

Using Facebook[®] to Gain Academic Information: The Case of a Private Higher Education Institution in Malaysia

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Abstract: Logistics Department in one of the private higher education institution has encouraged its students to obtain information at the departmental level from its Facebook[®] account named Logistics Student Association (LSA) Facebook[®]. This study applies two models namely the Information System Success Model (ISSM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Dimensions in the ISSM as well as in the UTAUT were used to investigate the perceptions from the logistics students pertaining to the LSA Facebook[®]. Data was gathered through questionnaires from 183 logistics students. Respondents provided their answers by perceiving the user satisfaction, system quality and information quality towards the behavioral intention to use the LSA Facebook[®]. Results indicated that system quality and user satisfaction are positively associated with the behavioral intention but not information quality. The standardized coefficients for user satisfaction was higher ($\beta = .23$) compared to system quality ($\beta = .20$) toward behavioral intention at p value $<.001$. The study implies that improving system quality and user satisfaction would yield high response from the users.

JEL Classifications: I20, I23, I25

Keywords: Facebook[®], social media, system quality, information quality, user satisfaction, behavioral intention

1. Introduction

With the emergence of the New Media such as Facebook[®] has tailored a private higher education institution (PHEI) in Malaysia to adapt it as part of its blended learning tools. A logistics department in that PHEI has taken an initiative to use Facebook[®] for disseminating information to logistics students.

New Media provide more facilities to support individuality and initiative or active control than conventional ones. Active searches, interactive environments, student- or facilitator-initiated electronic dialogues (Wenger, 1998) are just a few means to accomplish this (McConnell, 2002). Facebook[®] has the characteristics as medium used in private higher education institution specifically in disseminating information.

The Facebook[®] for the Logistics Student Association (LSA) was setup in 2011 and it aimed to provide a platform for logistics students to obtain information from the logistics department. The LSA Facebook[®] members include Head of department, academic staff and logistics students. The logistics students comprise of three levels of programmes: postgraduate, bachelor and diploma. Members share official news from the university itself as well as from the local and international

logistics corporations. These include subjects offered, up-to-date time table, assessment marks, university and departmental announcement, job opportunity, meetings, future events, etc. In addition to that, members also share photo uploaded in conjunction to field trip such as trips to seaport and warehouse centers. The success of any new media like a Facebook[®] is measured on how well group members gain benefits from it (Kirschner & Karpinski, 2010). Higher education institutions must ensure that the application of New Media will positively impact academic performance if they prefer to use it as part of teaching and learning exercise (Junco, 2012).

Although a considerable body of Facebook[®] application in the academic institutions have been increasing using Facebook[®] as a medium of communication (Facebook, 2013; Yang & Brown, 2013), there is very little literature that emphasizes on the niche programme like logistics. The success of disseminating information is expected to enhance logistics students' behavior in using the LSA Facebook[®] in this Malaysian PHEI. In this study, the dimensions in the Information System Success Model (ISSM) are used to study on how the LSA Facebook[®] influences individuals' desire to obtain information. This exploratory study expects to fill the gap and also to identify which dimensions in the ISSM influence logistics students to use LSA Facebook[®]. Therefore, the main objective of this study is to develop a theoretical relationship between the dimensions in the ISSM and the behavior intention to use the LSA Facebook[®].

This paper is organized as follows. The following section reviews the literature on the new media concept, ISSM dimensions and behavior intention. The next section describes the methodology employed and the hypotheses. Then the results of the data analysis are presented, followed by a discussion of the findings.

2. Literature Review

2.1 New Media and Facebook[®]

New Media is becoming a preferred term for a range of media practices that employ digital technologies and computer in some way or another (Dewdney & Ride, 2006). New media definitions remains fluid and are evolving, with some definitions of new media focusing exclusively upon computer technologies and digital contents production while others stress the cultural forms and contexts in which technologies are used (Dewdney & Ride, 2006). This study are focusing on new media used especially Facebook[®] in the context of specific cultural forms.

