

Marketing public and private higher education institutions: A total experiential model of international student's satisfaction, performance and continues intention

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Abstract While Malaysia has a great potential to be an education hub that attracts many international students to pursue their educational dreams in the country, a few empirical studies examined the total experiences of international students' satisfaction in the public and private higher education institutions. The aim of this study is to measure the international students' total experience in the Malaysian higher education sector. A theoretical research model is proposed with three identical stages including pre, during and post stages. Specifically, this study proposes that the international student's total experience model includes university image, students' expectation, past students experience, information sources and service quality (first stage), and the second stage includes the level of satisfaction and students' perceived performance. The third stage, post stage, is the last stage includes international student's continuance intention of further study. A total of 535 questionnaires were collected from international students in Malaysia in order to empirically test the theoretical model using variance based structural equation modeling for the evaluation of measurement and structural model. Statistical results imply that the model explains 65.5% of variances in

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international student's continuance intention of further study. Moreover, empirical study illustrates the total experience of international students in public and private universities impacts the individual-perceived value and service quality. Practical and theoretical implications are discussed.

Keywords Higher education (HE) · International students · Total experience · Service quality · Level of satisfaction · Continuance intention · Malaysia

1 Introduction

Higher education (HE) internationalization is the main goal of governments and especially, higher education institutions (HEIs) across the globe and emerging markets (Clarke III and Flaherty 2003). The internationalization of HE is considered as an essential step to generate marketable graduates, absorbing more international students and also producing innovation via research and development (Tham and Kam 2008). Considerably, the internationalization of HE signifies the pursuit of an international image of quality to make the chosen top universities more competitive at a global level (Hou 2014; Veisi et al. 2007). "Internationalization of HEI is defined as a change process from a national HEI to an international HEI leading to the inclusion of an international dimension in all aspects of its holistic management in order to enhance the quality of teaching and learning and to achieve the desired competencies" (Knight 2004, p. 10). Moreover, internationalization can assist to create a reputation, boost international student and staff knowledge development, produce financial revenue and increase knowledge efficiency. The government of Malaysia attempting to develop the superiority of HEIs. Therefore, in 2007 the Malaysian government presented the National Higher Education Strategic Plan beyond 2020 (PSPTN) which is the most recent reaction to the universal challenges for HE internationalization.

The goal of internationalization is to empower Malaysia to become a hub for superiority in international HE (Tham and Kam 2008). Particularly, education hub is willing to establish human talent to rival in the global knowledge economy (Bhayani 2014). The HE system that took root in the multicultural community of Malaysia was transplanted from Britain to Malaysia during British colonial rule, therefore, the British system of HE was to a large extent replicated in the HE milieu of Malaysia (Selvaratnam 1985). Furthermore, Malaysia is turning into an active player in global education and ranks as the world's eleventh-largest exporter of education (Cheng et al. 2013). Currently, HE in Malaysia has experienced an increasing competition among universities and HE institutes to attract students both locally and internationally (Ming 2010). More importantly, Malaysia is positioned well to secure international students from the Middle Eastern and African nations due to its political stability and developed status makes it an attractive destination for many potential Muslim international students who are uncertain about studying in Europe or North America.

Nevertheless, private universities competing with each other in order to recruit international students thus, they are indeed considered as quality education providers because of their reputation in generating quality graduates (Tang and Hussin 2013). International students are defined as "those who have chosen to travel to another country for tertiary education" (Singh et al. 2014, p. 3). Malaysia is gradually becoming

education hub due to the fact that international students are consistently flocking the corridors of universities in the country (Malaklolunthu and Selan 2011). Undoubtedly, the private HEIs have played a significant role in the export of education. As of July 31, 2006, there were 31,159 international students studying in the private universities and colleges thus, several private universities and private university colleges have established their branch campuses in China, India, Indonesia, Pakistan, Sri Lanka and Yemen, hence earning foreign exchange for the nation. In addition, the Malaysian government has established promotion offices in Beijing, Ho Chih Minh City, Jakarta, Dubai, and Yemen in order to attract international students to study in Malaysia. International students planning to continue their education in Malaysian universities consider three significant factors which are recognition of qualifications globally, competitive fee structure and the quality of education, and the use of English language as a medium of instruction in the universities (Tham et al. 2013). Additionally, in Malaysia, international student enrollment is a significant target of HE, the economy as well as the society. Therefore, the below table (Table 1) indicates the growth of the international student population from 2002 to 2013 (Aziz and Abdullah 2014).

International students expect to receive high level of service quality which is one of the major criteria in order to assess international students' satisfaction level. Furthermore, university-wide student feedback about the quality of their total educational experience is an area of growing activity in higher education institutions around the world and today, that statement remains valid and increases in importance (Harvey 2001; Cardona and Bravo 2012). Therefore, the total experience of international students has been considered important for the delivery of services to international students. The problem addressed by this study is that, Malaysian public and private higher education institutions neglected to measure the international undergraduate and postgraduate students' total experience in Malaysia. There are literatures on

Table 1 International student enrolment in Malaysia 2002 to 2013

YEAR	Public HEIs	Private HEIs
2002	5045	22,827
2003	5239	25,158
2004	5735	25,939
2005	6622	33,903
2006	7941	39,449
2007	14,324	33,604
2008	18,495	50,679
2009	22,456	58,294
2010	24,214	62,705
2011	25,855	45,246
2012	26,232	57,306
2013	29,662	53,971
Total	191,820	509,081
%	(27.37%)	(72.63%)

Source: Aziz and Abdullah (2014)

international postgraduate students in Malaysia (Shekarchizadeh et al. 2011), Turkish undergraduate and postgraduate students in Malaysia (Rasli et al. 2014), Iranian postgraduate students in Malaysia (Rasli et al. 2012), and comparison of international and local postgraduate students in Malaysia (Ahmed and Masud 2014; Manaf et al. 2013). As the related literature indicated, there have been limited studies measuring the service quality of international students in the Malaysian context. Accordingly, this study is designed to measure the international undergraduate and postgraduate students' total experience in Malaysia's private and public higher education institutions.

