Mediating Role of Attitude, Subjective Norm And Perceived Behavioural Control In The Relationships Between Their Respective Salient Beliefs And Behavioural Intention To Adopt E-Learning Among Instructors In Jordanian Universities.

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Abstract
The purpose of this study is to examine the factors that determine intention to adopt e-learning in Jordanian universities. Two models of e-learning that are observed among adopting institutions: E-learning as a supplement to traditional classroom mode, and total electronic learning. The respondents in this research have just been introduced to the first model. The paper takes a social, and technical approach in its investigation by using a research model based on the Theory of Planned Behaviour (TPB) to identify the factors that affect intention to adopt e-learning. The model identifies specific salient beliefs that may influence technology usage, such as instructors attitude, subjective norm, perceived behavioural control, perceived usefulness, ease of use, Normative beliefs, Internet Self-efficacy, Perceived Accessibility and university support. stratified random sampling method was used to select instructors. Hierarchical Multiple Regression Analysis was used to assess the relationships in the constructs. The paper presents some findings on e-learning adoption intention determinants. It also discusses some of the implications of the findings on theory and practice.
Keywords: Attitude, subjective norm, perceived behavioral control, Behavioural intentions, e-learning, TPB.

1.Introduction

The new advancement in Information and Communication Technologies (ICT) has had an impact on several aspects of today's society (Alfahad, 2012). For the most part, commerce, politics and education have been undeniably influenced. Terms like the "global village, information society, and knowledge society" symbolize the new realities and change in modern society (Shoniregun & Gray, 2004). Numerous governments have taken serious steps towards preparing their citizens to become proficient cadres in dealing with the new requirements of the modern world (Garrison & Anderson, 2003). The appropriate use of ICT in education, such as the internet, helps to meet these new challenges by offering opportunities for better quality and efficiency. Education, facilitated by the new ICT or e-learning, can inevitably transform learning and instruction forms in ways "that extend beyond the efficient delivery or entertainment value of traditional approaches" (Al-harbi, 2011; Garrison & Anderson, 2003).

In fact, as proposed by some researchers (such as Byrne, 2002; Fung & Yuen,2005), having the technology available and accessible does not necessarily mean that the individuals will find it useful, find it easy to use, or even find it at all. Users are sometimes reluctant to accept and use available technologies and exhibit little prompt interest in trying the innovative technology, even if the technology may offer them better solutions or advantages (Liaw, 2002b).

It is also underscored by McPherson and Nunes (2006) that little research has been allotted to elaborate on institutional facets associated with the adoption and implementation of e-learning, that seems to be essential for the process at all stages. Although there is an immense body of research dealing with users in developed countries, predominantly in the U.S. and Europe, only a few have been conducted in the developing countries (Al-hawari & Al-halabi, 2010; Alsabawy, Cater-Steel & Soar, 2011; Dirani & Yoon, 2009; Fusilier & Durlabhji, 2005; Mashhour & Saleh, ,2010; McCoy & Everard, 2000;) and Arab world and Middle Eastern (Al-alak & Alnawas, 2011; Al-Asmari, 2005;

Aldojan, 2006; Ali & Magalhaes, 2008; Alsunbul, 2002; Andersson |& Gronlund, 2009; Dhanarajan, 2001; Guessoum, 2006; Heeks, 2002; Mirza & Al-Abdulkareem, 2011; Rajesh, 2003; Taha, 2007), Nonetheless, it is

hard to consider the results obtained from the studies of the developed countries would be applied to other countries (Abouchedid & Eid, 2005).

For this reason, more and more educational institutions around the world are embracing e-learning systems and investing heavily in education sector.

