

Advertising online by educational institutions and students' reaction: a study of Malaysian Universities

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ABSTRACT

This paper mainly aims to identify the impact of online advertising on students' decision-making and their choice of higher education institutions. Data for this study were collected from 350 students from various Malaysian universities using self-administered questionnaires. The acquired data went through an exhaustive process to ensure that it was ready for analyses in SPSS and AMOS software. Factor analysis was used to extract the significant constructs underlying the data followed by a two-stage structural equation modeling in order to examine the fitness of the proposed model and test the hypotheses. The results revealed that social media and websites positively affect students' decision-making, which then significantly impact students' choice of a particular university. This research has invaluable implications for policy-makers, especially in the education industry of Malaysia. It is hoped that the findings of this study can be considered while making marketing plans for an educational institution.

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Introduction

During the last decade, substantial changes took over the higher education market, in terms of policy, governance, structure, and status, which have a significant impact on the higher education institutions' operating system (Austin & Jones, 2016). Higher education was more of a supply-sided market with a limited marketing strategy (Dönmez, 2011). However, it was no longer considered suitable and a need to replace it with a more student-centric approach with the focus on satisfaction of students was argued (Alexa, Alexa, & Stocia, 2012).

Several research studies on the university's recruitment process have shown the potential of online advertising when used as a recruitment tool (Hemsley-Brown & Oplatka, 2006). Further, online advertising also covered the gaps in the informational needs of the students (Hemsley-Brown & Oplatka, 2006). Therefore, engaging online advertising tools such as social media, websites, and display ads into the university's advertising plan is found to be an essential step, due to the immense number of students who are

responsive to online advertising (Constantinides & Stagno, 2012; Hemsley-Brown & Oplatka, 2006).

According to the Malaysian Communications and Multimedia Commission (2014), the number of Internet users from different age groups is significantly increasing in Malaysia. For example, according to the statistic provided in the aforementioned research, 77.2% of daily users of the Internet in Malaysia are from the age group of 16–24 years, followed by 66.6% from the age bracket of 35–44 years. This particular information clearly signifies the importance of online advertisements and the role they play in making people choose different products and services. Therefore, this paper aims to investigate the effects of each of the online advertising aspects (social media, websites, and display ads) on students' decision-making process and ultimately on their choice of a university. There are many research studies (see e.g. Beal, 2014; Constantinides & Stagno, 2012; Evans, 2009; Kang, 2011; Tavor, 2011) conducted on the said factors individually by investigating their impact on students' decision-making and choice; however, this study combines these inevitable factors into one comprehensive model and tests it in the higher education institutions of Malaysia.

Objectives of the study

The general objective of the paper is, first, to extract those imperative factors from the extant literature that are related to online advertising; second, to develop a hypothetical linkage in light of the literature; and third, to propose a conceptual model combining all the important factors with their impact on students' decision and choice. The specific objectives of the study are as follows:

1. To analyze the effect of social media on students' online decision-making process.
2. To find out the impact of the university website's design and content on students' online decision-making process.
3. To identify the impact of display ads' design and positioning on students' choice of university.
4. To investigate the impact of students' decision-making process on students' choice of higher educational institution.

Literature review

Evans (2009) viewed online advertising from a higher education perspective as an excellent way to inform the public about the university and its related benefits. Online advertising relies on the contextual and behavioral targeting of students (Kireyev, Pauwels, & Gupta, 2013; Trusov, Ma, & Jamal, 2016), and helps to create customized ads using different advertising approaches to provide a low-cost, widespread advertisement for the higher education institution (Evans, 2009).

This following section mainly discusses the three main online advertising aspects of this study: social media, websites, and display ads, in order to highlight their impact on students' decision-making process and choice.

Social media

Social media comprises activities that involve socializing and networking online through words, pictures, and videos, following a two-way dialog that allows creating and exchanging content generated by users on the web (Alexa et al., 2012; Evans, 2009; Jandal, 2011). Social networks are the part of social media that most universities rely on to attract students who gather in communities to share interests, ideas, and opinions, and look for academic products and services online (Beal, 2014). The most popular social networking communities are Facebook, MySpace, Twitter, YouTube, etc.