Quality of service is a primary factor of marketing effectiveness in HEIs and is greatly linked to international student satisfaction (Cardona and Bravo 2012). Obtaining quality in faculty members' performance needs HEIs' to have a quality culture as well as advanced training programs (Ali and Musah 2012). Furthermore, highest performance perception may result to a greater affirmation which leads in positive effect to individual satisfaction as well as continuance intention (Hayashi et al. 2004). Georgiadis and Chau (2013) have done a research on online business and asserted that successful online user experience pertains to a large number of elements. Recent years have seen a growing interest in the international students' experiences of HE in English-speaking settings (Elliott and Reynolds 2014; Hamer 2000). It is clearly important for universities to understand how international students experience their campus life and what they value the most (Kumar and Yang 2014). Thus, this study defines the international students (IS's) total experience as the overall experience achieved through three stages of total experience, which are pre, during and post experience. The experience could be in a form of social, emotional or physical experiences which international students encounter. Park-Saltzman et al. (2012) stressed that international students experience a diversity of challenges comprised of isolation, homesickness, culture shock, language barriers and discrimination in the foreign countries. Therefore, it is vital to look at the interaction between the service providers and international students in order to understand the total experience of international students.

Therefore, the chief objective of this study is to uncover the international students' total experience in the Malaysian higher education sector and proposes an integrative theoretical research model including pre, during and post stages. Thus, this study proposes that the international student's total experience model includes university image, students' expectation, past students experience, information sources and service quality (first stage), and the second stage includes the level of satisfaction and students' perceived performance. The post stage includes international student's continuance intention of further study. Accordingly, this research organized in several sections. The following section discuss the theoretical background of model and the third section proposes research method and data analysis. The last section provides the discussion and conclusion of research.

2 Literature review and hypothesis development

2.1 Continuance intention of further study

Bhattacharjee (2001) was the first researcher who proposed IS continuance theoretical model. Bhattacharjee (2001) IS continuance model is based on expectation confirmation theory, which is the most well-cited research framework in the study of IS

continuance (Cheung et al. 2015; Sun and Mouakket 2015). The outcome variable in this study is continuance intention of further study, which refers to the subjective probability that an international student will continue with further study (Chiu et al. 2007). Hong et al. (2015) stated that most studies use continuance intention to measure individuals' likelihood to continue the use. A study was done by Ramayah and Lee (2012) regarding usage of web based-learning at the public university in Malaysia and revealed that If users have less satisfaction than the continuance usage intention is getting low; the efficiency of e-learning in a public university is considered ineffective. The researchers utilized continuance intention of further study as the dependent variable in this empirical study, because if international students have the positive experience and gain a vast knowledge at the universities then they will continue pursuing their HE degree at the same institutions. Otherwise, they would switch to other universities or even countries. By looking at the theoretical research model presented in this empirical study, there are three stages which are: pre, during and post. The international student's total experience starts before they arrive in the universities of Malaysia. This means that they are on the "Pre Stage" which comprises different types of variables, for example past university image, students' expectation, past student experience, information sources and service quality. The second stage, "During Stage", begins when the international students are in the middle of their experience. Besides, it contains some variables such as level of satisfaction and students' perceived. The third stage, "Post Stage", is the last stage and happens when international students intend to leave Malaysia. Therefore, it contains variable such as continuance intention of further study (See Fig. 1).

2.1.1 University image

A general theoretical model of image formation proposed by Baloglu and McCleary (1999) and suggested that an image is organized by two main factors which are stimulus factor (distribution, information sources, and prior experience) and personal factors (social and psychological constructs) (Beerli and Martín 2004). The image is a multidimensional construct comprised of cognitive and effective images. According to Martín and Bosque (2008), the cognitive dimension refers to the knowledge or beliefs an individual has of the attributes of a particular destination while the affective component is shown by a person's feelings with regard to the destination. Moreover, the distinction between affective and cognitive components of the image has been made and used in many fields such as linguistics, psychology, sociology, communications, tourism and also marketing. University image defined as, "the set of meanings by which an object is known and through which people describe, remember and relate to it ...it is the result of the interaction of a person's beliefs, ideas, feelings and impressions about the university at a particular moment in time" (Wilkins and Huisman 2015, p.1). A desirable image can assist universities to absorb the best faculty and more resources, containing research funding and alumni endowments (Wilkins and Huisman 2013). University image variable was used in this empirical study because it plays a major role in the international students' decision-making process. Thus, universities that attract international students should portray a good image to improve the image because this will create a very positive perception among international students to choose the universities. The image is considered as one of the constructs with the strong impact

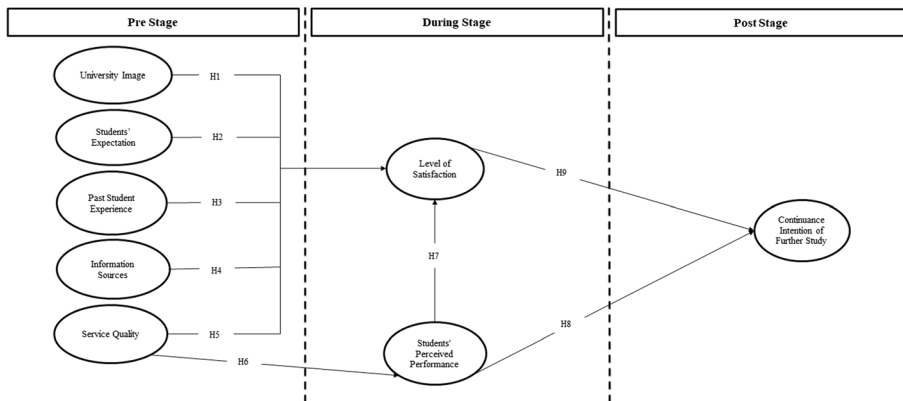


Fig. 1 Theoretical research model

in the satisfaction formation (Alves and Raposo 2010). Studies clearly expressed that image effects on satisfaction (Brown and Mazzarol 2009; Faullant et al. 2008). Moreover, Bacila et al. (2014) asserted that there is a robust relationship among university image and student satisfaction. An empirical study was done among students located in eight countries in the Middle East, regarding the university image and its relationship to student satisfaction and the result indicated that overall images significantly affect the overall satisfaction of students with their university (Azoury et al. 2014). Therefore, this study hypothesizes the relationship between university image and level of satisfaction as follows:

H1 There is a positive relationship between university image and level of satisfaction.

2.1.2 Students' expectation

Expectations can be defined as beliefs about the likelihood that a service or product is associated with certain attributes, benefits, or outcomes (Coye 2004). Student expectations have been recognized as a significant construct at the tertiary education level (Pinto and Anderson 2013). The knowledge of international student expectations can assist lecturers in the design of teaching programs (Voss et al. 2007). Likewise, universities need to understand student expectations to provide them with a suitable learning environment (Ahmad 2015; Mitsis and Foley 2009). Pinto and Anderson (2013) believed that understanding the student expectations can subsequently be used to form a picture of their identity. Students' expectation of total academic success is predicted by their overall achievement (Ergene 2011).

