</li> <li>• Cost/Availability of Financial Aid</li> <li>• Religion</li> <li>• Ethnicity</li> <li>• Co-education or Single Sex</li> <li>• Student Body Characteristics</li> </ul>
Pop (2016)	<ul style="list-style-type: none"> <li>• Accreditation</li> <li>• Flexibility</li> <li>• Tuition Fees</li> <li>• Personal support and service</li> <li>• Study materials and digital learning environment</li> </ul>
Ancheh, Krishnan, Nurtjahja (n.d.)	<ul style="list-style-type: none"> <li>• Financial attractiveness</li> <li>• Program and course suitability&amp;availability</li> <li>• Ease and flexibility of enrolment procedure</li> <li>• Future ease of employment</li> <li>• Attractiveness of institutions</li> <li>• Quality reputation</li> </ul>
Bhagat, Wu, & Chang, (2016)	<ul style="list-style-type: none"> <li>• Online learning and its effectiveness</li> <li>• Measures of student's perception towards online learning</li> <li>• Instructor characteristics</li> <li>• Social presence</li> <li>• Instructional design</li> <li>• Trust</li> </ul>
Safford & Stinton (2016)	<ul style="list-style-type: none"> <li>• Where and when they study online</li> <li>• Digital study support starts at home</li> <li>• Workplace learning and ICT</li> <li>• Navigating study system</li> </ul>

Choice Experiment (CE) has been increasingly applied for estimating the value of improved environmental quality and valuing natural resources. CE is able to elicit relatively more information from respondents with the possibility of testing internal consistency. CE was used recently to study the trade-offs between the characteristics of transport projects and private goods (Alpizar, Carlsson, & Martinssonet, 2001). CE was also used recently to non-market valuation of environmental goods and services, resource economics and health economics (Bateman, et al., 2002; and Alpizar et al., 2001).

CE involves designing different options with different levels of attributes and characteristics. The respondents were asked to choose their preferred options from a list of given options during the survey. A "status quo" term is always used as a baseline in the questionnaire in order to achieve welfare measure that is consistent with the economic theory. CE had several advantages as compared to the other preference methods and this makes this technique to be popular in other field of studies (Adamowicz, Boxall, Williams, & Louviere,

1998; Layton & Brown, 1998). The non-use or passive use values experienced by individuals are not reflected in market processes as they are derived from attributes of ODL education.

There are three categories of passive-use values that are relevant to ODL education:

- (1) Existence value: individuals value ODL education because it is important
- (2) Altruism value: individuals wish to pay for ODL education for certain attributes provided, or who wish to have the option for future own usage
- (3) Request value: individuals wish have such options for future learners

This model is suitable to be used in non-market goods and services. In this study, it is used because education is a service industry. It has not been used widely in the education or ODL education context. This model assesses the value of each revised attributes in the context of the prospective learners which can be of a significant interest to the education providers.

## RESEARCH METHODOLOGY

The respondents in this study are prospective learners and they were asked with a total of 15 choices (3 options in each question) with different combination of the attributes. A total of 312 respondents were collected; with a total sample of 4680 items was analysed. The attributes and its levels of these ODL institutions need to be defined carefully and as precisely as possible in order to obtain the most accurate answers from the respondents. The attributes in this study are chosen based on previous studies as well as feedback from several academicians regarding this matter. In addition, the level for each attribute was determined by interviewing several experts from the ODL institutions. CE estimates  $\beta_i$  values from the following equation:

$$V_{ij} = \beta_1 X_{1j} + \beta_2 X_{2j} + \dots + \beta_i X_{ij}.$$

Where  $V$  = Willingness to pay,  $\beta_1, \beta_2, \dots, \beta_k$  are related coefficients on the main attributes  $X_1, X_2, \dots, X_k$ .

The estimated  $\beta_i$  value indicates the effect on the utility of a change in the levels of each attribute. For example,  $\beta_1$  shows the effect on utility of a change in attribute  $X_1$ . The price or cost attribute and the marginal change in an attribute is typically derived by dividing the value of each non-monetary attribute,  $\beta_a$  by the value of the price attribute,  $\beta_c$ . (Hanley & Barbier, 2009).

