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ATTITUDE TOWARD ELECTRONIC INFORMATION RESOURCES USAGE AMONG AFGHAN STUDENTS IN MALAYSIA

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Abstract

The usage of electronic information resources in university libraries is increasing and expanding, enhancing its functionality as an information provider and self-learning tool among students. The attitude toward the use of electronic information resources can predict the future use of electronic information resources among users. The objective of this study is to examine attitude toward electronic information resources among Afghan international university students in Malaysia. In this study, Technology Acceptance Model was used to examine the effect of five variables that is perceived usefulness, perceived ease of use, subjective norm, facilitating conditions and electronic information resources complexity on attitude toward electronic information resources use. Data were collected through an online survey from 117 Afghan international university students and was analyzed using descriptive analysis, Pearson correlation and multiple regressions analysis using SPSS version 23. This study found strong and positive relationship between four variables namely perceived usefulness, perceived ease of use, subjective norm, and facilitating conditions. This study also found that three variables were found to be significant predictors namely perceived usefulness, perceived ease of use and facilitating conditions. However, two other variables namely subjective norm and electronic information resources complexity were not significant. The implication of the study is that universities should provide long term and compulsory electronic information resources courses, online multimedia guides and establish a technical department who can assist their international students.

Keywords: Attitude, electronic information resources, technology acceptance model.

1. Introduction

Electronic information resources (EIRs) are invaluable components of academic libraries that integrate into the core functions of higher learning institutions: learning, teaching and research. They include sources of information packaged in electronic format: e-journals, e-books, online journals and magazines, e- learning tutors, online tests, e- discussions, e- news, e-mail, software applications, electronic texts, institutional repositories, bibliographic databases, e- books, collection of e- journals, websites, etc. The many advantages of EIRs are, providing information resources regardless of time and place, access to restricted information due to geographical location or finances, providing links to additional resources related contents, ease of use (citation, upholding and updating, storage and dissemination, archiving) (Ivwighreghweta & Oyeniran, 2013), speed, ability for searching multiple files at the same time, ability for accessing materials from outside of the library and ability to download, save and print scholar journals. Others include powerful searching tools, integrated hypertext links and multi-media from the aspect of e-journal, the ability to link to additional information, the ability for searching across a wide range of article journals, and interaction between many levels of information objects within a single article as important features. Several users are also able to use the same electronic resource at the same time (Chong & Hazlin, 2013). EIRs usage is increasing in the university environment, so it is important to understand the linkage between the usage and students' attitudes to help formulate library instruction (Ukachi, Onuoha, & Nwachukwu, 2014).

Attitude is a vital variable in studying of human behaviour and an important concept in electronic information resources use among university students. According to Ajzen and Fishbein (1980) attitude is the positive or negative evaluation of object, people, or situation that influence us to feel and behave toward them in positive or negative ways. Ukachi (2014) confirmed the strong connection between attitude and behaviour and asserted that measuring attitude has a key role in analysing user behaviour. The positive attitude is key element in integrating new technologies. Teo (2008) cited from (Huang & Liaw, 2005), the success of technology implementation depends on the users' attitude toward the technology. The general implication is that, if a user has negative attitude toward the use of new technologies (e.g. electronic information resources), the expected outcome is obvious. The user will either not utilize it at all or utilize it just once in a while (Ukachi, 2014).

The likelihood of success of technology acceptance has been represented in many studies, and there has seen extensive use of various models including Technology Acceptance Model (TAM), TAM2 and Unified Theory of Acceptance and use of Technology (UTAUT) (Teo, Milutinović, & Zhou, 2016). Among the many efforts using models tweaked toward helping studies predict technology usage, Technology Acceptance Model (TAM) appears to be the most influential. Empirically, TAM is rather successful in predicting about 40% of system usage (Teo, Lee, & Chai, 2007).

