

RELATIONSHIP BETWEEN INFORMATION SATISFACTION AND INFORMATION ACCESSIBILITY: INTERNATIONAL STUDENTS CHOICE OF HIGHER EDUCATION INSTITUTION IN MALAYSIA

Nurlida Ismail
Taylor's University
No. 1, Jalan Taylor's
47500, Subang Jaya, Malaysia

Tel: +6 03 56295667

Fax: +6 03 56295749

E-mail: nurlida.ismail@taylors.edu.my

ABSTRACT

A wave of change in the education scenario is evident, as its services are expanding vigorously beyond its respective territorial boundaries. This scenario has resulted in an intensified competition among higher education institutions in attaining and retaining students. Hence, identifying factors influencing students' satisfaction is essential. However, it is important to highlight that satisfaction may occur prior to choice. The notion of information satisfaction having a relative impact on overall choice satisfaction cannot be overlooked.

*This study aims to examine the impact of information on institution attributes and information accessibility on international students' information satisfaction in their choice of higher education institution. SEM was used to examine these relationships. Result reveals that information accessibility was a significant predictor of information satisfaction than institution attributes. Additionally, institution attributes has both direct and indirect effects on information satisfaction with a total effect of 0.31 (direct effect = 0.12; indirect effect = $0.31 * 0.61 = 0.19$). Results indicate that information accessibility is a significant mediator. Hence, the challenge is to make sure that promotional effort in providing relevant information to students will result in their satisfaction on the information. Information on important attributes should be easily accessible and understandable to assist student in making choices pertaining to their preferred institution.*

Keywords: International students, higher education institutions, institution attributes, information accessibility, information satisfaction

INTRODUCTION

A wave of change in the education scenario is evident, as education services are expanding vigorously beyond their respective geographical boundaries. Globalization of education has resulted in a paradigm shift in the governance of the higher education system where many governments have liberalized their education market that was previously regulated and protected by the government. Additionally, internationalization of education is seen to have

an economic impact on the education industry. In 2007, there were 54,915 international students in Malaysia and the enrolment number has grown by leaps and bounds to more than 96,000 in 2011 (Ministry of higher Education (Malaysia) 2012). In the year 2002, the revenue from international students was estimated to generate more than RM1 billion from tuition fees and also through its multiplier effect especially in tourism and medical services (Wee, 2002). Hence, this liberalization scenario has resulted in an intensified competition among higher education institutions (HEIs) both at local and international levels. Consequently, there is a pressing need for HEIs to respond to the increasingly diverse student clientele. With the surging competition for obtaining and retaining students, it is essential for HEIs to identify factors that influence students' satisfaction. It is generally accepted that students' satisfaction is a post-purchase phenomenon. However, it is also important to highlight that satisfaction may occur prior to choice. The notion of information satisfaction having a relative impact on overall feeling of satisfaction with service experience cannot be overlooked.

Oliver (2010) mentioned that central to the disconfirmation paradigm, customer's expectations have been generally accepted as affecting choice satisfaction. Customers form expectations from various sources of information either marketer or non-marketer dominated. Thus, accessibility of information plays a vital role in the students' information acquisition and choice process. Thus, prior to overall satisfaction, it is important to primarily identify how information on institution attributes and the accessibility of such information contribute to students' satisfaction of information. Within the context of international students, it is essential that they are able to obtain all information required as they could make better judgment and ultimately feel satisfied with their choice of institution. Especially in education services, which is intangible and normally associated with high perceived risks, the search for information on institution attributes and the need for satisfaction of the information sought enable customers to reduce the level of uncertainty. Hence, this calls for a study on the significant impact of information on institution attributes and information accessibility on international students' information satisfaction.

The study is aimed at addressing two patterns of relationship; firstly, it addresses the relationship between institution attributes and information accessibility on information satisfaction. Secondly, it also attempts to address the mediating effect of information accessibility on the relationship between institution attributes and information satisfaction

LITERATURE REVIEW

Institution Attributes

When gathering information during university selection process, potential candidates or student-to-be will attempt to reduce the uncertainty associated with the decision. Information gathered from various sources is the basis of students' evaluation and judgment. Wagner and Fard (2009) reported that institutional information had a significant relationship with students' intention to pursue higher education. This indicates that information regarding institution attributes is relevant for students' evaluation and choice process. Souter and Turner (2002) concluded that information on course suitability, university reputation; job prospects and teaching quality were the four most important university related attributes. This

notion was strongly supported by Kusumawati (2011) and Patel and Patel (2012). Other researchers have also addressed the issues on institution attributes influencing students' choice decision amongst others availability of financial support, institution facilities and admission/entry requirement (Hartono, 2012; Ivy, 2010). Previous studies on institution attributes focus on delineating its relationship with institution choice. This study however, recognizes institution attributes as part of marketing information and attempts to seek the relationship of information on institution attributes with information satisfaction. Hence this leads to the following hypothesis:

H₁ Institution attributes have a positive effect on information satisfaction

Accessibility of Information

Information on institution attributes is provided to students in many ways through a variety of sources such as advertisements and institution brochures. Excessive information can cause problem even when the choice is important and this quandary can discourage students' application (Forsyth & Furlong, 2003). This array of information confronting the students could produce dysfunctional consequences, such as a state of information explosion. Significantly, this would generate attention to issues regarding what information to provide, how much to provide and how best to present it. At the same time, the extent to which information is available and accessible may affect customer choice decision.

Information accessibility refers to the extent to which information is available and reachable to consumers in a format that they can use (Bettman, 1979). It was recognised that information accessibility and consumers responsiveness are positively associated. Brown (2002) confirmed that the use of websites depends on the ease of finding and understanding the information.

Readily available information allows for search and evaluation to be done in a more effective manner. Evidences from research have indicated that when information relevant to a judgment was highly accessible, customers were more in favor of retrieving and considering such information (Chang, 2010; Caruso, 2008). Additionally, frequency of use was found to be a primary function of the accessibility of information from various sources rather than the quality of the information (O'Reilly, 1982).

Chang (2010) reported that when information regarding a health issue was made accessible, ease-of-retrieval effects were attenuated. The primary conclusion is the importance of making information more available, which should increase the accessibility of relevant information and reduce experienced recall difficulty.

Study on international students destination choice by Mazzarol and Soutar (2002) indicated that the ease with which international students were able to find information (accessibility) was rated higher than the knowledge of the host country. This strongly indicates that the ease of finding and accessibility to information regarding institution attributes are important determinants of the use of such information. It can be suggested that when information is readily accessible, students are able to respond and react. Additionally, the ability to obtain and secure relevant information may provide these students an opportunity for better-informed decision-making. This might translate to greater students' fulfilment and

satisfaction in their information acquisition prior to making an institution choice. Hence this leads to the development of the following hypothesis:

H₂ Information accessibility has a positive effect on information satisfaction

Information Satisfaction

Spreng, Mackenzie and Olshavsky (1996) indicated that satisfaction with information acquired is recognized as an important antecedent of overall choice satisfaction. And information that is being sought after by potential students prior to making an institution choice is normally information on institution attributes.

Information satisfaction is defined as a subjective satisfaction judgment of the information used prior to making a choice (Spreng *et al.*, 1996). Cardozo (1965) . agreed that the expectation that an individual has concerning a product depends upon information acquired from various sources. Hence, customer expectation may be influenced by marketer controlled information disseminating methods. This explains the strength of students' information satisfaction in making an accurate decision on institution choice. In a study by Petrick, James and Backan (2002) on customers' satisfaction, information satisfaction was found to be a significant antecedent to overall satisfaction.

For that reason, study on information satisfaction is thus necessary because it is the result of students' evaluation of the institution's marketing communication efforts. The possibility of a choice being made is greater if students are satisfied with the information they have obtained regarding attributes of a certain institution. Furthermore, the ease of accessing information on institution attributes will lead to better choice decision.

Hence, it can be hypothesized that accessibility of information facilitates the search for information on institution attributes and it may in turn stimulate the sense of satisfaction among these students.

H₃ Information accessibility has a mediating effect on the relationship between institution attributes and information satisfaction

METHODOLOGY

The sample of this study comprised of international students from private higher education institutions (PHEIs) in Malaysia. Subjects (N = 600) from 32 PHEIs were selected using a stratified sampling procedure by utilizing the international students database acquired with permission from the Ministry of Higher Education.

The institutions were randomly selected and proportionate sampling was utilized to ensure that the sample size drawn from each institution was uniformly represented. This is a good approach as it has high statistical efficiency (Cooper and Schindler, 2011 and Saunders, Lewis and Thornhill, 2009). The subjects were divided according to the international students' population and status of the institutions. The questionnaires were distributed employing three methods based on the type preferred by the officers from the respective institutions. Questionnaires were either hand-delivered, mailed together with a self-addressed stamped envelope or a soft copy of the survey was sent via electronic mail. The number of

questionnaires distributed to each institution was based on the international students' population of the respective institutions. Table 1 shows the arrangement of constructs.