A study regarding job satisfaction in Islamic Azad University (IAU) in Iran deduced that when a job meets or exceeds a person's expectation, the person would experience positive emotions in which these positive emotions indicates job satisfaction (Daneshfard and Ekvaniyan 2012). The study investigated the role of student expectations on satisfaction and revealed that students were highly satisfied when their expectations exceeded than whose the cohort experience fell short of expectations (Appleton-Knapp and Krentler 2006). Pinto and Anderson (2013) stated that by discovering international student expectations, the faculty can deal with any inaccurate perceptions of the course policies prior an unsatisfactory experience occurs. The researchers used students' expectation as one of the independent variables because the international students expect to gain good academic knowledge from the universities they are studying in. At the same time, they also compare their universities with the universities worldwide in terms of their services. Consequently, HE educators and HEIs need to dynamically attend and observe the issues concerning international students. Therefore, this study hypothesizes the relationship between students' expectation and level of satisfaction as follows:

H2. There is a positive relationship between students' expectation and level of satisfaction

2.1.3 Past student experience

Uy et al. (2013) defined past student experience as an individuals' engagement relating to learning and teaching at a particular university outside the boundaries of the students' country of residence in the past. According to Azagra-Caro et al. (2014), past experience can provide students and organizations such as universities with unique opportunities to practice, make errors and receive a feedback. A collective case study was done in Australia, regarding web 2.0 technologies in HE, found that majority of students have less past experience towards technologies (Bennett et al. 2012). Past experience has been highlighted as an important consideration (Haverila et al. 2011; Hamer 2000). Therefore, student use of and satisfaction with the learning management system has been examined in a study where it was claimed that past experience has a significant and positive influence on satisfaction. The past student experience was used as one of the independent variables in this study. It is important that past student experience to be taken into consideration by the university because the feedback could tell any weaknesses and strengths of the institution. From the feedback, improvements should be made to attract more international students. Therefore, this study hypothesizes the relationship between past student experience and level of satisfaction as follows:

H3 There is a positive relationship between past student experience and level of satisfaction.

2.1.4 Information sources

Sources of information refer to the motive factors or image forming agents are the powers which impact the creation of perceptions and assessments (Beerli and Martín 2004). A

study conducted among postgraduate students and found that students utilize a mixture of information sources for their research (Saiti and Prokopiadou 2008). Another study regarding the factors affecting distance learning graduate students' use of information sources found that 83.43% of participants used information source on a daily or weekly basis (Liu and Yang 2004). Students tend to search for more information when buying a service such as higher educational services (Simões and Soares 2010). A study reviewing the perceived service quality in HEI found that international students allocate a useful information source while reconsidering perceived service quality (Russell 2005). Koivumäki et al. (2008) were done an empirical study regarding the influence of information quality of mobile services on satisfaction in Finland, thus the results showed that there is a significant correlation between information quality and satisfaction.

The researchers used the information sources variable because it is important to have different sources of information that are reliable and credible so that helping the international students in their decision making and also making sure that they don't make a wrong decision and getting the wrong impression of things. Consequently, international students used different channels of information sources, for example, the internet, university agents, roadshow, brochures, friends, journals, and magazines before studying at any university. Therefore, this study hypothesizes the relationship between information sources and level of satisfaction as follows:

H4 There is a positive relationship between information sources and level of satisfaction.

2.1.5 Service quality

SERVQUAL was created by Parasuraman et al. (1988). SERVQUAL was concerned with five major parameters or dimensions, comprised of tangibility, reliability, responsiveness, assurance, and empathy (Chatterjee et al. 2009; Kumar et al. 2009; Shekarchizadeh et al. 2011; Lupo 2013). Tangibility defined as physical facilities, equipment, and appearance of personnel (Quinn et al. 2009). Likewise, tangibility would be the visible feature of the SERVQUAL that are utilized by universities to enhance international students' satisfaction (Panda and Das 2014). Reliability refers to the ability to achieve the exact required service consistently and dependably (Brochado 2009). Accordingly, the university employees considered as reliable if they offer promised services accurately and attend to the students' in a timely manner as well as student records properly.

Responsiveness refers to the inclination to assist international students and provides services promptly (Gallifa and Batallé 2010). This indicates that the employees required to be more responsive because a prompt response can ensure a student that, the employees are aware of the students' inquiry (Sultan and Wong 2010). Assurance defined as employees knowledge and courtesy and their ability to promote trust and confidence (Quinn et al. 2009; Clewes 2003). Hasan et al. (2009) asserted that assurance is one of the significant dimensions of service quality which signifies that students in HEIs are the concern with the courtesy, knowledge, and ability to build trust and confidence. The last dimension, empathy defined as caring, individualized attention the university provides its students. Hasan et al. (2009) stated that the students' formal and informal approach to their lecturer would lead to higher satisfaction with their college experience.

The adoption of the SERVQUAL model would be regarded as the proper means for assessing the quality of service in an educational context (Yeo and Li 2014; Lee 2007). Jain et al. (2011) have defined educational service quality as an international students' total assessment of services received as part of their experience in the education setting. Furthermore, rendering quality of service is perceived as an essential purpose for HEIs (Russell 2005). Similarly, universities seek to attract the most talented students in a very competitive education marketplace and thus, the notion of service quality in HEIs becomes an essential strategic element to be successful. The researchers of the present study will illustrate the measurement of original five dimensions of service quality originated by Parasuraman et al. (1988).

Yee et al. (2010) stated that service quality is an essential determinant of satisfaction. Scholars found that service quality for the universities positively impacts on student satisfaction (Jiewanto et al. 2012; Annamdevula et al. 2016). Moreover, the quality of the service provided could be tested by assessing student satisfaction, since students are the real customers (Petruzzellis et al. 2006). A quantitative research was conducted a survey with 155 college students that took undergraduate program, which come from two well-known state universities in Indonesia shown that student perceived service quality has a positive significant effect toward student satisfaction thus; any increase in student perceived service quality will result in an increase of student satisfaction (Sumaedi et al. 2011). Moreover, a study was done to examine the impact of service quality on students' satisfaction in HEIs of Punjab province of Pakistan, and found that, the service quality dimensions such as tangible, reliability, assurance, responsiveness and empathy have significant effect on the students' satisfactory level (Malik et al. 2010). Therefore, this study hypothesizes the relationship between service quality and level of satisfaction as follows:

H5. There is a positive relationship between service quality and level of satisfaction.