The TAM which was introduced and developed by Davis (1989), was designed to explain aspects of computer usage behavior. The TAM is derived from TRA, and from this theory, perceived usefulness, perceived ease of use, and the users' attitude, intentions and actual computer adoption behavior is linked through a causal mechanism. However, TAM is more specific than TRA, which has been tweaked to work for computer usage behavior (Davis et al., 1989). According to the TAM, perceived usefulness (PU) and perceived ease of use (PEU) are primary motivational factors for accepting and using new

394

technologies. The TAM bases itself on the assumption that users develop a positive attitude toward the technology when the perception of the technology is that of usefulness and ease of use (Davis, 1989).

Several studies have examined TAM and found the most notable factors, common among many applications of TAM are: perceived usefulness (PU) and perceived ease-of-use (PEU), subjective norm (SN) or self- efficacy, facilitating conditions (FC) and technology complexity (TC) such as the TAM applied among Turkish pre-service teachers done by (Aypay, Celik, Aypay, & Sever, 2012). The study found positive correlations between perceived usefulness (PU) and attitude toward computer use (ATCU), perceived ease of use (PEU) and ATCU, facilitating conditions (FC) and ATCU, and technological complexity (TC) and ATCU. In this study, PU, PEU and FC were significant predictors of ATCU and TC and self- efficacy were not significant.

Teo et al., (2016) examined the predictors that influence Mathematician pre- services teachers' attitude toward computer use. According to the finding of this study, PU, PEU and TC were found to be significant predictors of ATCU and FC and subjective norm (SN) were not significant. Teo (2012) has also applied the TAM in 2012, examining 230 pre- service teachers. In this study, PU, SN and TC were found to be significant influences on ATCU while PEU and FC were not significant. Teo has also applied the TAM in 2010 study to determine the attitude of 239 pre-service teachers toward computer use at the National Institute of Education (NIE) in Singapore. Results show PU, PEU and TC were significant predictors of ATCU. In an earlier study by (Teo et al., 2007) PU, PEU and SN were significant predictors of computer attitude while FC was not significant.

As Teo (2008) and Allahyari, Gharabaghi, & Ramazani (2012) asserted through many years, research on attitude toward technology was conducted in developed nations such as United States and United Kingdom. There is a severe lack of evidence that these research and results can be applied easily to developing nations that severely lack in technological advancement or even suffer from digital divide, and the effects of different cultures on the introduction, dispersion and usage of information and communication technology. The Technology Acceptance Model (TAM) is suitable for testing the practice of information technology in education among developing nations due to observable robustness across the variety of information technology in developed countries. Allahyari et al., (2012) cited from (Straub & Sevick, 2000) suggest two fundamental reasons why the adoption of information technology in developing nations is challenging; sociocultural differences that impede the development and successful implementation of these systems, and government policies and regulations that do not make sense when applied in the context of information technology transfer.

Teo (2012) tweaked the technology acceptance model for his own research in 2012. In this model, the effect of five factors (perceived usefulness (PU), perceived ease of use (PEU), subjective norm (SN), facilitating conditions (FC), and technological complexity (TC)) examined on attitude toward computer use (ATCU). In this model, "perceived usefulness (PU) refers to the extent to which a user's believes that using technology will increase or improve his/ her job performance while perceived ease of use (PEU) is the degree to which a person believes that using a particular technology would be free of effort. Subjective norm (SN) is defined as a person's beliefs that most people who are important to him or her think he or she should or should not perform the behavior in the question and facilitating conditions (FC) are factors that exist in the environment which a person believe have an influence over a his/ her desire to

perform a task. Finally technological/perceived complexity (TC) refers to the degree to which a person believes that a system relatively difficult to understand and use" (Teo, 2012). In this theory, five variables have an effect on attitude toward computer use but in this study, the researcher used the necessary wording changes in order to fit the context of Electronic Information Resources, so "technological complexity (TC)" is replaced with "electronic information resources complexity (EIRC) and "attitude toward computer use (ATCU)" is replaced with "attitude toward electronic information resources use (ATEIRU)