### Definition of Attributes' Levels

The attributes were identified from previous studies and after discussions with several academicians from private ODL education institutions. Three attributes and its associated levels were defined, namely, programs offered, available facilities and reputation of the university. The first two attributes were obtained from previous studies (Brown, 1991; Plank & Chiagouris, 1998; Webb, Ashton, Kelly, & Kamali, 1998). Meanwhile the third attribute was identified from the discussions with ODL academics. ODL learners are working adults, whereby the financial aid often is not a viable attribute. Therefore, the reputation of the university was selected instead. The selected attributes and associated levels are shown in Table 2. The status quo of the attribute levels of the private ODL institutions in Malaysia is indicated Table 2.

Table 2: Attributes and associated attribute levels

Attributes	Attribute Levels
Reputable programs offered	Less satisfactory* Satisfactory Very satisfactory
Facilities offered (student support, internet speed, library, practical facilities such as laboratory and kitchen)	Not satisfactory* Less satisfactory Satisfactory
Reputation of the institution	Less satisfactory* Satisfactory Very satisfactory
Total amount paid per semester	RM1850* RM2050 RM2250 RM2450

\* Refer to status quo or current status of the selected attributes of ODL education institutions in Malaysia.

#### *Programme offered*

The number of reputable programmes offered. The attribute levels of the programmes offered are as follows.

*Less satisfactory:* Did not meet the programmes and syllabus demanded by prospective students

*Satisfactory:* Fairly meet the programmes and syllabus demanded by prospective students.

*Very satisfactory:* Meet most of the programmes demanded by prospective students.

#### *Facilities offered*

Facilities offered refer to the various facilities offered by the institutions to their students such as speed of internet, library, student support, practical skills facilities such as laboratory and kitchen.

*Not satisfactory:* Fail to meet the services needed by the prospective students

*Less satisfactory:* Meet the some of the services needed by the prospective students.

*Satisfactory:* Meet all the services needed by the prospective students.

#### *Reputation of the institution*

Reputation and image of the institution refers to establishment and reputation of the institution over the years.

*Less satisfactory:* Fail to project as a reputable institution

*Satisfactory:* Projected as a fairly reputable institution

*Very satisfactory:* Projected as a highly reputable institution

Total Fees Paid per semester: RM1850  
RM2050  
RM2250  
RM2450

Table 3 below shows a brief descriptive analysis of the main attributes in the CE multinomial logit.

Table 3: Descriptive analysis of main attributes

<b>Variables</b>	<b>Expected Sign</b>
<b>Programme Offered</b>	
Less Satisfactory	+
Satisfactory	
Very Satisfactory	
<b>Facilities Offered</b>	
Not Satisfactory	+
Less Satisfactory	
Satisfactory	
<b>Institution Reputation</b>	
Less satisfactory	+
Satisfactory	
Very Satisfactory	
<b>Fees per semester</b>	
RM1850	
RM2050	-
RM2250	
RM2450	

There are three options being presented to the respondents. Two of the options are higher levels of attributes with higher fees being paid; while the third option is always the status quo level of the attributes with the lowest fees cost. Different options were presented to respondents, distinguished by their attributes and associated cost fees. Option A and Option B entailed various combinations of better ODL education attributes levels with higher fees per semester, while Option C is the current situation (lower levels of attributes with current cost fees). The general econometric model was derived as below:

$$U = \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon_0$$

Where  $U$  = Utility level obtained,  $\varepsilon_0$  = error term,  $\beta_1, \beta_2, \dots, \beta_k$  are related coefficients on the main attributes  $X_1, X_2, \dots, X_k$ .

## RESULTS AND DISCUSSIONS

A summary of the socio-economic profile of respondents is presented in Table 4. A total of 320 respondents (with 4680 items were analysed). The respondents' age is between 28 years old to 72 years old, with mean 35 years of age in this study. There are 36.9% and 63.1% male and female respondents respectively in the sample. The race compositions of the respondents are: 66.3% are Malay, 19% are Chinese, and 11.3% are Indian with only 3.4% of other races. As for the marital status, 42.5% of them are currently single, 50.9% of them are married and 6.6% of them are other statuses such as widowed or divorced.

Table 4: Socio-economic Profile of the Respondents

<b>Variable</b>	<b>Percentage (%)</b>	<b>Mean</b>
<i>Age (year)</i>		34.7
<i>Income per annum</i>		38863.55
<b>Gender</b>		
Male	36.9	
Female	63.1	
<b>Race</b>		
Malay	66.3	
Chinese	19.0	
Indian	11.3	
Others	3.4	
<b>Marital Status</b>		
Single	42.5	
Married	50.9	
Others	6.6	

Table 5 shows the questions regarding respondents' perception on ODL education in Malaysia while Table 6 illustrates how most of the respondents feel about the ODL services provided. The respondents consider ODL education as important (mean value of 3.85). It is the future of education (mean value of 3.81). They are glad that ODL education are available for them (mean value of 3.84). Most of the respondents are concerned about ODL education attributes because ODL is an approach to education and training that can be accessed by all who require at anytime anywhere.