In the past few decades, researchers and practitioners have paid more attention to service quality due to its robust influence on perceived performance (Santouridis and Trivellas 2010). The quality of service is concerned with the overall perception of the performance of the services provided by the service employees (Yee et al. 2010; Sharma and Dhar 2016). Hossain and Leo (2009) stated that quality of service is a significant measure of performance. In the same vein, Molinari et al. (2008) stressed that service quality is empirically affecting performance. Therefore, this study hypothesizes the relationship between service quality and perceived performance as follows:

H6. There is a positive relationship between service quality and students' perceived performance.

2.1.6 Students' perceived performance

Perceived performance refers to a student's understanding of the assessment of performance quality of the provider such as the university (Baker and Crompton 2000). There is a general consensus among researchers and practitioners that the assessment of individual performance is important (Decramer et al. 2013). Therefore, the performance

of the lecturer is the major factor determining student performance and hence university performance in an educational context (Sukirno and Siengthai 2011). The quality of service performance is an essential marketing factor that assists develop individual satisfaction (Jiang and Rosenbloom 2005).

When perceived performance meets or exceeds the student's expectations satisfaction will result. Likewise, dissatisfaction results if expectations exceed perceived performance (Elliott and Shin 2002; Arambewela and Hall 2009). Similarly, good performance raises individuals satisfaction but on the other hand, bad performance lowers the individual satisfaction (James 2011). Johnson and Sohi (2014) stated that there is a positive linkage from performance to satisfaction. Therefore, the researchers decided to utilize the perceived performance as an independent variable due to the fact that, higher satisfaction occurs if the perceived performance meets or exceeds the international student's expectations. As employee performance quality is significant in the business environment such as HEIs, it is vital that the employees at the university learn and use the mechanism that will help to improve their performance so that they are capable to fulfill the students' needs and wants. Therefore, this study hypothesizes the relationship between students' perceived performance and level of satisfaction as follows.

H7. There is a positive relationship between students' perceived performance and level of satisfaction.

Rodríguez-Ardura and Meseguer-Artola (2017) stated that academic performance contribute positively to students' continuance intention of further study. The study investigated the continuous usage of e-learning systems and indicated that performance positively influences customer satisfaction and continuance intentions in the higher education context (Wu et al. 2006). Similarly, a study by Chen et al. (2018) stressed that performance has a positive impact on continuance use. For instance, when students feel that a web-based learning management platform helps them improve in terms of learning efficiency and productivity they will be more willing to continuously use the platform. Therefore, performance is a key factor affecting satisfaction and continuance intention. Another study was done to examine regarding the involvement of members in the continuance of knowledge expansion via online society and found that continuance intention is positively affected by performance expectancy (Chou et al. 2010). Likewise, Yang and Lin (2015) stated that performance would affect the users' continuance intention. Therefore, this study hypothesizes the relationship between students' perceived performance and continuance intention of further study as follows.

H8. There is a positive relationship between students' perceived performance and continuance intention of further study.

2.1.7 Level of satisfaction

The theory of expectation confirmation (ECT, also called expectation disconfirmation theory) originates from Oliver (1977) and Oliver (1980) in his study on customer satisfaction in the area of marketing (Tao et al. 2009; Jin et al. 2013). ECT illustrates that satisfaction is attained when expectations are fulfilled, that negative disconfirmation of expectations will

result in dissatisfaction, and that positive disconfirmation will result in enhanced satisfaction (Ndubisi 2012). Similarly, according to Al-Maghrabi et al. (2011), ECT also assists to predict consumer behavior prior, during, and after purchase, in terms of products and services. In the same vein, if the levels of satisfaction of international students regarding the services at the HEIs are high, then their level of satisfaction will rise but if they are low, then their satisfaction level will decline over time. ECT consists of four constructs: expectation, performance, confirmation/disconfirmation and satisfaction (Chou et al. 2012). Thus, the primary notion of ECT is satisfaction because satisfaction is considered as a principle to locking in consumers (Jung 2011). Moreover, ECT is widely used in consumer behavior literature across industries to investigate satisfaction, loyalty or repurchase, and their antecedents (Lin et al. 2009; Bhattacharjee 2001). Therefore, this study intends to apply the ECT theory to international undergraduate and postgraduate students in the Malaysian higher educational context. Satisfaction can be defined as “the evaluations of a product or service with regard to their needs and expectations” (Bai et al. 2008, p. 393). There are a number of ways that HEI’s can benefit due to satisfying the international students such as less dropout, to attain higher grades, involve in positive word of mouth and collaborate with the institution (Wilkins and Balakrishnan 2013; Alves and Raposo 2007). Conversely, the dissatisfaction of students could have ominous consequences for both the institution and the students, for example, unsuccessful students, students quitting or transferring and more importantly negative word of mouth (Grebennikov and Shah 2013).

A study (Duque 2014) has stressed that the quality of perceptions of HE has an influence on students’ satisfaction. Likewise, Butt (2010) claimed that HEIs are concentrating on recognizing and satisfying the desires, needs, and expectations of students; so, these factors are the academic success, the performance of the faculty, facilities, and reputation of the universities. Therefore, the researchers used level of satisfaction variable, because by knowing the satisfaction level of international students, it helped to develop their self-confidence, skills, and knowledge. Shahijan et al. (2016) stated that international student’s satisfaction is considered as a key element of continuance intention. A study revealed that users e-learning continuance intention positively influenced by satisfaction (Chiu et al. 2005). A study regarding users e-learning continuance intention with different levels of experience found that continuance intention directly influenced by satisfaction for users who have low experience than for users with high experience (Lin 2011). Another similar study was done by Lee (2010) and the findings illustrated that satisfaction has the most significant influence on users’ continuance intention. Kaewkitipong et al. (2016) confirmed that continuance intention positively influenced by satisfaction. Conversely, study examined the incentives underlying lecturers’ continuance intention using communication technology in HE and revealed that there is no significant relationship between satisfaction and intention to continue (Bøe et al. 2015). Therefore, this study hypothesizes as follows.

H9. There is a positive relationship between the level of satisfaction and continuance intention of further study.

