

AN EMPIRICAL INVESTIGATION INTO THE INFLUENCE OF IMAGE, SUBJECTIVE NORM AND SELF-IDENTITY ON E-LEARNING ACCEPTANCE IN SAUDI GOVERNMENT UNIVERSITIES

Abdulhameed Rakan Alenezi
Aljouf University- Saudi Arabia

Abdul Malek Abdul Karim
Universiti Utara Malaysia

Arsaythamby Veloo
Universiti Utara Malaysia

Abstract

Saudi Arabian universities are currently offering many online subjects and courses using different learning management system. While, the researchers claimed that the successful implementation of E-learning system needs more understanding of users' acceptance process and the related variables influencing this process. The current research explores and investigates empirically the extent to which social variables namely Image, Subjective Norm and Self-Identity influence the students' acceptance of E-learning in Saudis' Universities. The proposed variables or elements have examined with the students' acceptance using the Theory of Reasoned Action (TRA) as theoretical base in order to determine whether the proposed variables have an effect on the students' acceptance or not. The students' acceptance was measured by students' intention to use E-learning as independent variable on TRA theory. Questionnaire survey was distributed to five universities in different geographical locations. For hypotheses testing, liner regression results demonstrated that there was a significant relationship between the image, self-identity and Subjective Norm with the students' acceptance. The Attitude was significantly association with the students' acceptance. The paper concluded with some discussion of the findings 'key implications on both practical and theoretical prospective.

Keywords: Social variables, Image, Subjective Norm, Self-Identity, E-learning acceptance, Theory of Reasoned Action (TRA), Saudi Arabia.

Introduction

The importance of determining the variables that could influence the students' acceptance process can assure a successful implementation of E-learning system and ultimately persuade the students to use their institutions' online courses (Saadé & Bahli, 2005). The necessity to understand how learners accept e-Learning is crucial in order to build successful and effective E-learning courses. In consistence, Frankola (2001) indicated that the success of e-learning program depends on how the learner is motivated and engaged. While, the problem of students' diminutive willingness to use E-learning has been confirmed (Al-Jarf, 2007), the current study will focus on the influence of the Image, subjective norm and self-identity as social variables on E-learning acceptance in Saudis' universities. The social variables were found to be very influencing variables especially with the users' acceptance of new technology. Therefore, the current research focuses only on the social influence on the students' intention to use E-learning. The social influence on technology acceptance has been comprehensively studied in two last decades (Granberg & Holmberg, 1990; Sparks et al., 1995; Igbaria et al., 1996; Lee et al., 2003; Venkatesh, et al., 2003; Harrison et al., 2006). Theory of Reasoned Action (TRA) has chosen as theoretical grounding theory because it well-known as human behavior theory and successfully applied in online studies (Njite & Parsa, 2005). TRA construct directly influence the behavioral intention to use while TAM model does not. The researchers have extended the Theory of Reasoned Action (TRA) to include additional social variables beside the original subjective norm construct namely Image and self-identity. Hence, the researcher will include the proposed social variables as external factor with TAM. The proposed variables influence on students' acceptance of E-learning system implementation will be examined.

Literature review

1. Theory of Reasoned Action (TRA)

The Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975) is considered as one of the fundamental theories on human behaviour. TRA is a well-developed and validated behavioral prediction model that has been used successfully to predict users' behavior. It was established in order to examine the relationship between attitudes, subjective norm and behaviors. TRA assumes that specific intentions and behaviours can be predicted by attitudes toward behavior and subjective norms. TRA is very common, "designed to explain virtually any human behaviour" (Ajzen & Fishbein 1980, p. 4). The TRA was developed and extended to become the basis for some of the most influential Models and Theories in technology acceptance such as the Technology Acceptance Model (TAM) by Davis 1998 which is the basic model of this research and The Theory of Planned Behavior (TPB) by Ajzen 1991. According to (Venkatesh et al., 2003), the two main core constructs of TRA are attitude toward behaviour and subjective norm. Attitude is defined as "an individual's positive or negative feelings about the target behaviour" (Fishbein & Ajzen, 1975, p. 216). Subjective norm is defined as "the person's perception that most people who are important to him think he should or should not perform the behaviour in question" (Fishbein & Ajzen, 1975, p. 302). According to the TRA, attitude is a purpose of belief. Therefore, performing specific behaviour is directly related to the positive attitude which is a form of positive outcome as a result of performing specific beliefs and Vice Versa. TRA was a basic of TAM model, it is therefore only the intention instrument will be adapted from TAM model due to its strong validation in the area of E-learning.