TABLE 1: VARIABLES FOR THE STUDY

Constructs	Sources	5-point Scale Ranging From
Institution attributes	Cubillo, Sanchez & Cervino (2006); Patel & Patel (2012); Simoes & Soares (2010)	1 (not important at all) to 5 (very important) to indicate the importance of institution attributes.
Information accessibility	Connelly <i>et al.</i> , (1990)	1 (strongly disagree) to 5 (strongly agree) to indicate students' level of agreement/disagreement on information accessibility statements.
Information satisfaction	Oliver (1980 & 2010)	1 (strongly disagree) to 5 (strongly agree) to indicate students' level of agreement/disagreement on their satisfaction with information used.

For the purpose of this study, institution attributes construct was classified into four dimensions namely:

1. Academic programs
2. Cost and financing
3. Issues on education institution
4. Professional skills and development

Each of the dimensions was represented by four items/ indicators

DATA ANALYSIS

Table 2 reveals that Kaiser-Meyer-Olkin (KMO) results for all constructs are at acceptable level. Barlett's test is found to be significant at a level of less than 0.05. The constructs explained variance value were at least 62 percent which exceeded the recommended requirement of 0.50 (Hair, Anderson, Tatham, & Black, 1998). Cronbach's alpha results were above the minimum 0.70 cut-off value (Nunnally 1978). Hence, items were consistent and reliable for measurements.

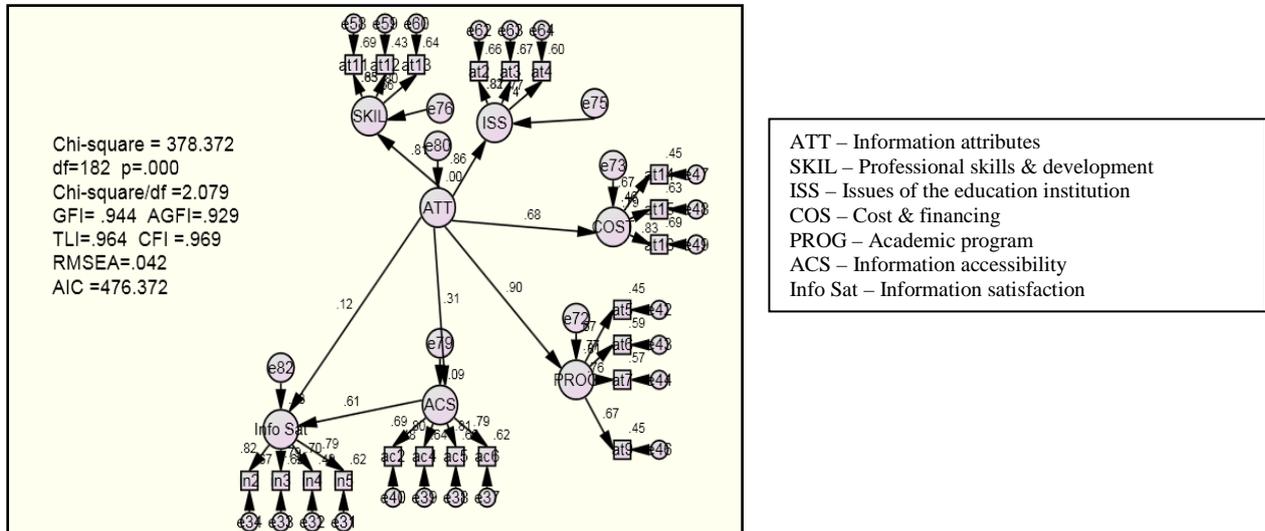
TABLE 2: RELIABILITY AND VALIDITY RESULT

Constructs	KMO	Barlett's Test	Explained Variance	Cronbach's Alpha
Institution attributes	0.869	<0.001	62.9%	0.89
Accessibility	0.876	<0.001	70.0%	0.91
Information Satisfaction	0.843	<0.001	62.0%	0.84

The initial readings of goodness of fit were not satisfactory hence a few rounds of re-specification of the model were undertaken to improve its validity. In addition to modification indices, in considering dropping a few items, the factor loading values were also observed. Figure 1 reveals the final structural model of the study and all statistics were above

the recommended threshold values. The Chi-square/df was below 3.0, other fit indices were more than 0.90 and RMSEA was less than 0.08. Factor loading (L) values for the items were between 0.654 and 0.831 exceeding the minimum requirement of 0.50 for L (Hair et al., 1998). Hence, model fits the data well.

FIGURE 1: STRUCTURAL MODEL OF THE STUDY



The hypotheses were tested using SEM (AMOS 18). Table 3 indicates that H₁ and H₂ were supported. Based on the β values, information accessibility (β = 0.609) was a more significant predictor of information satisfaction than institution attributes (β = 0.118).