2.2 Research method and data analysis

In order to test the theoretical model (Fig. 1), this study employed quantitative research method and the online questionnaire was used to provide statistical analysis. This study

has established the population as those international undergraduate and postgraduate students studying in Peninsular Malaysia. The target population is the international students regardless of their citizenship or country of residence. Malaysia is attempting to increase the number of international students in its higher educational institutions to 200,000 students by the year 2020, pushing Malaysia to become the education hub in the region (Inayatullah and Milojevic 2014). Hence, it is significant for the universities to provide excellent services to international students. Therefore, the researchers have selected the sample based on experience or knowledge of international undergraduate and postgraduate students regarding the quality of services in public and private higher education institutions. Thus, the data collected from international undergraduate and postgraduate students at top public universities, (UTM, UM, UPM, UKM, UITM and IIUM) and private universities (MMU, UNITEN, Taylors University, Sunway University, Limkokwing University and UCSI University) in Peninsular Malaysia as the setting due to their having more international students.

The online questionnaire was divided into two parts. The initial part designed to attain demographic information and subject details of international students. Table 2 illustrates the respondents' demographic profile. The measurement items were derived from the prior researches in order to measure the constructs. To measure university image, five items were adapted from prior studies (Wu 2014; Richard and Zhang 2012); to measure students' expectation, four items were adopted (Adcroft 2011); to measure past student experience, four items were adopted (Kang and Gretzel 2012); to measure information sources, five items were adopted Frías et al. (2008); to measure service quality, seventeen items were adopted (Gallifa and Batallé 2010; Nadiri et al. 2009; Shekarchizadeh et al. 2011; Udo et al. 2011); to measure students' perceived performance, five items were adopted (Hartog et al. 2013; Bowra et al. 2012); to measure level of satisfaction, four items were adopted (Lee et al. 2011; Wilkins and Balakrishnan 2013); to measure continuance intention of further study, three items were adapted from prior studies (Chang 2013; Bhattacharjee 2001; Alraimi et al. 2015). Therefore, "Appendix" indicates the measurement items and their sources.

Table 2 Demographic profile of respondents ($N=535$)

		Characteristic	Frequency	Percent
1	Gender	Male	283	52.9
		Female	252	47.1
2	Age	20 and below	92	17.2
		21 to 30	163	30.5
		31 to 40	219	40.9
		41 to 50	55	10.3
		50 and above	6	1.1
3	Marital Status	Single	94	17.6
		Married	192	35.9
		Not stated	249	46.5
4	Type of Institute	Public	221	41.3
		Private	314	58.7
5	Education Level	Bachelor's Degree	124	23.2
		Master's Degree	266	49.7
		Doctoral Degree (PhD, DBA)	139	26.0
		Postdoctoral	6	1.1

Scholars stressed that, for pilot studies, sample sizes of 10 to 30 are sufficient (Hill 1998; Hashim 2010). Thus, this study employed an online pilot questionnaire survey before conducting the actual questionnaire survey, through which ($N = 30$) questionnaires were completed by international undergraduate and postgraduate students from public and private universities in Malaysia, in order to ensure that the questionnaire design, wording, and measurement scales are appropriate. Moreover, all respondents were asked to give their comments and feedback about the questionnaire. Subsequently, some revisions were made in order to avoid ambiguity. A total of 625 online questionnaires were distributed among international students in Malaysia, from which 545 questionnaires were obtained. Out of 545 questionnaires tenth of them was not filled completely. Therefore, the total valid questionnaires were 535 (response rate: 87.2%).

2.2.1 Structural equation modeling (SEM)

Structural equation modeling (SEM) has become one of the most significant methods of advanced statistical analysis techniques, which has been used in a variety of contexts such as psychology management, tourism management and marketing (Reinartz et al. 2009). There are various techniques for estimating SEM comprised of latent variable analysis, analysis of covariance-based, as well as variance-based structural equation modeling, namely PLS-SEM (Sarstedt et al. 2014). SEM can be assessed in two different phases, the first phase is the measurement model which is focusing on the reliability and validity of the items and the second phase is the structural model (Rezaei and Ghodsi 2014; Henseler and Chin 2010; Chin 2010). Thus, this research paper has used ADANCO 2.0.1 version (Henseler and Dijkstra 2015), which is an advanced technique to variance based structural equation modeling (VB-SEM) approach, to examine simultaneously the structural components of both the construct validity and structural model.

The confirmatory factor analysis must be assessed before testing the measurement model (Koufteros 1999; Anderson and Gerbing 1988). The construct reliability was considered by assessing the average of Dijkstra-Henseler's rho (ρ_A), Jöreskog's rho (ρ_c), Cronbach's alpha (α) and the average of variance extracted (AVE) and composite reliability. Table 3 indicated the construct reliability of latent constructs. Thus, the findings of current study affirmed the high constructs reliability as they were consistent in demonstrating the variances. One of the criteria for the construct reliability is known as AVE. AVE values are well greater than the threshold of 0.5 is recommended cut-off point for a reliable construct (Fornell and Larcker 1981) then it meant that there is convergent validity for the construct (Chang and Fong 2010). Furthermore, the discriminant validity based on cross loading criteria was also established.

Discriminant validity focuses on whether one can empirically differentiate the construct from other constructs (Lee et al. 2005; Chang et al. 2007). The correlation between constructs less than 1.0 demonstrates discriminant validity (Boyar et al. 2007) and discriminant validity is affirmed when the AVE score among two constructs exceeds the value of the squared correlations (Verhagen and Dolen 2009). As indicated in Table 4, the values of squared correlation were lower than this score. Therefore, based on the results of this research all the constructs were considered distinct constructs. Besides, evaluation of the discriminant validity of latent constructs according to Fornell–Larcker criterion, Table 5 exhibits the discriminant validity based on Heterotrait–Monotrait Ratio of Correlations (HTMT). The criterion for HTMT was