Formally, the Theory of Reasoned Action can be presented as follows (Fishbein & Ajzen 1975, p.301): $B \sim BI = (AB) W1 + (SN) W2$

Where B = a specific behaviour, I = intention to perform behavior B, AB = attitude toward performing behavior B, SN = subjective norm, and W1 and W2 = empirically determined weights that reflect the relative influence of the AB and SN, and components of BI.

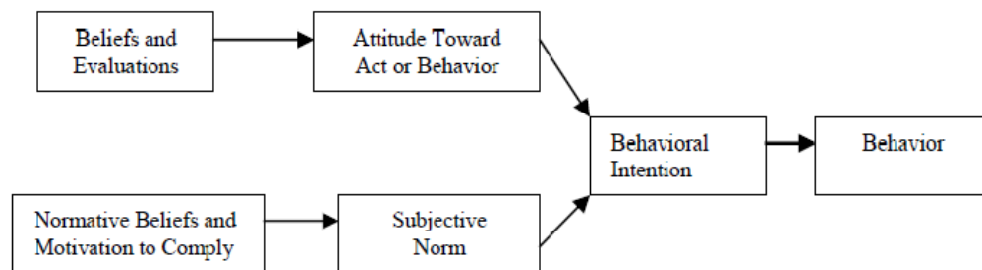


Figure 1: Theory of Reasoned Action (TRA)

Source: Fishbein, M., & Ajzen, I., 1975

2. Subjective Norms

The first introduction of Subjective Norm as a construct was in the Theory of Reasoned Action (TRA). Subjective norm is defined as the person's perception that most people who are important to him think he should or should not perform the behavior in question (Fishbein & Ajzen, 1975). Moreover, subjective norm is also defined as the individual's perception that an entity or a person who is important to him thinks whether he should use the system (Venkatesh & Davis, 2000). Ajzen (1980) affirmed that the intention to use

particular system is affected by two major determinants, the attitude towards behavior intention and the subjective norms. It is fact that the surrounding environment could have its impact on the students' behavior. In other words, some students are willing to follow other people's opinion towards certain behaviors.

Liker and Sindi (1997) have described subjective norm as perceived external pressure. Thus, the subjective norms could be described as the student's pressured feelings towards using E-learning tools due to their instructor or their peers. Several studies have shown that the role of subjective norm in predicting the behavior (Fishbein & Ajzen, 1975; Bagozzi, 1992; Venkatesh & Morris, 2000), and using online courses (Pan, Sivo, & Brophy, 2003; Miller et al., 2003; Lee et al., 2003). However, further research are still needed in order to determine whether the subjective norms have a positive influence on the students' acceptance, especially for the students from different cultures. Davis (1998) illustrated that technology acceptance model needs to be extended in order to include some external variables for better understanding for the students' behavior. The first suggestion was to include subjective norms in order to determine the students' intention to use the technology.

Shen, Laffey, Lin, and Huang (2006) have investigated the role of subjective norms on the students' perception towards using online learning. The authors' have examined the impact of the instructors, mentors and peers on perceived usefulness and perceived ease of use. The results show that the three components of subjective norm have significantly influence on perceived usefulness of the online courses. While, subjective norm did not have a strong influences on the perceived usefulness.

Lin, Hu, and Chen (2003) have investigated the e-government system acceptance. The main finding of their study has indicated that subjective norm was the significant determinant key of the system acceptance and the intention to use it. They also indicated that the persons' opinion could influence the users' trend to evaluate the system usefulness or the ease of using it. Thus, the subjective norm seems to be promising variables that could affect the students' acceptance of E-learning implementation in higher education environments.

In brief, the subjective norm will be used in this research as social factor constructs that could directly affect the students' intention to use E-learning system in Saudi Arabian governmental universities.

3. Image (IM)

Image is defined as "the degree to which adoption/usage of the innovation is perceived to enhance one's image or status in one's social system"(Venkatesh et. al, 2003). According to Venkatesh, et al. (2003), the social-influence construct originally consists of subjective norm, social variables, and image. These variables seem to be important in the mandatory setting only. This result has been confirmed in TAMII by Venkatesh and Davis (2000).