2. Problem Statement

EIRs are vital for academic success, problem solving, and decision making of international students and university libraries can play an important role in meeting their information needs through their services, facilities and programs (Safahieh & Singh, 2006). International students have different library experiences and meet unfamiliar library process and technologies at their host universities (Hughes, 2010), such as unfamiliarity with reference materials, the classification system and open stacks in libraries or even lack of previous experience with EIRs in their home countries (Song, 2004). International students' information needs is often different and unique from local students in the host universities. Most of the research on this topic has been conducted in developed countries. Recent research in these countries has shifted a focus on library-related experiences and preferences or habits of international students in foreign universities, rather than from a library-centric view (Hughes, 2010). A common thread or theme in this experience is culture shock" experienced by international students in developed countries (Bullingham & Lahlafi 2012). A few studies have been conducted on Malaysian unviersities in general, such as the effect of the internet on library reference services (Abdoulaye & Majid 2000). Many of these however, involved general opinions including library staffs themselves and not from an international student perspective. Most of the studies that have been done on this topic involving international students studying in Malaysia were gathered locally from a single university, such as University of Malaya (Safahieh & Singh, 2006; Ariyapala & Edzan, 2002), and certainly does not accurately represent the range and variety of challenges in this topic. Others have extended up to 2 higher educational institutions in Malaysia (Chong & Hazlin, 2013).

This particular study on the other hand examines attitude toward electronic information resources use among Afghan inernational university students in Malayia. In the case of Afghan students, many of the Afghan international university students in Malaysian universities come from an academic and cultural environment that is severely lacking in technology and are mostly still using fully print-based libraries. Compare this to Malaysia's history, such as the exciting inter-library project called the Malaysian Machine- Readable Catalogue (MALMARC) in 1978. This resulted in an integrated bibliographic database; and an integrated systems with each university's libraries by 1999 which means now all Malaysian university libraries provide EIRs facilities to all students (Dollah & Singh, 2012). By 1996, Malaysian universities were attracting international students from South Asia, West Asia or Middle East, Africa, and the Eastern European Block (Mustafa & Ilias 2013; Mahmud, Amat, Rahman, & Noriah, 2010). This is in stark contrast to Afghanistan, in which Suroush (2015) confirmed "as there is no internet, the Kabul Public Library does not provide any online library service. Instead visitors are

supposed to use the card catalogue system". According to World Bank "Afghanistan Country Summary of Higher Education" (2007), "resources are not available for the purchase of indispensable pedagogical inputs such as internet access, textbooks, journals and lab materials". This emphasizes the lack of sufficient technological experience of Afghan students when it comes to library usage. Firstly, it is clear that grouping international students as a single block/group will not accurately represent this problem. Secondly, it is also clear that such a study from an international students perspective and from a single ethnic background in a developing country is valuable for adding to the body of knowledge in this research. This study might provide insight into a case of extreme underprivileged group of students. Hence, this paper examines attitude toward electronic information resources use among Afghan international university students in Malaysia.

This study uses the technology acceptance model (TAM). TAM has been the fundamental theory for numerous studies of user technology acceptance. This study examined TAM in university libraries' EIRs setting, investigating the factors affecting Afghan international university students' acceptance of EIRs technology. While TAM is a common methodology used in this area of research, using it in the context of Afghan international students and their attitude toward electornic information resources use in Malaysia is still a young area of research.

3. Research Questions

Main research questions for this study:
- Does a relationship exist between ATEIRU and perceived usefulness (PU), perceived ease of use (PEU), subjective norm (SN), facilitating conditions (FC), and electronic information resources complexity (EIRC) among Afghan international university students in Malaysia?
- What is the best predictor of ATEIRU among Afghan international university students in Malaysia?

4. Purpose of the Study

The purpose of the research is to study the following:
- To identify relationship between ATEIRU and perceived usefulness (PU), perceived ease of use (PEU), subjective norm (SN), facilitating conditions (FC), and electronic information resources complexity (EIRC) among Afghan international university students in Malaysia
- To identify the best predictor of ATEIRU among Afghan international university students in Malaysia: PU, PEU, SN, FC, EIRC

5. Research Methods

This is a fully quantitative study and explanatory research that uses a questionnaire- based survey to solicit demographic information and attitude toward electronic information resources use. The population in this study is Afghan international university students currently doing their bachelor degree with the support of Afghan Government's Scholarship. Currently the number of Afghan international students at International Islamic University Malaysia (IIUM) and Universiti Sains Islam Malaysia (USIM) are 157 and 28 respectively.