Table 3 Construct reliability

Construct	Indicator	Loadings	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	Cronbach's alpha(α)
SQT	SQT1	0.849	0.817	0.888	0.810
	SQT2	0.804			
	SQT3	0.900			
SQR	SQR1	0.857	0.738	0.830	0.692
	SQR2	0.620			
	SQR3	0.868			
SQRP	SQRP1	0.869	0.841	0.903	0.840
	SQRP2	0.852			
	SQRP3	0.890			
SQA	SQA1	0.812	0.801	0.874	0.788
	SQA2	0.868			
	SQA3	0.827			
SQE	SQE1	0.818	0.847	0.885	0.830
	SQE2	0.863			
	SQE3	0.803			
	SQE4	0.761			
UI	UI1	0.755	0.955	0.937	0.917
	UI2	0.859			
	UI3	0.914			
	UI4	0.919			
	UI5	0.872			
SE	SE1	0.885	0.859	0.903	0.856
	SE2	0.853			
	SE3	0.845			
	SE4	0.758			
PSE	PSE1	0.877	0.849	0.906	0.845
	PSE2	0.865			
	PSE4	0.878			
SAT	SAT1	0.892	0.894	0.925	0.893
	SAT2	0.868			
	SAT3	0.870			
	SAT4	0.849			
CIFS	CIFS1	0.826	0.670	0.957	0.663
	CIFS3	0.733			
SPP	SPP1	0.901	0.955	0.953	0.935
	SPP2	0.901			
	SPP4	0.927			
	SPP5	0.927			
IS	IS1	0.825	0.877	0.905	0.870
	IS2	0.783			
	IS3	0.860			
	IS4	0.819			
	IS5	0.764			

met as the values were below 0.85 (Kline 2015; Clark and Watson 1995) or 0.90 (Gold and Malhotra 2001; Teo et al. 2008).

Table 4 Discriminant validity: Fornell-Larcker criterion

Construct	SQT	QR	QRP	SQA	SQE	Level of Satisfaction	CIFS	SPP	University Image	Students' Expectation	Past Student Experience	Information Sources
SQT	0.726											
QR	0.458	0.624										
QRP	0.474	0.654	0.757									
SQA	0.422	0.406	0.520	0.699								
SQE	0.127	0.110	0.126	0.132	0.659							
Level of Satisfaction	0.082	0.107	0.097	0.098	0.406	0.756						
CIFS	0.033	0.052	0.040	0.029	0.177	0.487	0.610					
SPP	0.002	0.005	0.001	0.011	0.007	0.060	0.324	0.835				
University Image	0.013	0.011	0.008	0.008	0.001	0.080	0.045	0.016	0.749			
Students' Expectation	0.014	0.034	0.028	0.050	0.132	0.270	0.186	0.055	0.031	0.700		
Past Student Experience	0.120	0.130	0.159	0.137	0.367	0.441	0.169	0.006	0.024	0.153	0.763	
Information Sources	0.082	0.071	0.079	0.085	0.252	0.315	0.173	0.049	0.023	0.240	0.235	0.657

*Squared correlations; AVE in the diagonal

**Students' Perceived Performance (SPP)

Table 5 Discriminant Validity: Heterotrait-Monotrait Ratio of Correlations (HTMT)

Construct	SQT	SQR	SQRP	SQA	SQE	Level of Satisfaction	CIFS	STPP	University Image	Students' Expectation	Past Student Experience
SQT											
SQR	0.764										
SQRP	0.832	0.847									
SQA	0.781	0.805	0.820								
SQE	0.418	0.421	0.413	0.431							
Level of Satisfaction	0.333	0.409	0.361	0.372	0.730						
CIFS	0.309	0.417	0.344	0.269	0.709	0.717					
STPP	0.052	0.089	0.026	0.144	0.087	0.262	0.703				
University Image	0.145	0.135	0.110	0.114	0.019	0.296	0.346	0.120			
Students' Expectation	0.138	0.225	0.197	0.263	0.412	0.595	0.762	0.253	0.190		
Past Student Experience	0.413	0.457	0.475	0.445	0.707	0.763	0.690	0.073	0.167	0.458	
Information Sources	0.344	0.338	0.334	0.353	0.576	0.634	0.713	0.234	0.153	0.566	0.560

The criterion for HTMT is below 0.85 (Kline 2001) or 0.90 (Gold and Malhotra 2001; Teo et al. 2008)

When the construct measures have been confirmed as reliable and valid, the next step is to evaluate the structural model results which imply examining the model's predictive capabilities and the relationships (the path coefficients) between the constructs (Shahijan et al. 2014). Table 6 indicated the coefficient of determination (R^2). According to Hair et al. (2011), the direct effects were tested using two-tailed tests comprised of 5 and 1% significance level, and the statistical findings indicated that three of the hypotheses are not supported. The coefficient of determination for endogenous latent construct shows a value of 0.597 (level of satisfaction), 0.656 (continuance intention of further study) and 0.082 (students' perceived performance). Table 7 illustrates the effect overview. Each hypothesis was tested using SEM and by looking at the original coefficients, the estimated path effects are given along with their degree of significance (Saadé and Bahli 2005). Path loading and t-statistics for hypothesized relationships were calculated using a bootstrapping technique (Lai et al. 2007). Therefore, Table 8 exhibits the relationships among constructs and hypothesis testing (Direct Effects Inference). The next section will elaborate the results and also the implications.

3 Discussion

This study is aimed to measure the international students' total experience in the Malaysian public and private HEIs. A theoretical model was proposed and a questionnaire was developed. This study was conducted in Malaysia, which is considered as a regional education hub. Theoretically, different types of theories such as IS continuance theoretical model, SERVQUAL, image formation and the theory of expectation confirmation were used in order to explain the constructs and service quality dimensions' relationships in the framework for the purpose of filling the research gap. The image is important for the institutions of HE because it helps create a positive view of the organization (Pampaloni 2010). In the same vein, Quintal et al. (2012) asserted that university image plays an important role in determining the student's overall satisfaction with an educational institution. Students' expectations are important in their academic career (Ma 2001). Moreover, Froiland and Worrell (2016) emphasized that expectations for long-term educational achievement are a significant precursor of attainment in different academic subjects. Sultan and Wong (2013) asserted that past student experience and interaction with the university was found to be important. Likewise, the study pointed out that students with past experience in learning in massive open online courses were very active and involved in the course (Kop et al. 2011). Kuh (2001) stressed that information sources can steer institutions to the special contexts such as educational practice where advance learning can be made.