Table 5: Questions regarding respondents' perception on ODL education

<b>Question</b>	<b>Description</b>
Q15	I am glad ODL education choice is available to me
Q16	The present ODL education attributes should be available for my grandchildren
Q17	ODL education is the future of learning
Q18	If things continue on their present course, we will soon experience a major touch in education
Q19	I do not need to care about education attributes

Table 6: Respondents' Perception towards ODL education

<b>Question</b>	<b>Mean</b>
Q15	3.85
Q16	3.81
Q17	3.84
Q18	3.78
Q19	3.79

### Marginal Willingness-To-Pay with Interaction Model

The inclusion of socio-economic attributes was a simple but important step in estimating a more accurate model (Rolfe, Bennett & Louviere, 2000; McConnell & Tseng, 2000). Since socio-demographic variables are the same for a given respondent, apart from selecting

options A, B or C, for each choice question the variables were entered into the model. Status quo is selected as the base level for the obtained models. The interaction model is shown in Table 6. The economic function of the final model is:

$$U = \sum_{i=1}^{11} \beta_i X_i + \varepsilon_0$$

Table 6: Multinomial Logit Interaction Models

<i>Variables</i>	<i>Coeff.</i>
$X_1 = PROG2$	1.24910495***
$X_2 = PROG3$	1.08110280***
$X_3 = FAC2$	0.78956554***
$X_4 = FAC3$	0.50454530***
$X_5 = REP2$	0.74167849***
$X_6 = REP3$	1.62637680***
$X_7 = FAC2\_INCOME$	$-0.539369 \times 10^{-5}$ *
$X_8 = PROG3\_MALE$	0.47367672**
$X_9 = FAC2\_MALE$	0.37033414**
$X_{10} = REP3\_SINGLE$	-0.35879344***
$X_{11} = REP2\_INCOME$	$0.382835 \times 10^{-5}$ *
<i>FEES</i>	-0.10846555***

\*\*\*Significant at 1%, \*\* 5% and \* 10%

The signs are as expected with a positive increase in its value due to better and higher quality offered. The multinomial logit (MNL) with interactions model shows that both the levels for the variable programme offered (PROG) have positive signs and were significant at 1% level. The positive sign indicates that the higher the quality of programme offered, the higher the probabilities of respondents paying. The variable, facilities offered is significant at both levels at 1%, signifies respondents would have higher utility level for a higher quality for facilities offered for ODL education in this study. Both levels of the variable Reputation of the institutions (REP) are significant at 1% as well. This variable also has increasing positive values for both the levels as expected. The fees paid are significant at 1% with a negative sign indicating that the respondents prefer lower fees. This implies that the fees associated with an alternative will have a lower probability to be chosen given all other attributes being equal.

## CONCLUSION

ODL itself must be able to meet the “demands” of its stakeholders including learners and facilitators because ODL has become the means by which education can be accessed by all who so require, anywhere, anytime. This has put ODL institutions on a quest to provide quality education to its learners. Quality education covers many aspects from reputation of its academic programs, the reputation of the university, available facilities etc (Halim, Omar, Lim, Siew, & Chooi, 2009). From the universities’ perspective, the result of this study would be able to provide a direction to the ODL institutions on the attributes to be invested. Investment must be done wisely and for the right reason. It is important to understand the costs and benefits received in order to maintain its sustainability in the market. This study indicated that more emphasis should be put on the reputation of the ODL institutions.



Investing in the reputation of ODL education institution is vital based on the results of this study. This may be due to the fact that ODL is relatively a new learning environment in Malaysia although ODL has been in the market for more than 10 years. The findings of this study suggest that the economic value of ODL learning in Malaysia is substantial and respondents are generally supportive and willing to pay to study in ODL mode.

This study was conducted based on private ODL institutions only as there are no public ODL institutions in the country. Future study can look into this aspect and learn whether learners from the public education institutions perceive the importance of certain attributes similarly as learners in the private education institutions. Future study could also obtain feedback from other stakeholders such as, prospective learners. Prospective learners are the “untapped” customers for the education institutions and it is this market that will be able to ensure education institutions’ sustainability apart from providing invaluable insight to the market.

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