2.Literature review

In this digital age, computers and internet technology have a steady presence in higher education(Al-Qeisi, 2009). A growing number of tertiary institutions and universities have been enhancing their programmes with e-learning systems (Al-Qeisi, 2009; Fung & Yuen, 2005). However, the potential benefits of e-learning as aid to teaching and learning may not be fully achieved as a result of poor adoption by users (Fung & Yuen, 2005; Huang et al., 2006; Liaw, 2002b), and without the real user acceptance, the implementation of the new technology will be difficult (Altarawneh, 2011; Huang et al., 2006).Ajzen (1988) argues that the so-called "external" influences on behaviour should be mediated through the theory of Planned Behaviour variables: that is attitude(AT), subjective norm (SN) and perceived behavioural control (PBC). Accordingly, these global constructs (AT, SN and PBC) mediate the effects of their belief-based determinants on intention (Ajzen, 1988; Ajzen & Fishbein, 1980).

Generally, for a variable or group of variables to function as mediators, a relationship should exist between the independent variable (belief constructs) and the mediating variable (global constructs), as well as between the mediating variable and the dependent variable (Baron & Kenny, 1986). However, while most research has been concerned with the relationship between the global constructs and behavioural intention (BI), the relationship between belief-based variables, mediators (AT, SN and PBC) and BI has only been a topic in a very limited number of studies (Godin, Gagné, & Sheeran, 2004).

For example, the findings of Courneya, Friedenreich, Arthur, and Bobick (1999) show that TPB only partially mediated the influence of personality measures on exercise behaviour. In addition, Conner and Abraham (2001) found that the theory mediated the relationship between conscientiousness and intention. Armitage, Norman and Conner (2002) reported that the model mediated the link between demographics and behaviour. Ndubisi (2004) found that the theory constructs mediated the influence of several external factors on intention. This study also aims to study the possible mediating role of the global constructs of TPB on the links between several external factors and intentions.

2.1Attitude

Attitude is one of the most important concepts in social psychology (Manstead & Hewstone, 1995). Definitions of attitude have varied over time. However, much of the literature describes attitude in a single or tripartite account (Zanna & Rempel, 1988). The single perspective views attitude as an evaluative judgment of an object in terms of its degree of goodness or badness. Ajzen's (2005) definition of attitude as a "disposition to respond favorably or unfavorably to an object, institution or event", represents this view. Attitude has been frequently used to explain human behaviours (Zimbardo, Ebbesen, & Maslach, 1977). However, numerous studies have found attitude to be a very poor predictor of actual behaviour (Wicker, 1969). Attitude mediates the relationship between perceived usefulness and perceived ease of use in one hand and behavioural intention in other hand. Attitude has an important direct influence on intention to adopt e-learning. Attitude is anchored to perceived usefulness, ease of use. With regards to e-learning, attitude towards this learning framework will be positively influenced by its perceived usefulness, and ease of use.

Perceived usefulness and ease of use are important technology adoption determinants in the technology acceptance model (Davis et al., 1989).Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis et al., 1989). Perceived usefulness is similar to the construct of relative advantage suggested by Rogers in his PCI model (Moore & Benbasat, 1991). In addition Davis (1989) defined Perceived Ease of Use (PEOU) as "the degree to which a person believes that using a particular system would be free from effort" (Davis et al., 1989). PEOU represents an individual's intrinsic motivation to use a technology (Arbaugh, 2002a).A significant body of studies has shown that perceived usefulness and perceived ease of use are determinants of usage (e.g., Igbaria et al., 1997; Szajna, 1994).

2.2Subjective norms

Subjective norms refer to "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). Subjective norms have been found to be more important prior to, or in the early stages of innovation implementation when users have limited direct experience from which to develop attitudes (Hartwick & Barki, 1994; Taylor & Todd, 1995). Chua (1980) suggests that the adopter's friends, family, and colleagues are groups that will potentially influence adoption.