The image of universities is obtaining greater consideration as universities identify the significance of attracting international students in the competitive market (Duarte

Table 6 Coefficient of determination (R^2)

Construct	Coefficient of determination (R^2)	Adjusted R^2
Level of Satisfaction	0.597	0.591
CIFS	0.656	0.654

Table 7 Effect overview

Effect	Beta	Indirect effects	Total effect	Cohen's f^2
Service Quality -> SQT	0.901		0.901	4.329
Service Quality -> SQR	0.883		0.883	3.536
Service Quality -> SQRP	0.920		0.920	5.522
Service Quality -> SQA	0.823		0.823	2.091
Service Quality -> SQE	0.556		0.556	0.448
Service Quality -> Level of Satisfaction	0.139	0.004	0.134	0.033
Service Quality -> CIFS		0.062	0.062	
Service Quality -> Students' Perceived Performance	0.041		0.041	0.001
Level of Satisfaction -> CIFS	0.594		0.594	0.962
Students' Perceived Performance -> Level of Satisfaction	0.109		0.109	0.027
Students' Perceived Performance -> CIFS	0.424	0.065	0.489	0.490
University Image -> Level of Satisfaction	0.160	0.008	0.169	0.058
University Image -> CIFS		0.132	0.132	
University Image -> Students' Perceived Performance	0.075		0.075	0.006
Students' Expectation -> Level of Satisfaction	0.190	0.019	0.209	0.063
Students' Expectation -> CIFS		0.198	0.198	
Students' Expectation -> Students' Perceived Performance	0.174		0.174	0.024
Past Student Experience -> Level of Satisfaction	0.407	0.008	0.399	0.252
Past Student Experience -> CIFS		0.208	0.208	
Past Student Experience -> Students' Perceived Performance	0.069		0.069	0.003
Information Sources -> Level of Satisfaction	0.170	0.019	0.189	0.044
Information Sources -> CIFS		0.185	0.185	
Information Sources -> Students' Perceived Performance	0.173		0.173	0.021

et al. 2010; Sung and Yang 2008). Consistent with the arguments of this study, Stephenkova and Mills (2010) stated that students who are more knowledgeable about an organization such as university tend to have more favorable images of it. Kheiry et al. (2012) conducted a study in Iran by measuring the university image and students satisfaction. They found that image of the university has a meaningful effect on the satisfaction of students. Based on the concept of expectation, a case study in HE suggested that an expected high pass mark caused the good students to carry out the process better and the poor students to perform worse (Cheruvath 2012). Moreover, Crossman and Bordia (2008) asserted that fulfillment of student expectation leads to satisfaction with educational services. Taylor and Drury (2005) stressed that students' past experiences have been acknowledged to some extent in developing teaching strategies to integrate with curriculum material. A study about the course and lecturer characteristics and international student perceptions of learning found that past experience with online courses was significantly affected with student learning and satisfaction (Arbaugh and Duray 2001). A study asserted that students see the administration service as the authoritative source of information on matters relating to their studies and place high importance on a good advice (Tsinidou et al. 2010). Similarly, another

Table 8 Direct Effects Inference

Hypotheses	Original coefficient	Standard bootstrap results				Decision
		Standard error	t-value	p-value (2-sided)	p-value (1-sided)	
Service Quality -> Level of Satisfaction	0.139	0.038	3.654	0.000	0.000	Supported
Service Quality -> SPP	0.041	0.056	0.729	0.466	0.233	Not Supported
Level of Satisfaction -> CIFS	0.594	0.029	20.228	0.000	0.000	Supported
SPP -> Level of Satisfaction	0.109	0.030	3.660	0.000	0.000	Supported
SPP -> CIFS	0.424	0.037	11.505	0.000	0.000	Supported
University Image -> Level of Satisfaction	0.160	0.030	5.309	0.000	0.000	Supported
University Image -> SPP	0.075	0.048	1.557	0.120	0.060	Not Supported
Students' Expectation -> Level of Satisfaction	0.190	0.035	5.409	0.000	0.000	Supported
Students' Expectation -> SPP	0.174	0.052	3.334	0.001	0.000	Supported
Past Student Experience -> Level of Satisfaction	0.407	0.043	9.356	0.000	0.000	Supported
Past Student Experience -> SPP	0.069	0.060	1.144	0.253	0.126	Not Supported
Information Sources -> Level of Satisfaction	0.170	0.037	4.557	0.000	0.000	Supported
Information Sources -> SPP	0.173	0.059	2.912	0.004	0.002	Supported

Students' Perceived Performance (SPP)

For two-tailed tests: *1.96 (5% significance level), **2.57 (1% significance level)

study regarding the quality of information and satisfaction indicated that information play more crucial roles in increasing individual satisfaction on online services web sites (Ghasemaghaei and Hassanein 2015).

Quality of service is a significant element in every service marketing program (Min and Khoon 2014), especially educational services. This article confirms the study done by Arokiasamy and Abdullah (2012) who found that international students are more satisfied compared to Malaysian students with reliability and responsiveness and also the assurance of services provided. Similarly, the current study by researchers is in line with the previous study done by Mansori et al. (2014) who found that tangibility has a strong impact directly and indirectly on the students' intention to continue their education. The findings of the recent study support prior studies' results and also provide further insights. Furthermore, there is a direct and positive effect on performance and satisfaction which can be significant (Christen et al. 2006). Lin et al. (2013) stressed the engagement among students in the online social network can assist them to obtain social acceptance and also adapt to the culture of the university, which, in turn, enhances the students perceived performance proficiency. Satisfaction of international students is the barometer of educational service quality and it has attracted greater attention of the HEIs in their pursuit of competitive edge (Arambewela and Hall 2006). Lin

et al. (2011) asserted that a high level of student continuance intention is also a reflection that the program is well-designed and implemented.

This research paper presents managerial implications for the public and private HEIs in Malaysia. Based on the result, university image has a positive relationship with level of satisfaction. Therefore, the researchers suggest that service providers and managers better focus on the universities' ranking, scholarships, and the location; as most international students prefer urban universities because the international students' life in urban universities matter, and it is significantly impacted by the city where the particular university is located, the size of the city, the cultural life, and the geography. Perhaps, the surrounding is more diverse for international students in large urban universities compared to those universities in rural areas and small towns. Similarly, students' expectation is another construct which has the positive relationship with the level of satisfaction. It is important for managers to understand that different international students have different expectation levels due to having different life styles. Past student experience also has a positive relationship with the level of satisfaction, the students' past experiences will impact their decision-making process if and when these people decide to select an overseas university again (Gatfield and Chen 2006). Therefore, it is significant for the managers and service providers to alter the bad past experience and instead provide the international students with good services such as scholarships, accommodation, facilities and etc., which can enhance their experiences. Information sources have a positive relationship with the level of satisfaction. Therefore, the researchers suggest that managers and service providers better concentrate more on using sources such as the internet, agents, road shows, friends and relatives, journals, magazines and etc. for influencing the images and decisions of the international students before entering to the particular country to pursue their studies (Baloglu and Mangalolu 2001). It is significant for the educational service providers and managers to emphasize more on responsibility and tangibility dimensions these items are significant for the international students, including three other dimensions which are reliabilities, assurance, and empathy, if Malaysia wants to become an education hub by 2020.