The sample for this study includes 120 students according to Krejcie and Morgan Table (1970) for population size of 185 students. The sample was chosen by using simple random sampling. This method ensures an equal and independent chance of selection for every member of the population (Fraenkel, Wallen & Hyun, 2006). Hence, the method was applied to all Afghan international students in IIUIM and USIM.

The Afghan international university students residing in Malaysia have a useful Facebook group with a central admin, which serves as a portal to exchange news and information which may include news from the Afghan Embassy. In selecting the sample, members of the group were written down in database format (Excel) and numerated from 1 to 185. Numbers were then written on cards and drawn randomly. The numbers drawn were compared against the name list sheet and highlighted. After determining the sample size, the researcher sent the link of the questionnaire through the Afghan international students Facebook group during the 2016 academic year. A follow-up message was sent to all non- respondents during the week to increase the rate of return. The questionnaire gave space for respondents to answer, at their own leisure. Each participant took approximately 20 minutes to complete the questionnaire.

In order to measure the attitude toward electronic information resources among Afghan international university students; perceived usefulness (PU), perceived ease of use (PEU), subjective norm (SN), facilitating condition (FC), electronic information resources complexity (EIRC) and attitude toward electronic information resources use (ATEIRU) was used from Teo (2012) study. This question is organized into five scales with each scale having a different statement. Respondents can express their answers only through the following statements: Strongly Agree (SA), Agree (A), A little Bit Disagree (ABD), Disagree (DA), or Strongly Disagree (SD).

Following this, a correlation statistics is used to compute the relationship between PU and ATEIRU, PEU and ATEIRU, SN and ATEIRU, FC and ATEIRU and EIRC and ATEIRU. Each item was measured with a five point Likert scale which starts from 1 (Strongly Disagree) to 5 (Strongly Agree) with the mid-point of the range at 3 (A little bit disagree). So the mean score for each item above 3 is considered a high mean score indicating positive and below 3 is considered a low mean score meaning negative.

6. Findings

The data in terms of respondents' profile were analyzed based on the descriptive statistics analysis involving frequency and percentages. Table 1 shows percentages of respondents based on their gender (102 males and 15 females); technology access (94.9% Laptop and the rest Desktop Computer); frequency of technology usage (98.3% almost every day); years of technology experiences (71.8% above 4 years, 17.9% for 3-4 years, 9.4% between 2-3 years and only .9% between 1-2 years); and types of technology training (47.9% through Self- taught, 35.9% through Formal training, 12.8% through Friends and only 3.4% through Family).

Table 01. Respondents' Profile N=117

Respondents' Profile		Frequency	Percentage
Gender	Male	102	87.2
	Female	15	12.8
Technology access	Computer desktop	16	13.7
	Laptop	111	94.9
	Internet	117	100.0
Frequency of technology use	Less than once a month	1	0.9
	Between once a week and once a month	0	0
	A few times each week	1	0.9
	Almost every day	115	98.3
Years of technology experiences	1-2 years	1	0.9
	2-3 years	11	9.4
	3-4 years	21	17.9
	Above 4 years	84	71.8
Types of technology training	Formal training	42	35.9
	Friends	15	12.8
	Family	4	3.4
	Self- taught	56	4.79

To address the relationships between independent variables (perceived usefulness, perceived ease of use, subjective norm, facilitating conditions and electronic information resources complexity) and dependent variable (attitude toward electronic information resources use), Pearson correlation with SPSS 23 was conducted. Pallant (2005) interpreted the values between 0 to 1 based on Cohen (1988) guidelines:

r= .10 to .29 or r= -.10 to -.29   small

r= .30 to .49 or r= -.30 to -.49 medium

r= .50 to 1.0 or r= -.50 to -1.0 large

Table 2 shows relationships between independent variables and dependent variable. This result came after multiple regression result which is explained in the next section.