Kang (2011) described the use of a social networks system as an advertising tool by a university in a case study. His findings confirmed a strong relationship between the number of students who visited the page of the university on the social network frequently and their likelihood of applying to this same university. Alexa et al. (2012) added to the previous findings that the displayed links via MySpace or Facebook pages permit the visitors to share information in a fast and easy way by bookmarking as favorites, liking, or re-tweeting each other's profiles. The aforementioned, according to Constantinides and Stagno (2012) allows the advertisement about the university to reach as many students as possible within short notice and leads to an increase in the number of students.

Many universities have their own Twitter feeds, Facebook pages, and even forums which are being used as tools to improve and increase the level of communication with students in order to influence their choices (Constantinides & Stagno, 2012; Evans, 2009). Further, McMillan (2007) highlighted that online forums are used by universities in the USA to recruit international students for their bachelor programs, and to target foreign students. It is also because of the fact that youth are adopting technology, particularly social media, very actively (Jan, Abdullah, & Momen, 2015). The introduction of these online forums resulted in an increase in the number of international students applying for those bachelor programs. Based on the above literature review, it is hypothesized that:

H1: Social media has a positive impact on students' decision-making process.

Websites

A university's image can be measured and interpreted through its website (Sung & Yang, 2008). According to Kang (2011) and Jager and Jan (2015), 'University image' is the result of a collective process reflected on its website where students compare and contrast many programs and curricula. Since attracting a large number of students online has become a huge marketing priority and challenge at the same time, it is, therefore, important to have these kinds of facilities because of their significant impact on students' attraction and satisfaction towards that particular institution (Jager & Jan, 2015). Similarly, visualization is also a very effective tool to attract both international and local students (Beal, 2014; Ratliff & Rubinfeld, 2010). Further, Stack (2016) also stated that visuals are considered as an alternative way of communicating information while supporting the written content within the university's site.

Stack (2016) insisted that every university website should aim to provide clear and accessible information in the simplest way, and promote the university as the best user experience in students' minds. Sung and Yang (2008) shared the same opinion and

elaborated further that every university must come up with its own, personalized website for different user groups, which reflects the harmony in the university's virtual architecture and demonstrates various departments. Based on the literature discussed above, it is, therefore, hypothesized that:

H2: A university website's design and content has a positive impact on students' online decision-making process.

Display ads

Online display advertising is all about utilizing the Internet as an advertising intermediary, where the promotional messages appear on other websites or search engine results pages (Beal, 2014; Evans, 2009; Kang, 2011). Jandal (2011) and Tuten (2008) defined an online display ad as an affordable way to target the exact customer group that has a double advantage: precision in targeting the right audience, and the ability to cover and reach a wide target market. Display ads, therefore, could be a very effective tool to reach the right segment, which in the present study is potential students, and also to market to them the right product/service.

Sigel, Braun, and Sena (2008) pointed out that if the design of an ad is complex and involves animations, its effectiveness decreases because of the lack of focus on content. Similarly, the placement of an ad in the advertiser's page is no less crucial (Beal, 2014; McMillan, 2007; Tuten, 2008). Usually, home pages get the most traffic, but other web pages may attract more targeted students (Kireyev et al., 2013; McMillan, 2007; Sigel et al., 2008; Tavor, 2011). Sigel et al. (2008) also insisted that the content and the message in an ad should be clear and brief, highlighting the type of offer in order to catch the attention of students and make them go to the university's website. Once the university is successful in attracting potential students using effective display ads on highly trafficked websites, it may lead to visiting the university's own website and eventually a better chance of influencing their decisions and ultimate choice.

Based on the above discussion extracted from the literature, it is hypothesized that:

H3: A display ad's design and positioning has a positive influence on students' online decision-making process.

Online decision-making process

According to Darban and Li (2012), a student's decision-making process drives almost every phase of a student's choice of university. The need for a recognition phase helps shape students' needs by making them aware of the institution (Dönmez, 2011). Coulter and Collins (2011) also agreed that searching online for information about a university is one of the most impactful phases of students' choice. Students would ask their friends for advice and recommendation via social networks and consult the university pages and website (Coulter & Collins, 2011; Dönmez, 2011; Jandal, 2011; Tavor, 2011). Similarly, Evans (2009) and Joshi and Hanssens (2010) highlighted that friends and other people online can be significantly helpful in exchanging thoughts and ideas about the university, which eventually will lead to the students making a decision about the respective university. These studies lead to the following hypothesis:

H4: Students' online decision-making process has an impact on students' choice of higher education institutions.