2.3 Perceived behavioural control

Perceived behavioural control (PBC) is an additional construct proposed by Ajzen (1985) to cater for explaining non-volitional actions. It is defined as "people's perception of the ease or difficulty of performing the behaviour of interest (Ajzen, 1991, p. 183). Specifically, PBC implies that, the existence of constraints can hamper intentions to perform behaviour and its actual performance. According to Ndubisi (2004) and (Taylor & Todd, 1995a) Perceived Behavioural Control (PBC) refers to the constraints to technology usage. Following from the definition of perceived behavioural control presented earlier, TPB research (e.g., Sparks et al., 1997) has provided evidence indicating that perceived difficulty-especially as it is related to internal constraints is the most important factor It is essential to note that it is the individuals perception of control and not the actual control that he or she has over the behaviour that is measured in TPB. The dimensions of PBC in this study include:1) Internet Self-efficacy-The concept of self-efficacy is concerned with judgments of how well one can execute courses of action required to deal with prospective situations (Bandura, 1997),2) Perceived Accessibility-refers to how web-page designers and developers make web content more accessible to people with special needs (Paciello, 2000).and 3) University Support-University Support can take the form of support from technical experts, provision of adequate computer and internet facilities as well as training (Cheung & Huang, 2005). Technical support including help with hardware, software or internet connection problems was found to be an important factor in the acceptance of technology for education (Abbad et al., 2010; Ngai et al., 2007; Selim, 2007).
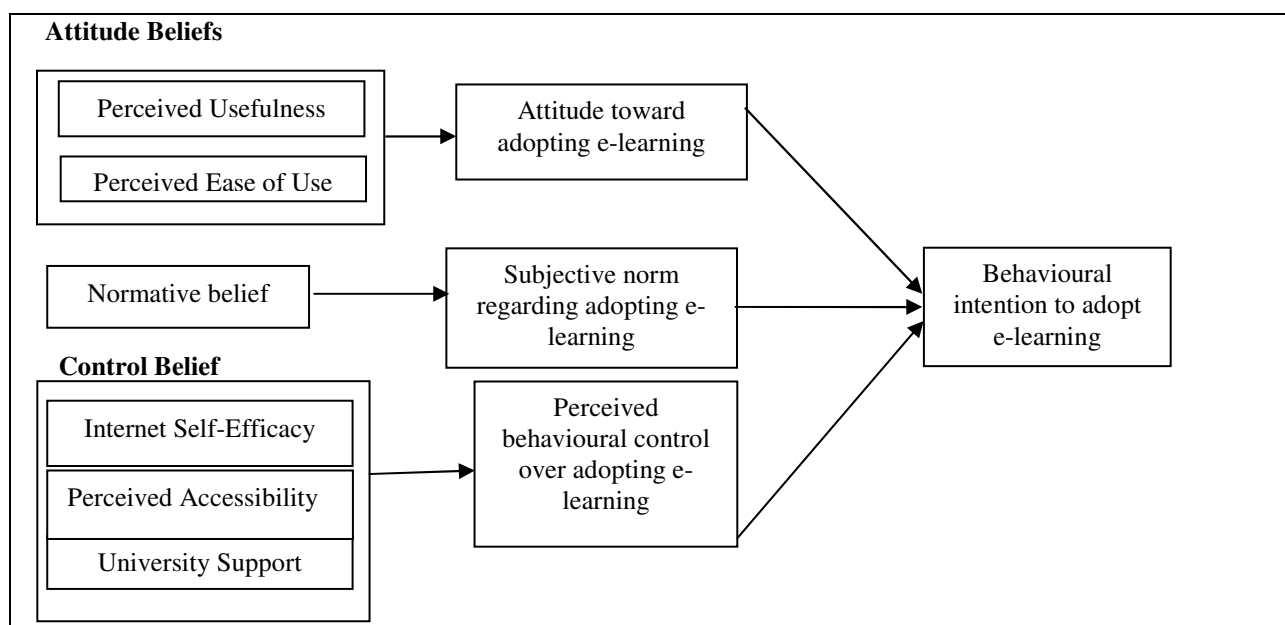
Figure 1: Research framework