Facebook[®] now, is the leading social networking site among youngsters. Facebook[®] was founded in 2004 aids to facilitate social connections among college students (Facebook, 2013; Yang & Brown, 2013). A social network site like Facebook[®], Twitter[®] and LinkedIn[®], is a web-based service that allows individuals to present a profile within an organized framework, produce a list of other users with whom they share a connection, navigate the list of connections, and view those created by others within the system (Boyd & Ellison, 2007). The main idea of social networking is to give people the power to share and make the world more open and connected. With users sharing an enormous 30 billion pieces of content each month, Facebook[®] represents the largest database of social information the world has ever witnessed (Pring, 2012).

People use Facebook[®] to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them. According to Facebook[®] statistics, among the 1.11 billion monthly active users; an average user has about 130 friends, and people spend more than 700 billion minutes per month on Facebook[®] (see Facebook, 2013). Furthermore, Lenhart (2009) suggests that 18-24 year-olds made up the largest group of Facebook[®] users. As it is increasingly discussed in academic literatures, the research in this area is focusing on impression management; 'friending' behavior; networks and network structure; the relationship between online and offline connections; and questions around privacy (Boyd & Ellison, 2007). To date, many

academic institutions use social networking sites such as Facebook[®] to build their learning community, as well as a medium for communication. To cite an example, in order to obtain academic information, LSA use its Facebook[®] account to post announcement, share photos and information can be spread and passed by members rapidly, and individuals can then get help via Facebook[®] quite easily. Hence, LSA's Facebook[®] account not only acted as a social networking site but also as a platform for information circulation and sharing. Through Facebook[®], students can engage in a wide array of activities and interact with others without being constrained by geographical barriers (Yang & Brown, 2013).

2.2 The Information System Success Model

The Information System Success Model (ISSM) is used to identify factors that contribute to information systems (IS) success (DeLone & McLean, 1992; 2003; 2004). The original dimensions of this model were six namely: i) system quality, ii) information quality, iii) use, iv) user satisfaction, v) individual impact, and vii) organizational impact (DeLone & McLean, 1992). The updated ISSM includes arrows to demonstrate proposed associations among success dimensions in a process sense (DeLone & McLean, 2003). This updated model is used to measure the successful of e-commerce activities (DeLone & McLean, 2004).

Previous studies have applied the model to study the success of technology in Malaysia (see Yoon, 2009; Mohamed, 2008). In a literature related to e-recruitment, Yoon (2009) had suggested that organizations needed to improve their online system for online recruitment purpose. This is because an effective information system attracts people to use the technology. Meanwhile, Mohamed (2008) study was based on the perceptions towards the Malaysian e-Government webpage. Her findings have demonstrated that respondents rated user satisfactions, system quality, information quality, and service quality agreed to the technology provided.

2.3 System Quality

System quality focuses on the efficiency of a system chosen, the consistency of the user interface, ease of use, response rates in interactive systems, documentation quality and program code maintainability (Mohamed, 2008). In the case of new media application, many educational institutions are attempting to use new media as a tool for communication and as a part of blended learning in order to provide a quality learning (Kirkwood, 1998). However, the limitation of Kirkwood study was focused totally on a distant learning. In a related literature, it is vital for organizations to ensure their Web sites are easily accessed (Liu & Arnett, 2000). This is because system quality and information quality contributed to the critical success factor in relation to Web site usage.

The construct for system quality was developed from the DeLone and McLean (1992) study. It then evolved with additional items such as 24-hour availability, stability of software and hardware, page loading speed, the system architecture, visual appearance and accessibility (Turban & Gehrke, 2000; Han & Noh, 1999).

2.4 Information Quality

In the DeLone and McLean (1992) model, information quality measures the outputs of information system. Information is perceived by Internet users as an important aspect in obtaining information (Dineen & Noe, 2009; Maurer & Cook, 2011). Variables such as completeness, data accuracy, legibility and timeliness are expected to contribute positively on information quality (Van der Meijden, Tange, Troost, & Hasman, 2003). Meanwhile, accuracy, precision, reliability, currency, completeness, format and volume are factors that attribute in information quality (Wixom & Todd, 2005).