The university's staffs need to be motivated to improve and perform well so that they could be able to fulfill the student's needs, wants and desire. Therefore, the quality of staff performance is significant in the business context such as university and also the students, and in the same way, the international student performance is significant to the universities as well (Quinn et al. 2009). If Malaysia wants to become an HE destination, then HE service providers and managers is required to absorb more international students as well as members of the international staff. More importantly, offer them scholarships especially for doctorate international students in order to satisfy them. They also need to establish more educational promotion centers, like the ones they have established in Jakarta (Indonesia), Dubai (UAE), Beijing (China) and Ho Chi Minh in (Vietnam). Perhaps, they can focus more on educational promotion centers in Central Asian countries such as Turkey or Uzbekistan and etc. Lastly, students' level of satisfaction is an important driver of continuance intention of further study, which in turn leads to increased revenues and profitability of the university.

This study has some limitations, and some areas have been left for future research that should be considered. The result of this research can be applied to HEIs in Malaysia and other countries, and it will be helpful as well. The sample size of the study was limited to 535 responses which are limited. Therefore, future studies can use the proposed

theoretical research framework and measure it by targeting larger sample size with the expansion of a longitudinal data. Similarly, this empirical study concentrated on the total experience of international undergraduate and postgraduate students in Malaysia; thus, future studies can focus on international students in foreign universities or colleges with campuses in Malaysia, or replicate the same study in other countries or even industries. Future study should measure service quality on the other stakeholders of universities, for example, international exchange students, part-time international students or even the parents, administrative staff and academic staff. As mentioned, this study has focused on 12 public and private universities in Peninsula Malaysia or west Malaysia, therefore, the future study can conduct an empirical research on student's service quality perception of universities in East Malaysia, located in Sabah, Sarawak, and Labuan. Likewise, future studies can also conduct mixed methods approach (qualitative and quantitative) studies on the international lecturers' total experience or attitudes and behavior towards Malaysian public and private universities.

Appendix

Table 9 Measurement Items

Construct	Measurement Items	Source
1 University Image	<p>UI1 I have always had a good impression of this university.</p> <p>UI2 I believe that this university has a better image than other universities.</p> <p>UI3 In my opinion, this university has a good image in the minds of their international students.</p> <p>UI4 How would you describe your overall perceptions about the image of this university?</p> <p>UI5 In general, what do your friends or relatives say about the image of this university?</p>	Wu (2014); Richard and Zhang (2012)
2 Students' Expectation	<p>SE1 I believe that I will get good marks on my degree.</p> <p>SE2 I am confident that I can learn the basic concepts taught in the degree program.</p> <p>SE3 I am confident that I can understand the most complicated material that will be presented by my lecturers on this degree program.</p> <p>SE4 I expect to do well in my degree.</p>	Adcroft (2011)
3 Past Students Experience	<p>PSE1 I learned many different things at the universities in Malaysia.</p> <p>PSE2 I gained information and knowledge about Malaysia as a study destination.</p> <p>PSE3 I enjoyed being in Malaysia as an international student.</p>	Kang and Gretzel (2012)

Table 9 (continued)

Construct	Measurement Items	Source
4 Information Sources	PSE4 During my study, I got so involved that I forgot everything else.	Frías et al. (2008)
	IS1 How much attention did you pay to the information found on the internet?	
	IS2 How much did you notice the information provided by your education agents?	
	IS3 How much did you concentrate on the information provided by commercial brochures?	
	IS4 How much did you concentrate on the information provided by news media?	
5 Service Quality	IS5 How much did you concentrate on the information provided by family, relatives, and colleagues?	Gallifa and Batallé (2010); Nadiri et al. (2009); Shekarchizadeh et al. (2011); Udo et al. (2011)
	Tangibility:	
	SQT1 University has the modern looking equipment and technology.	
	SQT2 University's physical facilities are visually appealing.	
	SQT3 The staff and lecturers are neat in appearance.	
	Reliability:	
	SQR1 The lecturers consistently provide good lectures.	
	SQR2 The lecturers are dependable.	
	SQR3 The lecturer's reliably correct information when needed.	
	Responsiveness:	
	SQRP1 The lecturers quickly and efficiently respond to the international student needs.	
	SQRP2 The lecturers are willing to go out of his or her way to help the international students.	
	SQRP3 The lecturers always welcome the international student questions and comments.	
	Assurance:	
	SQA1 The teaching capacity, the methodology used, and communication by the lecturers was appropriate.	
	SQA2 The lecturer had sufficient knowledge and skills.	
	SQA3 The staff and lecturers at the university were friendly and amiable to the international students.	
	SQA4 The contents of the subject were suitable.	
	Empathy:	
SQE1 The lecturers are genuinely concerned about the international students.		
SQE2 The lecturers understand the individual needs of the international students.		
SQE3 The lecturers have the international student's best long-term interests.		

Table 9 (continued)

Construct	Measurement Items	Source
6 Students' Perceived Performance	SQE4 The lecturers encourage and motivate the international students to do their best.	Hartog et al. (2013); Bowra et al. (2012)
	SPP1 My performance is better than that of my classmates with similar qualifications.	
	SPP2 My performance is better than that of international students with similar qualifications in other universities.	
	SPP3 The performance of my university is better than that of other universities in Malaysia.	
	SPP4 My university offers opportunities to learn new things.	
7 Level of Satisfaction	SPP5 My university offers equal opportunities to international students here regardless of gender, ethnicity, nationality, sexual orientation, or religion.	Lee et al. (2011); Wilkins and Balakrishnan (2013)
	SAT1 Overall, I am very satisfied with my university.	
	SAT2 My choice of university was a wise decision.	
	SAT3 My program offers good value for money.	
8 Continuance Intention of Further Study	SAT4 I felt comfortable on campus.	Chang (2013); Bhattacharjee (2001); Alraimi et al. (2015)
	CIFS1 I intend to continue my study in the future.	
	CIFS2 I will continue my study in the future.	
	CIFS3 I will strongly recommend others for further study.	

Seven scales Likert Scale: "strongly disagree, disagree, somehow disagree, neutral, somehow agree, agree, and strongly agree"

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