Proposed research model

After an extensive review of the literature, the proposed model emerged containing five variables: social media (SM), websites (W), display ads (DA), students' decision-making process, and students' choice of university. The proposed research model and the relationships to be tested are shown in Figure 1.

The foundation of the conceptual model of this research is that of the classical purchase behavior model by Butler and Peppard (1998) where five important sequential stages are highlighted. In this research, the three independent variables (SM, W, and DA) are related to the 'information search' stage. This is followed by 'student decision-making', which can be related to the 'evaluation of alternative' stage, and lastly, 'students' choice' that can be related to the 'purchase stage' of the classical model.

Research methodology

Research design

The research model for the present study (see Figure 1) was developed based on an exhaustive process of literature review which helped illustrate the causal relationships between constructs and drawing hypotheses. The validity of the hypotheses was tested by gathering data from students of three different Malaysian universities.

Data collection

A self-administrated questionnaire is usually used to measure the beliefs, attitudes, and decisions of customers (Wolf, 2014). Therefore, in this study the same method is considered to collect data from respondents. Three hundred and fifty questionnaires were distributed to students from three different universities in Malaysia, namely, International Islamic University Malaysia, University of Malaya, and Limkokwing University of Creative Technology, using the non-probability sampling method, that is, convenience sampling. The researcher and their appointed assistants made sure to be present at the time

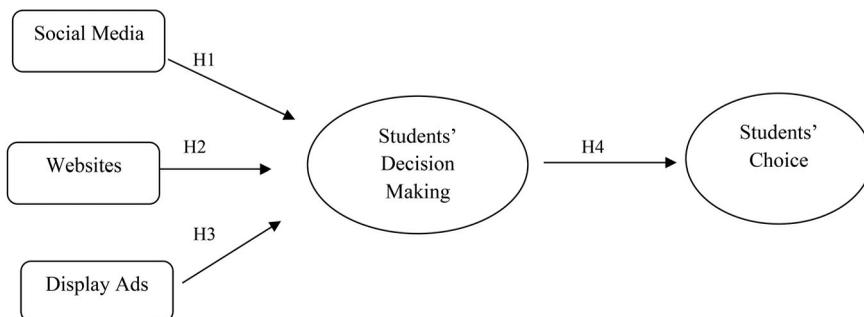


Figure 1. The proposed conceptual model.

when respondents were filling out the questionnaire, so that the chances of error were reduced and the response rate increased. After collecting back 350 completed questionnaires, a quick screening was performed in order to drop those questionnaires that were incomplete. It was observed that seven respondents were extreme outliers and three questionnaires were missing some significant parts, therefore making 340 usable, resulting in a 97% response rate.

Measurement development

The questionnaire for this study was developed based on previously validated measures. 'Social media'-related questions were adapted from Kang (2011), 'websites'-related questions were adapted from Starck and Zadeh (2013), and the 'display ads' section was adapted from Kornias and Häläläu (2012). Further, questions on 'students' online decision-making process' were adapted from the study by Zeng (2008). Lastly, 'students' choice'-related questions were adopted from Zain and Jan (2014). It is important to note that all the items in the questionnaire were modified to fit the current study's context. A 5-point Likert scale was used following the recommendation of Brown (2011), ranking from strongly disagree (1) to strongly agree (5).

Analysis and results

Sample characteristics

Of the total of 340 usable responses, male respondents represented 53.8% or 182, which is slightly greater than the female counterpart with 46.2% or 157. In terms of age, the majority of the respondents (68.2%) were in the age bracket 20–25 years. It is important to note that 71.2% of students were foreigners, and only 29.8% were locals. Further, with regard to the educational background of the respondents, the majority (54%) were master's degree students, 29% undergraduate students, and 15% were students pursuing their doctorate. The result of the demographic analysis of the respondents' characteristics, occupation, and education is deemed reasonable as the data were collected from a higher education institution.