Venkatesh and Davis (2000) have realized the importance of Image as social constructs by extending the original TAM to include the social variables. They have tested Image in two different settings. They have developed TAMII to include many constructs for better understanding of users' acceptance. The research findings indicated that in voluntary setting the subjective norms seems to be the most significant determinant for the users' acceptance and their intention to use a particular system. However, in a mandatory setting, the subjective norm may influence the image, intention to use and perceived usefulness. While, image has recorded to be significant on the users' perceived usefulness. Thus, in this research the influence between Image and Intention to use E-learning will be assessed.

Moore and Benbasat (1995) have adapted the Innovation diffusion Theory as theoretical basis for their study. The main aim of their study was to measure the users' perceptions towards the Information Technology Innovation adoption. The authors' contribution was made through embedded additional variables such as relative advantage, ease of use, image, visibility, compatibility, results demonstrability, voluntariness of use in order to explore the users' acceptance of new technology. Their findings indicated that the Image has positive influence on the users' acceptance of using new technology. These findings have been consistence with Karahanna, Straub, and Chervany findings.

Mao (2006) has investigated the E-mail acceptance in China by extending IT acceptance model and validated it in the Chinese culture. The study also aims to make a comparison between Mao's research and other previous studies. The main finding of this research regarding the Image construct was that the image has no affect on the IT users' attitude towards using E-mail.

In a nutshell, Image seems to be significant variables affecting the students' acceptance of E-learning implementation in Saudi Arabian universities. Yet, the research will test the constructs significance with the students' intention to use E-learning.

4. Self- Identity (SI)

Self-Identity (SI) defined as the individual's comparison of other's expectation with his own value, beliefs, and previous experience and transformation of these into his own self expectation (Venkatesh et al., 2003). Giddens (1991) has stated that self-identity has to be a very crucial construct on social system because it has given a clear social interpretation. Thus, self- identit could be examined in order to reflect the impact of social influence on behavior intention to use technology, beside subjective norm and image as social constructs.

Several studies have shown that self-identity has a positive factor in the behavioral intention in different domains (Granberg & Holmberg, 1990; Sparks et al., 1995). Self-identity has a distinct different from the subjective norm factor in two features. The first one is related to the specific settings such as Mandatory and voluntary settings. Charng et al. (1988) cited in (Lee et al., 2006) Self-Identity can capture the significant of the social influence in voluntary settings, whereas, the subjective norm can capture the social influence only in the mandatory settings. Secondly, self-identity is shaped through the "internalization process which compares others' expectations with ones' own value, beliefs, and previous experience and transforms them into ones' own self-expectation, On the other hand, Subjective Norm captures others' expectations without internalization process and thus others' pressure directly affects a person's technology acceptance decision" (Lee et al., 2006. p.62).

Lee et al. (2006) have investigated the social influence on using WebCT behavior. The authors have extended TAM model to include subjective norm and self -identity. The study also examined the role of self-identity for capturing the students' intention to use WebCT in classroom. The study findings have demonstrated that self-identity has both direct and indirect significant influence on students' intention to use WebCT in classroom. It also confirmed that self-identity seems to be significant in both voluntary and experienced situation. The study has been consistence with previous studies regarding subjective norm influence in voluntary setting. The study shows that the subjective norm has no significant on the students' intention to use WebCT in voluntary situations. Moreover, the self-identity had significant affect on perceived usefulness and perceived ease of use. The researchers suggested that further research should be carried out to determine the self-identity influence in different domains and in different settings.

In conclusion, the above literature has shown the importance of proposed variables in influencing the students' acceptance. Therefore, the mentioned variables influences were examined directly with the students' intention to use E-learning.

5. Research Model and Hypotheses

Based on the original TRA framework and previous empirical findings on the literature, the initial model is proposed (as depicted in Figure 2).