Table 02. Relationships between variables (N=117)

		PU	PEU	SN	FC	EIRC	ATEIRU
PU	Pearson Correlation	1					
	Sig. (2-tailed)						
PEU	Pearson Correlation	.827**	1			.	
	Sig. (2-tailed)	.000					
SN	Pearson Correlation	.640**	.742**	1			
	Sig. (2-tailed)	.000	.000				
FC	Pearson Correlation	.561**	.642**	.690**	1		
	Sig. (2-tailed)	.000	.000	.000			
EIRC	Pearson Correlation	.226*	.348**	.527**	.612**	1	
	Sig. (2-tailed)	.014	.000	.000	.000		
ATEIRU	Pearson Correlation	.791**	.765**	.637**	.604**	.239**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.009	

**. Correlation is significant at the 0.01 level (2-tailed)

Based on Table 2, there is a strong, positive correlation between ATEIRU and perceived usefulness (PU) (*r= .791, n= 117, p< 0.01*), between ATEIRU and perceived ease of use (PEU) (*r= .765, n= 117, p< 0.01*), between ATEIRU and subjective norm (SN) (*r= .637, n= 117, p< 0.01*), and between ATEIRU and facilitating conditions (FC) (*r= .604, n= 117, p< 0.01*).

To determine the best predictor of attitude toward electronic information resources among Afghan international university students, multiple regression analysis was conducted. Preliminary analyses were performed to check the violation of the assumptions of multicollinearity, outliers, normality, linearity, homoscedasticity, and independence of residuals. Based on the results, four cases were removed from the study. Cases number 91 and 119 based on Casewise Diagnostics (see Table 3) removed and cases number 6 and 56 had outliers.

Table 03. Casewise Diagnostics

Case Number	Std. Residual	Attitude toward Electronic Information Resources Use	Predicted Value	Residual
91	3.244	16.00	8.4447	7.55526
119	3.008	14.00	6.9949	7.00507

Pallant (2005) cited from Tabachnick and Fidell (2001), critical values for evaluating Mahalanobis distance (see Table 4) values for a study with five variables is 20.52 while case number 6 with a Mahalanobis distance value of 25.17506 and case number 56 with a Malanobis distance value of 20.92811 exceed this value. Also case number 91 exceed with a value of 22.66887 (see Table 5). Multiple regression was conducted again after removing the said cases.

Table 04. Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Mahal. Distance	.276	25.175	4.959	5.078	121

Table 05. Mahal. Distance

Case Number	Mahal. Distance
6	25.17506
56	20.92811
91	22.66887

Research question: What is the best predictor of ATEIRU among Afghan international university students in Malaysia?

The model of this study, which includes perceived usefulness (PU), perceived ease of use (PEU), subjective norms (SN), facilitating conditions (FC) and electronic information resources complexity (EIRC), explains 69.1 percent of the variance in attitude toward electronic information resources use (ATEIRU) (see Table 6, 7).

Table 06. Model Summary (N= 117)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.831	.691	.677	1.95008

Table 07. ANOVA (N=117)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	943.136	5	188.627	49.602	.000[b]
	Residual	422.111	111	3.803		
	Total	1365.248	116			

Of these five variables, perceived usefulness (PU) makes the strongest unique contribution (beta= .447), perceived ease of use (PEU) (beta= .217) and facilitating conditions (FC) (beta= .217) (see Table 8).

Table 08. Coefficiants results (N= 117)

Variables		B	Std. Error	Beta	t	Sig.
1	(Constant)	.817	1.039		.787	.433
	Perceived Usefulness	.451	.097	.447	4.639	.000
	Perceived Ease of Use	.326	.158	.226	2.064	.041
	Subjective Norm	.207	.187	.100	1.112	.269
	Facilitating Conditions	.287	.113	.217	2.544	.012
	Electronic Information Resources Complexity	-.113	.064	-.126	-1.778	.078

7. Conclusion

The objective of this study was to investigate the attitude toward electronic information resources use among Afghan international university students. The study enquired into the scope to which perceived usefulness (PU), perceived ease of use (PEU), subjective norm (SN), facilitating conditions (FC), and electronic information resources complexity (EIRC) influenced Afghan international university students' attitude toward electronic information resources use by determining the significance predictors and the amount of variance in ATEIRU that was explained by PU, PEU, SN, FC and EIRC. Using multiple regressions, this study found that, among these five variables, three variables i.e. PU, PEU and FC were significant in explaining ATEIRU while SN and EIRC were not. Overall, these five variables, explained 69.1% of the variance in ATEIRU.