Attributes of the questionnaire

Cronbach's reliability coefficient is usually calculated in order to ensure the stability and consistency of the research instrument. The value of Cronbach's alpha closer to 1 indicates greater stability and consistency of the scale. Most of the social science research has a cut-off value at 0.60 (Tavakol & Dennick, 2011). In the present study, the Cronbach's alpha based on the standardized items had a value of .906, which attests high consistencies and stability of the instrument (see Table 1).

Table 1. Reliability statistics of the questionnaire.

Cronbach's alpha	Cronbach's alpha based on standardized items	No. of items
.923	.906	31

Exploratory factor analysis

Exploratory factor analysis (hereafter, EFA) is used in order to explore the variables underlying the data set. First, Bartlett's test of sphericity and the Kaiser–Meyer–Olkin (KMO) test are required with appropriate thresholds to proceed with EFA (Pallant, 2010). In this case, KMO resulted in the value of 0.881; and Bartlett's sphericity test was significant ($p < .001$) implying the suitability of the data for conducting EFA (Byrne, 2013; Hair, Black, Babin, & Anderson, 2010; Kline, 2011; Pallant, 2010).

The results of EFA indicated five clean factors using eigenvalue greater than 1 as the cut-off value. The extracted factors accounted for 74.812% of the total variance. Factor loadings were all higher than 0.5 on its own factor. Table 2 demonstrates the results of EFA and the variables retained.

This study measured reliability using Cronbach's alpha as suggested by Hair et al. (2010). The result of the present research indicated Cronbach's coefficient alpha ranging

Table 2. Results of EFA.

	Components				
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Items/factors ^a	Social media	Websites	Display ads	Student's decision-making	Student's choice
SM1	0.899				
SM2	0.883				
SM3	0.878				
SM4	0.877				
SM5	0.869				
SM6	0.864				
SM7	0.586				
WEB1		0.880			
WEB2		0.876			
WEB3		0.873			
WEB4		0.868			
WEB5		0.841			
WEB6		0.770			
WEB7		0.521			
DA1			0.911		
DA2			0.910		
DA3			0.908		
DA4			0.884		
DA5			0.881		
DA6			0.873		
SDM1				0.904	
SDM2				0.903	
SDM3				0.890	
SDM4				0.885	
SDM5				0.847	
SC1					0.938
SC2					0.936
SC3					0.924
SC4					0.918
SC5					0.903
SC6					0.873
Initial eigenvalues	5.634	5.446	4.462	4.009	3.640
% of Variance	18.174	17.569	14.394	12.932	11.742
Cumulative %	18.174	35.743	50.137	63.070	74.812

^aPlease refer to Appendix A for codes with statements.

from .803 to .936, indicating good subscale reliability and internal consistency of the items (see Table 3).

Confirmatory factor analysis

A two-stage structural equation modeling (SEM) approach has been adopted in the present study. In this approach, the factors explored during EFA are confirmed through confirmatory factor analysis (CFA), also called the measurement model, followed by fully fledged structural modeling and hypotheses testing. For this purpose AMOS software was used to perform CFA for each of the five constructs extracted from the EFA analysis using maximum likelihood estimation. These measurement models were assessed based on the fit indices recommended by different scholars (e.g. Byrne, 2013; Hair et al., 2010; Kline, 2011).

Table 4 summarizes the results of all the CFA models. A review of the measurement models showed that all the fit indices used were above the recommended threshold where the normed Chi-square (χ^2/df) value for all the models is below 5.0, and goodness of fit index (GFI), comparative fit index (CFI), and normed fit index (NFI) are above the threshold of 0.90, which indicates a good fit of the measurement models.

SEM

As mentioned above, the present study adopted a two-stage SEM where the measurement model was fit before testing the full structural model. The results of the CFA presented in Table 4 clearly show a good fit of the measurement model, along with acceptable reliability and validity, giving a green signal for undertaking fully fledged structural modeling in order to test the fitness and also the hypotheses. The fit indices considered in this case are: normed Chi-square (χ^2/df), root mean square error of approximation (RMSEA), and CFI.

Further, the results of the hypotheses testing (see Table 5) revealed that three out of four hypotheses can be supported based on statistical significance (i.e. $p < .05$), as well as practical significance (i.e. $\beta > .20$). In this case, H1, H2, and H4 are supported, whereas this research did not find evidence to support H3. A summary of the hypotheses testing is presented in Table 5.