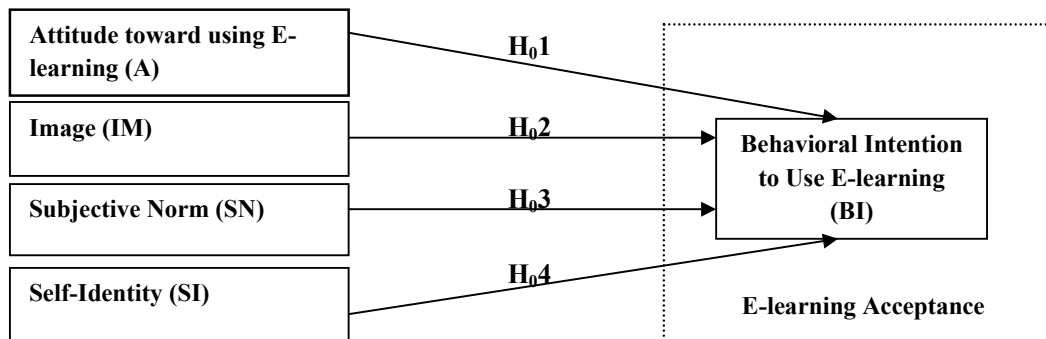


Figure 2: The Initial Model

Based on the proposed research model, four alternative hypotheses were summarized as following:

H1: Attitude towards using E-learning is positively related to the students' intention to use E-learning.

H2: Image is positively related to the students' intention to use E-learning.

H3: Subjective Norm is positively related to the students' intention to use E-learning.

H4: Self- Identity is positively related to the students' intention to use E-learning.

Research methodology

1. Instrumentation

The questionnaire was consisted of 17 Items (As depicted in Table1) in order to measure the proposed research model variables. The measurement was adapted from prior research (Suh & Lee, 2007; Moore, & Benbasat, 1991; Ndubisi, 2004; Lee, Y., Lee, J.& Lee, Z, 2006; Nasution, 2007). Pilot study was carried out in order to measure the instrument internal consistence and reliability of utilised adapted questionnaire. The questionnaire was distributed to 50 students from Al-Jouf University in session one 2009/2010. The returned and usable questionnaires were 48 and two questionnaires were excluded from the analysis due to massive unanswered questions. The analysis of internal consistency was obtained from the interval scale items only. Overall, the pilot study data revealed acceptable high alpha

reliability coefficient of all items. Therefore, all items were retained for the main study and proceed to use for data collection.

Table 1: instrumentation references, No. of items and pilot study reliability

Variables	# of Items	Cronbach alpha (α)		Sources
		Original scale	Pilot Study	
Behavioral Intention to Use E-learning (BI)	4	0.90	0.80	Suh, C & Lee, T (2007)
Attitude toward Using E-learning (A)	3	0.88	0.72	
Image (IM)	4	0.80	0.809	Moore, G. & Benbasat, I. (1991).
Subjective Norm (SN)	2	0.90	0.714	Ndubisi, N. O(2004)
Self-Identity(SI)	4	0.95	0.812	Lee, Y.; Lee, J.& Lee, Z(2006)-Nasution, F(2007)

2. Sample and data collection

The current research aimed in investigating the influence of the Image, Subjective Norm and Self-Identity on E-learning acceptance in Saudis' governmental Universities. For hundred eighty questionnaires were distributed to the students at five universities in Saudi Arabia. The usable response rate was 85 % with 408 undergraduate students from five different governmental universities. The profile of respondents is portrayed in Table 2.

Table 2: profile of respondents

University	Frequency	Percentage
King Saud University	125	30.6
King AbdulAziz University	161	39.5
King Faisl University	38	9.3
King Khalid University	45	11.0
Aljouf University	39	9.6
Total	408	100.0
Major	Frequency	Percentage
SCIENCE	263	64.5
ART	145	35.5
Total	408	100.0
Major	Frequency	Percentage
MALE	254	62.3
FEMALE	154	37.7
Total	408	100.0
Age	Frequency	Percentage
18-21	127	31.1
22-25	259	63.5
26-29	22	5.4
Total	408	100.0
PC ownership	Frequency	Percentage
Yes	383	93.9
No	25	6.1
Total	408	100.0
Years using computer	Frequency	Percentage
<1 Year	104	25.5
1-3 Years	150	36.8
4-8 Years	126	30.9
>8 Years	28	6.9
Total	408	100.0
Years using Internet	Frequency	Percentage
<1 Year	236	57.8
2-4 Years	144	35.3
>4 Years	28	6.9
Total	408	100.0
E-learning usage	Frequency	Percentage
One per month	199	48.8
Little per month	110	27.0
Little per week	75	18.4
One per day	24	5.9
Total	408	100.0