A study from Lee, Strong, Kahn, and Wang (2002) has demonstrated a relationship between information quality assessment and benchmarking. They believed that with proper measurement and analysis, the construct of information quality can be measured. In another study, factors like personalized services in Internet, information overload, uses and gratifications, and user involvement are factors that contributed to end users satisfaction when they use the technology (Liang, Lai, & Ku, 2007). They further explained that content recommendation would be more useful for knowledge management systems, where users are often looking for specific knowledge at Web sites.

2.5 User Satisfaction

Perceptions of information systems success have been investigated within the context of user satisfaction and technology acceptance (Wixom & Todd, 2005). The findings from Wixom and Todd study have demonstrated a model that distinguishes respondents' beliefs and attitudes about using a system and thus results user satisfaction.

In the context of information system, user satisfaction refers to the successful interaction between the information system and its users (DeLone & McLean, 1992). Previous studies have indicated user satisfaction with information system effectiveness and also with support system (Muyllé, Moenaert, & Despontin, 2004; Bharati & Chaudhury, 2004). According to Zviran, Glezer, and Avni (2006), user satisfaction acts as a tool to measure the success or the failure of web site. Factors that contributed to the success of Web site were usability and its design.

In their revised model of measuring information system success, DeLone and McLean (2003) have emphasized that the construct of 'user satisfaction' remains as important means of measuring customers' opinions. According to Tucker (2008), user satisfaction is achieved when users can easily and quickly access information from the system.

2.6 Behavioral Intention to Use the Technology

The components pertaining to the acceptance of technology (where in this study, the technology refers to the LSA Facebook[®]) is derived from the Unified Theory of Acceptance and Use of Technology or UTAUT. The objective of UTAUT model is to explain user intentions to use an information system and later subsequent usage behavior (Venkatesh, Morris, Davis, & Davis, 2003). The model emphasizes that performance expectancy, effort expectancy, social influence, and facilitating conditions are factors which influence usage intention and behavior. In relation to the Internet, a strong attitude formation from user friendly Web site will contribute to positive impact on user to access the Web site (see Mareschal & Rudin, 2010; Maurer & Cook, 2011).

A study from Teo, Luan, and Sing (2008) has led to the importance of cross-cultural elements in the relationship between perceived technology and behavioral intention to use the technology. The results of their study have demonstrated that respondents from various demographical factors did not indicate any differences on their intentions towards technology acceptance. The findings however differ from a study conducted by Colesca and Dobrica (2008) where demographical factors such as age, income and internet experience indicated significant relationship towards intention to use the technology.

3. Research Framework

This study focuses on the development of Information System Systematic Model to measure user's intention in using LSA Facebook[®]. By examining the relationship between the dimensions in the ISSM and behavioral intention should contribute an extend knowledge pertaining to the relationship

among them. The link between the dimensions of ISSM and behavioral intention from UTAUT is shown in Figure 1.

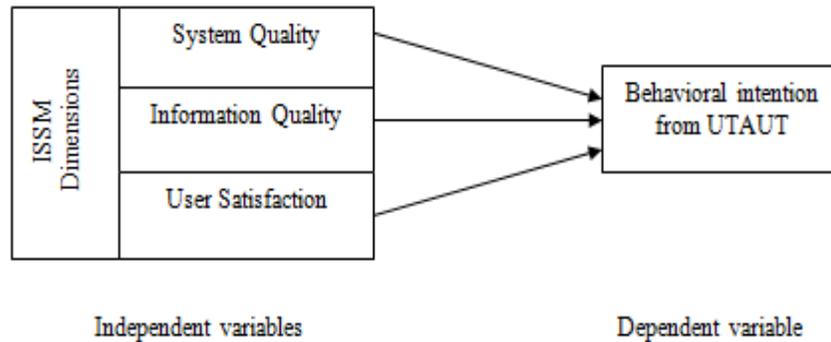


Figure 1. The research framework

The following hypotheses were formulated for the study:

- H1:** System quality will positively influence behavioral intention to use the technology.
- H2:** Information quality will positively influence behavioral intention to use the technology.
- H3:** User satisfaction will positively influence behavioral intention to use the technology.