An overview of the standardized regression weights gives interesting insights. In this case, the highest regression weight was 0.481 (a causal link between website and students' decision). This indicates that among all the envisaged variables related to online advertising, websites have a stronger impact on students' decision-making. This is followed by a regression weight of 0.295 (a causal link between social media and students' decision), and

Table 3. Reliability coefficient of the extracted factors.

Factor	Number of cases	Number of items	Cronbach's alpha
Social media	340	7	.897
Websites	340	7	.904
Display ads	340	6	.803
Students' decision	340	5	.936
Students' choice	340	6	.897

Table 4. Result of CFA.

Construct	Model	χ^2	df	χ^2/df	CFI	GFI	NFI	RMSEA
Social media	Default	34.409	9	3.822	0.921	0.986	0.916	0.081
Websites	Default	24.269	5	4.853	0.964	0.944	0.969	0.025
Display ads	Default	31.324	9	2.369	0.939	0.902	0.933	0.017
Students' decision-making	Default	21.336	7	3.048	0.906	0.999	0.874	0.021
Students' choice	Default	8.913	5	1.782	0.997	0.993	0.853	0.048

0.268 (a causal link between students' decision and students choice). The results of this study did not find a significant influence of display ads on students' decision, based on the regression weight of -0.027 .

A final structural model of the present study is presented in Figure 2, resulting in reasonably high fit indices. In this case, a normed Chi-square value (χ^2/df) of 1.99 ($\chi^2 = 396.321$, $df = 199$) is deemed less than the cut-off value of 5.0, attesting a good fit of the model. Similarly, CFI was also above the cut-off value of 0.9 (CFI = 0.969) and, finally, RMSEA emerged with a value of 0.049 (which is above the cut-off value of 0.05).

Conclusion, implications, and limitations

The present study has significant contributions with regard to the body of knowledge, methodology, and practice. First, this study added to the body of knowledge by highlighting inevitable factors related to online advertising and then empirically testing those to find the most significant ones, especially in the Malaysian context. This research attests that educational institutions' website and their presence on various social media platforms have a positive influence on students' decision-making. Second, a comprehensive model was developed and tested using complex statistical techniques, which presented the proposed model diagrammatically, making it easy for interested parties to glance through the result. Moreover, a two-stage SEM analysis validates the proposed online advertising model and confirms its efficiency. The findings also proved that the two aspects of online advertising (websites and social media) influence students' decision and choice of a university for higher education.

Thirdly, from a managerial perspective, the findings of this study suggest several important implications for universities. For example, universities' marketing managers should focus on establishing a strong and efficient online advertising plan to develop and

Table 5. Estimates of the hypothesized model.

Structural path	Hypothesized relationship	Std. reg. weight	S. E.	C. R.	p
Social media \rightarrow Students' decision	H1 ^s	0.295	0.053	5.549	***
Websites \rightarrow Students' decision	H2 ^s	0.481	0.071	6.761	***
Display ads \rightarrow Students' decision	H3 ^{ns}	-0.027	0.046	-0.599	.549
Students' decision \rightarrow Students' choice	H4 ^s	0.268	0.054	4.974	***
Statistic		Suggested		Obtained	
Chi-square significance		≥ 0.05		0.000	
Normed Chi-square (χ^2/df)		≤ 5.00		1.99	
CFI		≥ 0.90		0.969	
NFI		≥ 0.90		0.945	
RMSEA		≤ 0.08		0.049	

s: supported; ns: not supported.