Data analysis and Findings

1. Factor and Reliability Analysis

Construct validity and reliability analysis were examined to ensure that the obtained responses are valid and reliable for further analysis. Exploratory factor analysis (EFA) represented by principal components analysis (PCA) with Varimax rotation were performed. All required criterion were achieved. Kaiser-Guttman criterion was applied regarding to the number of variables to be extracted which is only variables with an eigenvalues equal or greater than one can be extracted (Guttman, 1954; Kaiser & Dickman, 1959). The items with only loading 0.300 or greater were consider as acceptable (Hair et al., 1998). The factor analysis has individually performed of each following scales because the ratio of five subjects per item (5:10) suggested by Coakes and steed (2003) and the ratio of ten subjects per item (1:10) to run a single factor analysis were not achieved (Hair et al., 1998). Therefore, the factor analysis has performed separately for TRA original constructs and other proposed variables namely Image and self-identity. The Cronbach's alpha coefficient above 0.60 is considered as acceptable (Nunnally& Bernstein, 1994; Sekaran, 2000). Therefore, suggested acceptable cut-off level of 0.60 was applied in this research.

Table 3 Factor analysis loading for BI,A,SN,IM,SI

Items	1	2	3	4	5	α
Behavioral Intention1 (BI1)	0.78					0.79
Behavioral Intention2 (BI2)	0.77					
Behavioral Intention3 (BI3)	0.76					
Behavioral Intention4 (BI4)	0.74					
Attitude 1 (A1)		0.83				0.70
Attitude 2 (A2)		0.82				
Attitude 3 (A3)		0.72				
Subjective Norm1 (SN1)			0.87			0.69
Subjective Norm2 (SN2)			0.86			
Image1 (IM1)				0.80		0.78
Image2 (IM2)				0.78		
Image3 (IM3)				0.75		
Image4 (IM4)				0.69		
Self-identity1 (SI1)					0.83	0.79
Self-identity2 (SI2)					0.81	
Self-identity3 (SI3)					0.75	
Self-identity4 (SI4)					0.69	
Eigenvalues	2.530	1.804	1.442	3.549	1.334	
Percentage of Variance Explained	26.031	21.048	17.101	31.046	29.996	
Total Variance explained	64.180			61.041		
KMO	0.67			0.68		
Bartlett's test approx. chi square	798.332			1371.007		
Df	36			28		
Sig.	0.000			0.000		

2. Hypotheses testing

Liner regression analysis was performed in order to investigate the variables' influence on the students' acceptance of E-learning. Before testing the proposed hypotheses, several assumptions were met mainly normality, linearity, homoscedasticity and independence of errors terms, multicollinearity and multivariate outliers (Hair et al, 1998; 2006; Pallant, 2001; Coakes and steed, 2003).

To examine the hypothesized statement (**H₀₁- H₀₄**), liner regression analysis was performed. Table 5 shows the results of stepwise multiple regression analysis.

Table 5 Simple liner regression analysis of hypotheses

Predictors	R Square	Adjusted R Square	Unstandardize d Coefficients B	Standardize d Coefficients Beta	t	p- value (Sig)
Attitude	0.11	0.013	0.110	0.113	2.27	.024*
Image	0.50	0.25	0.519	0.499	11.526	.000**
Subjective Norm	0.14	0.020	0.150	0.142	2.873	.004**
Self-identity	0.49	0.24	0.516	0.490	11.243	.000**

** p > 0.01, * p > 0.05

As portrayed in Table 5, the findings indicated that the attitude, image, subjective norm and self –identity were statistically significant upon students' acceptance. However, both attitude and subjective norm were weak predictor of students' acceptance and were not explain high percentage of variation compared to Image and self-Identity. Further discussion will be in next section.