This study as well confirms current research wherein perceived usefulness is one of the key determinants on attitude toward electronic information resources use in various educational circumstances (e.g. Aypay et al., 2012; Teo et al., 2016; Teo 2010; Teo, 2012; Teo et al., 2007). Perceived usefulness affirms the idea if participants in library universities find electronic information resources to be useful, productivity- enabling, performance enhancing or effective in their study, then more international students would use electronic information resources. The outcomes of this research show that Afghan international university students perceived electronic information resources as useful tools to gain their needed information and it supports their positive attitude toward electronic information resources use.

Perceived ease of use is observably a significant predictor of attitude toward electronic information resources among Afghan international university students. This finding underpins current research that a positive attitude toward electronic information resources use can be explained by users' perception of technology to be relatively effortless (e.g. Aypay et al., 2012; Teo et al., 2016; Teo, 2010; Teo, 2012; Teo et al., 2007).

Consistent with current research such as Aypay (2012) we also found facilitating condition a significant predictor of attitude toward electronic information resources use. That is, if the Afghan international university students' attitude in this study was affected by the availability of facilitating conditions and infrastructure. However, Teo et al. 2016; Teo 2012; Teo et al., 2007 found the availability of infrastructural support had a low effect on users' attitude toward technology use.

Contradictory to various past studies subjective norm (Teo, 2012; Teo, 2007) and electronic information resources complexity (Aypay et al., 2012; Teo, 2016; Teo, 2010) were found to be non-significant predictors of attitude toward electronic information resources use, which suggests that Afghan international university students' attitude in this study was not affected by subjective societal expectations and the complexity of electronic information resources. However, Teo (2012) and Teo et al. (2007) reasoned that subjective norm was probable to have a significant influence on users' attitude. Possible reasons for the less significant influence of subjective norm on Afghan international university students' attitude toward electronic information resources use is that most of them learned using technology by themselves anyway, an important personal attribute to have for those from nonconductive environments to succeed and that superiors influences were either encouraging or had no effect. Teo et al., (2007) found that technological complexity had little effect on users' attitude toward electronic information resources use.

Considering the novelty of such study on Afghan international university students, the finding of this study certainly is a unique contribution to both theory and practice. Our data showed that a different model with four components (PU, PEU, FC and ATEIRU) can be taken into consideration and tested in other cultures to find out the percentage of variance explained in attitude toward electronic information resources use among international students.

In terms of practice, this study has several implications for universities and university libraries in Malaysia. In order to support international students to use EIRs, universities need to implement strategies that ensure effective, successful usage of EIRs. Curriculum board of Malaysian universities should ensure that EIRs instruction included as a compulsory course with 2 credit load for all international students during the first 2 semesters of their first year in the university. This will develop students' familiarity with academic library services (e.g library process, library departments and sections, available technologies in library, borrowing books, open access database, pay per view journals) through multiple channels (eg. Facebook, Twitter, brochures, boards). The instructions should include search strategy and skills (basic internet and library database skills, such as by author, title, subject, etc) and advanced search strategies. Basic skill related to reference management software should also be included. These EIRs skills is a qualifying requirement for the productive use of EIRs. International students should be made aware of which journals their university libraries are subscribed to. Malaysian universities should make sure all students have access to fast speed and free internet inside universities and hostels, which should be

achieved through improvement of computer network infrastructure. University libraries in Malaysia should survey need assessment of international students in terms of library and electronic information resources experiences background and be aware of information needs of international students. From the aspect of specific persons for guidance, it is necessary to have fast and responsive technical staff through multiple channels (eg. Face to face, Telegram, WhatsApp) to international students. Also EIRs awareness programs will help users in keeping abreast with current developments in their respective subject fields

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