TABLE 3: HYPOTHESISED RELATIONSHIP AND RESULT

	Unstd Est	S.E.	C.R.	P	β	Results
H ₁ :Institution attributes have a positive effect on information satisfaction	.143	.051	2.796	.005*	.118	Supported
H ₂ :Information accessibility has a positive effect on information satisfaction	.610	.049	12.347	.000*	.609	Supported
H ₃ :Information accessibility has a mediating effect on the relationship between institution attributes and information satisfaction	(Refer to explanation below & Table 4)					Supported

*Significant at 0.05

Hypothesis 3 (H₃) proposed that information accessibility has a mediating effect between institution attributes and information satisfaction. Table 4 indicates that the indirect effect of institution attributes onto information satisfaction through information accessibility is significant (0.133, 0.267). Additionally, institution attributes have both direct and indirect effect on information satisfaction with a total effect of 0.31 (direct effect = 0.12; indirect effect = 0.31*0.61 = 0.19). The indirect effect is stronger and almost twice as much as the direct effect Thus, results further indicates that information accessibility is a significant mediator.

TABLE 4: MEDIATING EFFECT BASED ON 1,000 BOOTSTRAP RESAMPLES

	Institution attributes
Information satisfaction	[0.133, 0.267]

Note: Rule for mediator: Value zero (0) does not fall with the intervals

CONCLUSION AND DISCUSSION

This study reveals that information on institution attributes and information accessibility were influencing information satisfaction. The findings are in tandem with previous studies indicating that information that is readily accessible will be used more frequently than those that are less accessible. O'Reilly (1982) explained that it is information accessibility, rather than information quality, that is related to frequency of information search. From the findings of this study it can be assumed that the greater the accessibility of information, the higher the students' responses will be. Hence, it can be implied that institutions need to provide information to their prospective students through multiple sources. The availability and accessibility of information from different sources may encourage students to seek more information which may lead to increased search efforts. For example, apart from the websites, institutions should also make an effort to provide students with other information options such as publications, engaging representatives in various countries or even information from rating agencies. In addition, information should not just be conveniently available but information should be updated frequently and user-friendly.

With regards to information on institution attributes, the findings were also supported by previous research. Halstead, Hartman and Schimidt (1994) reported that attending and obtaining a degree from a HEI represents an unfamiliar experience, hence acquisition for information concerning institution attributes is of importance for students' evaluation and choice process. The evaluation of students' expectations and performance perceptions (satisfaction level) is based on the information of the institutions attributes. Hence, it can be concluded that the more important the attribute is, the more essential the information search becomes. HEIs should identify these important attributes and leverage on them in promoting their institutions. In this study, it has been reported that the reputation of institution and quality of education are the top two important attributes that students seek for in making an informed choice of their preferred institution.

Evidences also indicate that there is a positive mediating relationship between accessibility and information satisfaction. This implies that the challenges of HEIs are not only to focus on providing information on vital attributes but of equal importance is to identify strategies on the methods of how such information should be disseminated appropriately and effectively. Furthermore, the challenge is to ensure that promotional efforts in providing relevant information to students will result in their satisfaction on obtaining the information. Information on important attributes should be easily accessible and understandable to assist students in making an informed choice.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH OF THE STUDY

This study is not without limitations and there are a few key implications that warrant attention of future research. Firstly, the study focused only on international students currently studying in PHEIs in Malaysia. International students from the public universities were not considered. It is possible that if the study was conducted on other varieties of international students, the magnitude and direction of influence of the determinants of information satisfaction may be different. It is suggested that this study should be replicated at public institutions to compare findings between the public and private institutions.

Secondly, the analysis depicted in this study was quantitative in nature. However, the model developed at this point could also be tested qualitatively. Future research for an in-depth inquiry on the relationship among the determinants of information satisfaction is very much required and may be able to provide a supplementary insight. Additionally, a more comprehensive understanding of international students' information satisfaction can provide fine points that facilitate the development of fundamental strategies for effective marketing campaigns.