Discussions

The study's findings show that Image and Self-Identity were stronger predictors of students' acceptance of E-learning. Image greatly affects students' acceptance as well as Self-Identity. These findings regarding to Image effects have been consistence with the previous findings (Mao, 2006; Venkatesh et. al, 2003; Venkatesh & Davis, 2000; Benbasat, 1995). In addition, the self-Identity influence was consisted with the previous literature findings (Lee et al., 2006; Sparks et al., 1995; Granberg & Holmberg, 1990). However, Attitude and Subjective Norm were statistically significant but their affect were limited. The limited contribution of both attitude and Subjective norm was unsurprising because the controversial previous findings regarding to both variables was confirmed. Many authors were eliminated the attitude from their proposed model as a result of limitation effects of Attitude on students' intention to use new technology (Venkatesh & Davis ,1996; Wolski, & Jackson ,1999; Davis ,1998). While, the little influence of subjective norm might caused by the students' low level of experience and the research voluntary or mandatory setting environment because many authors explained their negative findings regarding to subjective norm with the influence of experience in using new technology (Abbad, Morris, and de Nahlik , 2009; Hartwick & Barki, 1994; Taylor & Todd, 1995) or the mandatory and voluntary environment (Ndubisi ,2004). Therefore, the weak influence of Subjective Norm is related to the low level of students' experience in using E-learning and most of respondents' were volunteer's students.

Implications and limitations

The current research findings revealed that proposed social elements are very crucial components that affect the students' acceptance of E-learning. Therefore, further social variables need to be investigated and examined in future research. These variables considered as important among many variables such as physiological, technological, cultural variables and Institutional variables which need further investigation. While, these variables can improve the students' involvement in using E-learning, the successful implementation of new technology can be assured.

The current study was limited for the research methodology used which is quantitative method. The research subjects were limited to undergraduate students in governmental universities in Saudi Arabia. Therefore, further research is required to examine the generalisability of proposed research model and its related findings to a broad array of environmental settings and targeted populations.

Conclusion

In conclusion, the current study was carried out to empirically investigate the influence of the Attitude, Image, Subjective Norm and Self-Identity on E-learning acceptance in Saudis' governmental Universities. The proposed model was based on TRA theory and previous research. The findings were confirmed the proposed hypotheses. Image and Self-Identity were highly contributed to the students' acceptance of E-learning. Moreover, Attitude and Subjective Norm were weak predictor of E-learning acceptance. Finally, though the importance of social environmental elements in influencing the students' acceptance of E-learning, the students' experience in using E-learning need to be improved and enhanced. This can be achieved through workshops and extensive training courses in using E-learning and eventually involves the students' with using E-learning technology.

References

- Abbad, M. M., Morris, D., & de Nahlik, C. (2009). Looking under the Bonnet: Variables Affecting Student Adoption of E-Learning Systems in Jordan. *The International Review of Research in Open and Distance Learning*, 10(2), 1-26.
- Al-Jarf, R. (2007). Cultural Issues in Online Collaborative Learning in EFL. Paper presented at the 3rd International Online Conference on Second and Foreign Language Teaching and Research.).
- Bagozzi, R. P. (1992). The self-regulation of attitudes, intentions, and behavior. *Social Psychology Quarterly*, 55(2), 178-204.
- Barki, H., & Hartwick, J. (1994). Measuring user participation, user involvement, and user attitude. *Mis Quarterly*, 18(1), 59-82.
- Charng, H. W., Piliavin, J. A., & Callero, P. L. (1988). Role identity and reasoned action in the prediction of repeated behavior. *Social Psychology Quarterly*, 51(4), 303-317.
- Coakes, S. J., & Steed, L. G. (2003). *SPSS: Analysis without anguish: Version 11.0 for Windows*: John Wiley.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 13(3), 319-340.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Don Mills, Ontario: Addison-Wesley Pub. Co.
- Frankola, K. (. (2001). Why online learners drop out [Electronic Version]. *Workforce Management*.

Retrieved June 1, 2008 from <http://www.workforce.com/archive/feature/22/26/22/index.php>).

Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*: Stanford Univ Pr. Granberg, D., & Holmberg, S. (1990). The intention-behavior relationship among US and Swedish voters. *Social Psychology Quarterly*, 53(1), 44-54.

Guttman, L. (1954). Some necessary conditions for common-factor analysis. *Psychometrika*, 19(2), 149-161.

Hair, J. F., Anderson, R. E., Tatham, R. L., & William, C. Black (1998), *Multivariate data analysis*. Upper Saddle River.

Hair, J. F., Black, W. C., Babin, B., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate Data Analysis* Upper Saddle River, NJ: Prentice Hall.

Harrison, D. A., Newman, D. A., & Roth, P. L. (2006). How important are job attitudes? Meta-analytic comparisons of integrative behavioral outcomes and time sequences. *Academy of Management Journal*, 49(2), 305-325. Igarria, M., Parasuraman, S., & Baroudi, J. J. (1996). A motivational model of microcomputer usage. *Journal of Management Information Systems*, 13(1), 127-143.