*** $p < .001$.

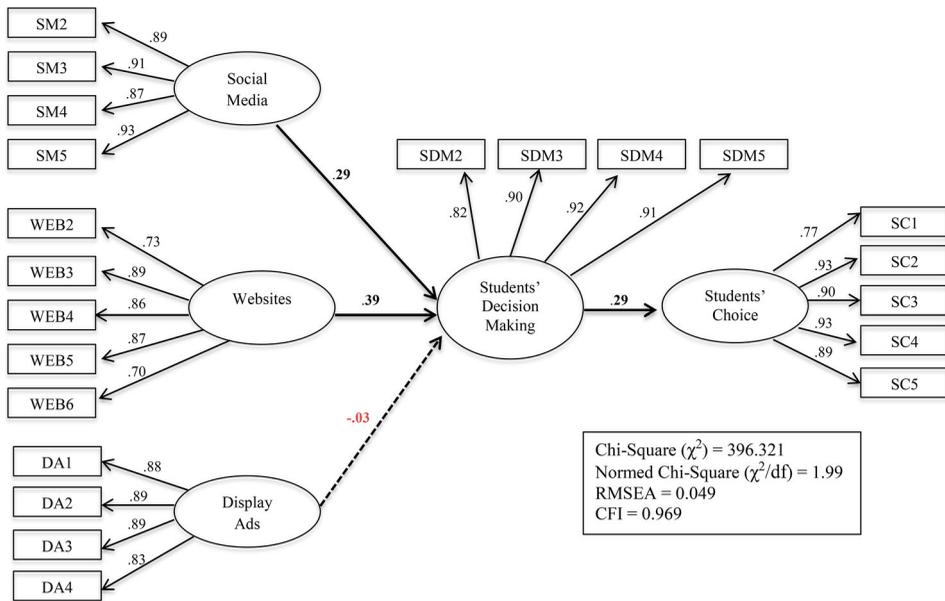


Figure 2. Final structural model.

attract more students by building a good solid online platform. More specifically, organizations in general, and universities in particular, should focus on building a professional and regularly updated website. As the results of this study attest, students’ decision to choose an institute of higher education is mainly influenced by an institute’s website. Moreover, universities’ management should also develop and engage in social media platforms to influence students’ decision-making and, eventually, their choice of a university. Lastly, bombarding students with advertisements when they visit a particular university website may result in negative implications with regard to their decision-making and selection of a university.

As with many research studies, the present study also has some limitations. For example, data were collected from only three universities in Klang Valley, which may cause issues when generalizing the results. Perhaps, in future, researchers may choose the same model and collect data from other universities and compare their results with the present study. Moreover, given the fact that this study has embarked on quantitative methods, perhaps some variables may be tested by using qualitative methods. Furthermore, future researchers may consider the present model and apply it to other service organizations, such as banks and telecommunications. A promising attempt would also be to take any single factor from the independent factors of the present study, such as social media or websites, and test the aspects of the aforementioned variable on students’ choice. Lastly, with regard to websites, future studies may consider using any established model, such as the Technology Acceptance Model to find out those factors related to a university’s website considered imperative by students.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix A Item codes with statements

Item code	Questionnaire statement
Social media	
SM1	Current students often visit the social media pages of universities.
SM2	Potential students often visit the social media pages of universities.
SM3	Using social media to advertise for a university reaches many people within short notice.
SM4	The pages of the university on social media allows the sharing of information in a fast way.
SM5	Social media creates more communication opportunities between students.
SM6	Using social media networking sites engage students in more elaborated communications about the university.
SM7	Students provide advice and recommendations to potential students through Online communities.
Website	
WEB1	The first image developed about a university is through its website
WEB2	The university website provides clear information in a simple way
WEB3	The information provided by the university website is easily accessible
WEB4	A professional website gives an impression of a good university
WEB5	The flexibility of the website helps provide quick information for students
WEB6	Including visuals in the website attracts more students
WEB7	Including visuals in the website makes it more effective
Display ads	
DA1	A simple display ad is more likely to be seen by students

(Continued)

Continued.

Item code	Questionnaire statement
DA2	Complicated display ads are often ignored by students
DA3	The content of the display ad must be easy to understand
DA4	The message of the display ad should be brief
DA5	Animated display ads should be avoided by universities
DA6	Display ads must be posted in websites which are frequently visited by students
Students' decision-making	
SDM1	Online advertising aspects provide me important information about the university
SDM2	When it comes to deciding on a university, I try to select the very best
SDM3	Online advertising is a space for students to share their experience in the university
SDM4	Sometimes it's hard to decide which university to choose
SDM5	The process of making a decision online is similar to making it offline
Students' choice	
SC1	When searching for information about a university, an online advertisement affects me
SC2	An online advertisement provides reliable information to the students when they are making their choice of a university
SC3	The most advertised university is usually the best choice
SC4	An online advertisement urges students to check them and know more about the university
SC5	Students can choose based on the information provided by online advertisements
SC6	Students can decide based on the information provided by online advertisements