4. Methodology

4.1 Sample

A self-administered questionnaire was employed for gathering data in this study. A total of 271 survey questionnaires were distributed and 183 usable questionnaires were returned, yielding a response rate of 67.5%. The sample comprised of undergraduate students who are pursuing their bachelor in logistics programme at a private university. Table 1 indicates the characteristics of the sample.

Table 1. Sample characteristics

Characteristics	Frequency	Percentage
Gender		
Male	87	47.5
Female	96	52.5
Age		
18 - 19	7	3.8
20 - 21	68	37.2
22 - 23	95	51.9
24 and above	13	7.1
Nationality		
Local	118	64.5
International	65	35.5

There were 87 (47.5%) male and 96 (52.5%) female respondents. As for the age group category, majority were aged between 22 and 23 years old (51.9%). The remaining were in the age group of

20 to 21 (37.2%), 18 to 19 (3.8%), and 24 and above (7.1%). 118 (64.5%) of the respondents were local students. The remaining 65(35.5%) of them were international students.

4.2 Variable Measurements

4.2.1 Independent Variables: System Quality, Information Quality and User Satisfaction

The measure was based on the three dimensions of ISSM (DeLone & McLean, 1992; 2003; 2004) with appropriate changes to make the items more relevant to the present study. Changes included adding the term ‘LSA Facebook®’ and deleting items which were not relevant to the study. The three dimensions which consist of 19 items were User Satisfaction, System Quality and Information Quality. Sample items included “The LSA Facebook® adequately meets the information processing needs of my academic search” (User Satisfaction); “The LSA Facebook® is easy to access” (System Quality) and “The output is presented in useful format” (Information Quality). Response to these were made on a five-point Likert scale which ranged from 1 = “strongly disagree” to 5 = “strongly agree”. Two items, one from US and one from IQ dimensions, were dropped due to contributing low reliability. The internal consistency reliability coefficient (Cronbach’s alpha) was performed for the remaining scale in all the dimensions.

4.2.2 Dependent Variable: Behavioral Intention

Behavioral intention was operationalised by a three-item scale adapted from the UTAUT (Venkatesh *et al.*, 2003). The original item “facilitating condition” from UTAUT was removed in this study. Each items requires the respondents to indicate their likely or unlikely on a five-point scale ranging from 1 = “very unlikely” to 5 = “very likely”. Sample item is “I intend to use LSA Facebook® for my academic search”. The internal consistency reliability coefficient for the scale was performed.

5. Analysis of Data

The Statistical Package for Social Science (SPSS) version 18 was used for the questionnaire data analysis. User satisfaction, system quality and information quality were regressed against behavioral intention to use the technology. The regression analyses confirmed for significance of the independent and dependent variables.

5.1 Independent and Dependent Variables’ Results

The reliability coefficients of each dimension were as follows: User Satisfaction (.74); System Quality (.84); Information Quality (.72) and behavioral intention (.81) (see Table 2). The reliability coefficients of all the dimensions were adequately meeting the standards for such research (Nunnally & Bernstein, 1994). For the descriptive statistical analysis, respondents perceived Information Quality (M = 4.06, SD = .51) to be the most influence dimension in the IS model. User Satisfaction (M = 3.67, SD = .54) was identified as the lowest mean score.

Table 2. Reliability of user satisfaction, system quality, information quality and intention to use

Dimension	N	Final Number of Items	Reliability	Mean	SD
User satisfaction (US)	183	4	.74	3.67	.54
System quality (SQ)	183	3	.84	3.78	.72
Information quality (IQ)	183	3	.72	4.06	.51
Behavioural Intention	183	3	.81	3.89	.61

5.2 Simple Regression Analysis

A simple regression analysis was conducted to examine the significance of the causal relationship between dimensions of IS model and behavioral intention. As shown in Table 3, the dimensions of User Satisfaction, System Quality and Information Quality significantly accounted for .18 (i.e. R Square) of the variance in behavioral intention. The F statistics yielded for 13.3 in behavioral intention at the 95% confidence level.

The results of regression analysis supported hypotheses H1 and H3 but not hypothesis H2. H1 and H3 posited a positive causal relationship (H1: $\beta = .20$, $p < .001$; H3: $\beta = .23$, $p < .001$). Dimension of Information Quality was indicated as not significance on behavioral intention.