Kaiser, H. F., & Dickman, K. W. (1959). Analytic determination of common variables. *American Psychologist*, 14(1), 425-441.

Lee, Y., Kozar, K. A., & Larsen, K. R. T. The technology acceptance model: Past, present, and future. *Communications of the Association for Information Systems (Volume 12, Article 50)*, 752(780), 780.

Lee, Y., Lee, J., & Lee, Z. (2006). Social influence on technology acceptance behavior: self-identity theory perspective. *ACM SIGMIS Database*, 37(2-3), 60-75.

Liker, J. K., & Sindi, A. A. (1997). User acceptance of expert systems: a test of the theory of reasoned action. *Journal of Engineering and Technology management*, 14(2), 147-173.

Lin, C., Hu, P. J. H., & Chen, H. (2003). Technology implementation management in law enforcement: COPLINK system usability and user acceptance evaluations [Electronic Version]. Retrieved January 12, 2009 from http://www.diggo.org/dgrc/dgo2003/cdrom/PAPERS/hci_usability/lin_coplink.pdf.

Mao, E., & Palvia, P. (2006). Testing an extended model of IT acceptance in the Chinese cultural context. *ACM SIGMIS Database*, 37(2-3), 32.

Miller, M. D., Ranier, R. K., & Corley, J. K. (2003). Predictors of engagement and participation in an on-line course. *Online Journal of Distance Learning Administration*, 6(1), 1-13.

Moore, G., & Benbasat, I. (1995). Integrating diffusion of innovations and theory of reasoned action models to predict utilisation of information technology by endusers. *Chapman and Hall, London*, 132-146.

Nasution, A. (2007). Comment on "Are Banking Systems in East Asia Stronger?" *Asian Economic Policy Review*, 2(1), 82-96.

Ndubisi, N. O. (2004). Variables influencing E-learning adoption intention: examining the determinant structure of the decomposed theory of planned behaviour constructs. Paper presented at the HERDSA International Conference, 252-262).

- Njite, D., & Parsa, H. G. (2005). Structural equation modeling of variables that influence consumer internet purchase intentions of services. *Journal of Services Research*, 5(1), 43-59.
- Nunnally, J. C., Bernstein, I. H., & Berge, J. M. F. (1994). *Psychometric theory*: McGraw-Hill New York.
- Pallant, J. (2005). *SPSS survival manual*: Open Univ. Press.
- Pan, C. C., Sivo, S., & Brophy, J. (2003). Students' attitude in a web-enhanced hybrid course: a structural equation modeling inquiry. *Journal of Educational Media and Library Sciences*, 41(2), 181-194.
- Saadé, R., & Bahli, B. (2005). The impact of cognitive absorption on perceived usefulness and perceived ease of use in on-line learning: an extension of the technology acceptance model. *Information & Management*, 42(2), 317-327.
- Sekaran, U. (2000). *Research methods for Business*, John Wiley & Sons. *New York*.
- Shen, D., Laffey, J., Lin, Y., & Huang, X. (2006). Social Influence for Perceived Usefulness and Ease-of-Use of Course Delivery Systems. *Journal of Interactive Online Learning*, 5(3), 270-282.
- Sparks, P., Shepherd, R., & Frewer, L. J. (1995). Assessing and structuring attitudes toward the use of gene technology in food production: the role of perceived ethical obligation. *Basic and Applied Social Psychology*, 16(3), 267-285.
- Suh, C. K., & Lee, T. H. (2007). *User acceptance of e-learning for voluntary studies*. Paper presented at the annual Conference on International Conference on Computer Engineering and Applications, 538-544.
- Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information systems research*, 6, 144-176
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management science*, 46(2), 186-204.
- Venkatesh, V., & Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *Mis Quarterly*, 24(1), 115-139.
- Venkatesh, V., Morris, M. G., Davis, G. B., Davis, F. D., DeLone, W. H., McLean, E. R., et al. (2003). User acceptance of information technology: Toward a unified view. *INFORM MANAGEMENT*, 27(3), 425-478.
- Wolski, S., & Jackson, S. (1999). Technological diffusion within educational institutions: Applying the technology acceptance model. *TECHNOLOGY AND TEACHER EDUCATION ANNUAL*, 2, 1718-1723.