Finally, respondents profile can also be analyzed to provide a better understanding of international students' search process. For example, analysis can be done to gauge if gender difference has any impact towards students' search process. Or there may be a possibility that students who wish to pursue a degree in engineering may search for different information on institution attributes as compared to those who wish to enroll in a business administrative degree. Hence, understanding the relationship between different groups of students from different geographical areas and different profiles are worthy

REFERENCES

- Bettman, J.R. (1979). *An information processing theory of consumer choice*. U.S.A., Addison-Wesley Publishing Company Inc
- Brown, I.T.J. (2002). Individual and technological factors affecting perceived ease of use of web-based learning technologies in developing country. *Electronic Journal on Information Systems in Developing Countries*, 9(5), 1 – 15.
- Cardozo, R. N. (1965). An experimental study of customer effort, expectation, and satisfaction. *Journal of Marketing Research*, 244-249.
- Caruso, E. M. (2008). Use of experienced retrieval ease in self and social judgments. *Journal of Experimental Social Psychology*, 44(1), 148-155.
- Chang, C. (2010). The effects of retrieval ease on health issue judgments: Implications for campaign strategies. *Health Communication*, 25(8), 670-680.
- Connelly D.P., Rich E.C., Curley S.P., & Kelly J.T. (1990). Knowledge resource preferences of family physicians. *Journal of Family Practices*, 30 (3, March), 353 – 359.

- Cooper, D.R. and Schindler, P.S. (2011) *Business Research Methods*, 11th edition, McGraw-Hill International Edition
- Cubillo, J.M., Sanchez, J., & Cervino, J. (2006). International students' decision-making process. *International Journal of Educational Management*, 20(2), 101-115.
- Forsyth, A.J.M., & Furlong, A. (2003). *Losing out? Socioeconomic disadvantage and experience in further and higher education*. Bristol: Policy Press.
- Hair, Jr., J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). New Jersey: Upper Saddle River: Prentice Hall.
- Halstead, D., Hartman, D., & Schimdt, S.L. (1994). Multisource effects on the satisfaction formation process. *Journal of the Academy of Marketing Science*, 22(2), 114-129.
- Hartono, A. (2012). Information requirements in the selection of Indonesian higher education. *Australian Journal of Business and Management Research*, 2(09), 26-30.
- Ivy, J. (2010). Choosing futures: Influence of ethnic origin in university choice. *The International Journal of Educational Management*, 24 (5), 391.
- Kusumawati, A. (2011). Understanding student choice criteria for selecting an Indonesian public university: A conjoint analysis approach. *Higher Degree Student Research Conference*, University of Wollongong, 28 – 30 Sept.
- Mazzarol, T., & Soutar, G.N. (2002). Push-pull factors influencing international students destination choice. *International Journal of Educational Management*, 16(2), 82-90.
- Ministry of Higher Education (2012). Indikator Pengajian Tinggi 2009 – 2010. http://www.mohe.gov.my/web_statistik/indikator_pengajian_tinggi_2009-2010.pdf
Retrieved 16 February, 2015.ed
- Nunnally, J. (1978). *Psychometric theory* (2nd ed.). New York: McGraw- Hill
- Oliver, R.L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17(Nov), 460-469.
- Oliver, R.L. (2010) *Customer Satisfaction* , U.S.A. Wiley International Encyclopedia of Marketing.
- O'Reilly, C.A. (1982). Variations in decision makers' use of information sources: The impact of quality and accessibility of information. *Academy of Management Journal*, 25 (4, December), 756 – 771.
- Patel, R., & Patel, M. (2012). A study on perception and attitude of students regarding factors which they consider while making selection of institute in MBA Programme in Gujarat State. *Journal of Arts, Science, and Commerce*, www.researchwork.com, Vol.111, Issue 1m 2012, 115...

- Petrick, J. F & Backan, S. J. (2002). An examination of the determinants of golf travellers' satisfaction, *Journal of Travel Research*, 40 (February), 252 – 258
- Saunders, M., Lewis, P. and Thornhill, A. (2009) *Research Methods for Business Students*, 5th edition, U.K. Financial Times Prentice Hall.
- Simões, C., & Soares, A. M. (2010). Applying to higher education: information sources and choice factors. *Studies in Higher Education*, 35(4), 371-389.
- Souter, G.N. & Turner, J.P. (2002), Students' Preferences for University :A Conjoint Analysis, *The International Journal of Educational Management*, V.16 (1) 40-45.
- Spreng, R.A., Mackenzie, S.B. & Olshavsky, R.W (1996). A reexamination of the determinants of consumer satisfaction. *Journal of Marketing*, 60(July), 15-32.
- Wagner, K., & Fard, P. Y. (2009). Factors influencing Malaysian students' intention to study at a higher educational institution. E-Leader Kuala Lumpur. Retrieved 15 February, 2015.
- Wee, V (2002). *Strategies for development of the services sector*. Keynote address presented at the Affin-UOB Securities Investors Forum – Reinventing Malaysia. Malaysia, Affin –UAB Security Investors Forum.