Table 3. Results of regression analysis

	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.34	3	4.11	13.29	.000*
Residual	55.40	179	.31		
Total	67.74	182			
R Square = .18; Adjusted R Square = .17					
Independent Variables	Standardized Coefficients	t			Sig.
System Quality	.20	2.66			.009*
Information Quality	.13	1.71			.089
User Satisfaction	.23	3.19			.002*

Note: * significance at $p < 0.001$ level (2-tailed)

6. Discussion

The main objective in this study is to investigate the three dimensions in the ISSM (System Quality, Information Quality and User Satisfaction) and their relationship with behavioral intention of logistics students to use LSA Facebook® to obtain information. The findings showed that System Quality and User Satisfaction were positively significant related to behavioral intention. In this study, these two dimensions were able to predict intention to use the new social media using the LSA Facebook®.

These results support the findings from previous studies conducted by Vlachos and Vrechopoulos (2008) and Lu, Kuo, and Lee (2010), which demonstrated that User Satisfaction did predict people intention behavior on using a technology. In addition to that, User Satisfaction is positively influence users' behavior intention (Lin & Hsieh, 2007). This happens when the information technology provides a competitive advantage to the users.

The study also pointed out that System Quality has positively influenced behavior intention. A study from Bai, Law, and Wen (2008) has indicated a positive impact between Website quality and user satisfaction. Ahn, Ryu, and Han (2007) have successfully investigated the effect of playfulness on user acceptance of online retailing and tested the relationship between Web quality factors and user acceptance behavior. The results showed that Web quality had a significant impact on the encouraging user to access online information.

Interestingly, hypothesis H3 was not supported. Information Quality indicated insignificant result in this study. This result is generally consistent with a study by Nicolaou and McKnight (2006) where

Information Quality only acts as indirect effect between system design and behavioral intention to use the technology. Furthermore, their study also had emphasized on a construct called 'control transparency' which had a significant influenced on Information Quality. In their discussion, they recommended that Information Quality should not be taken as final consideration factor in assessing user's intention to use a technology. Certainly, further research is needed to confirm this finding.

This study stressed the importance of System Quality and User Satisfaction as critical factors in encouraging logistics students to use LSA Facebook[®] as a source of information. The LSA Facebook[®] can be improved as a tool for acquiring information provided that elements of System Quality and User Satisfaction are effective and user friendly to its members. Poor System Quality and User Satisfaction factors may cause LSA Facebook[®] members reluctant to explore and use it. In addition to this, the recent and future users for using the LSA Facebook[®] are from the Y-generation group. In relation to Y-generation group, they are more skewed towards Internet use (Reisenwitz & Iyer, 2009) and more consider the familiarization of using the new media (Hewlett, Sherbin, & Sumberg, 2009). The Y-generation is a group of people whose have birth dates ranging from the mid 1970s to the early 2000s (Gardner, 2006; Wilson & Gerber, 2008).

As shown in Table 1, the age groups indicate that respondents were all from the Y-generation. As this generation prefers to use the Internet and other Information Technology tools (Reisenwitz & Iyer, 2009), it can conclude that they perceived System Quality and User Satisfaction as salient determinants for them to use the LSA Facebook[®].

7. Limitations and Future Research

There are some limitations that must be considered in future research. Firstly, a major limitation of this study is the small sample size (N = 183). Therefore, the power of the test is weaker. Secondly, the findings are based on the use of self-reported survey data, which the issue of response rate may arise. Thirdly, a cross-sectional analysis cannot confirm the direction of causality implied in this research, so it is important to be cautious in providing conclusions regarding independent and dependent variables.

For future research, using the same methodology and variables, a study could be done to determine the relationship between the System Quality, Information Quality, User Satisfaction and behavioral intention among respondents in other target population such as other academic programmes from different faculties and higher education institutions in Malaysia. Finally, the measure of behavioral intention comprises only a small number of items which depended on the ISSM; therefore this is a considerable biased view of this study. Future research may be more valid if items and measures are developed in relation to this outcome variable.

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