3. Research design

The samples of this study consists of instructors of three public Universities and three private universities in Jordan who have introduced to e-learning. The sampling of this study is done in accordance with regional distributions in Jordan. Jordan is divided into three regions; northern, middle, and southern regions. Three public universities will be chosen randomly from all regions as follows: Yarmouk University from the northern region, Jordan University from the middle region, and Mu'tah University from the southern region. Similarly, three private universities will be chosen randomly as

follows: Jerash University from the northern region, applied University from the middle region, and Al-Zaytoonah University from the southern region. The stratified random sampling method was used in sample selection. A total of 360 instructors from the six universities responded to the survey, of which 245were usable. Several aspects of e-learning are explored including behavioural intention, attitude, subjective norms, perceived behavioural control, perceived usefulness, perceived ease of use, normative belief, Internet Self-efficacy, University Support and Perceived Accessibility.

The questionnaire consists of eleven parts. The first part of the questionnaire contains 7 items for instructors, which mainly concerns with the demographic data for instructors, the demographic data include: Gender, age, internet experience, Frequency of Internet, specialization, university and rank.

Structured questionnaire was used in this research. Respondents were surveyed using Eleven-part questionnaire. Parts one concerns with the demographic data for instructors, the demographic data include: Gender, age, internet experience, Frequency of Internet, specialization, university and rank , part two measure e-learning adoption intention, with items adapted from Lee (2001).Part three measures attitude towards e-learning with five items taken from Ngai et al. (2007). Part four measures the subjective norm with five items taken from Ajzen and Fishbein (1980), Taylor and Todd (1995a) and Venkatesh and Davis (2000) while Perceived Behavioral Control was measured in parts five with five items from Taylor and Todd (1995a, 1995b). Perceived Usefulness and Perceived Ease of Use were measured in parts six and seven from Lee (2001) and Pituch and Lee (2006). Part eight measures normative belief with six items adapted from Ajzen (2006), while part nine measures University Support with eight items adopted from selim (2007). With seven items from Cassidy and Eachus (2002), Internet Self-Efficacy was measured in part ten. Part eleven measures Perceived Accessibility with five items adopted from Lin and Lu (2000). Demographic variables were captured in part thirteen withsingle item measures. Questionnaire items (except for Internet Self-Efficacy) were measured on a five point Likert-scale anchored at both extremes to 1(strongly disagree) and 5 (strongly agree). Internet Self-Efficacy is anchored to 1 (No confidence) and 5 (very high confidence).

Hierarchical Multiple Regression Model (Abrams, 1999) was employed to predict the relationships in the construct. The predictor variables were entered into the model in different stages. The hierarchical regression is employed so that the increase in R^2 corresponding to the inclusion of each category of predictor variables. The R^2 for all sets can be analyzed into increments in the proportion of intention to adopt (Y) variance due to addition of each new set of predictor variables to those higher in the hierarchy. These increments in R^2 are squared multiple semi partial correlation coefficients.

The mediator effects of attitude, subjective norms, and perceived behavioural control were measured based on Mediation Model (Baron & Kenny, 1986). According to Baron and Kenney (p. 1176), a variable functions as a mediator when it meets the following conditions: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator, (b)variations in the mediator significantly account for variations in the dependent variable, and (c)when a and b are controlled, a previously significant relation between the independent and dependent variables is no longer significant or it is significantly decreased.

3.1Results and discussion
3.1.1 Reliability analysis and descriptive statistics
In this research , alpha values for all dimensions exceed the .60 lower limit of acceptability (Hair et al., 1998). the alpha scores for all the sub-scales are presented in Table 1 below. sub-scales (US) had α of 0.90 which indicate excellent reliability according to Hinton et al. (2004). The remaining sub-scales (AT, BI, ISE, NB, PBC, PA, PEOU ,PU, SN and) had alpha values of (α =.83, .83, .80, .84, .80, .81 , .82, .82 and .84) which is also regarded as high (Hinton et al., 2004). This means that items measuring the construct dimensions are reliable

Table 1: reliability results

Scale	No. of Items	Coefficient α
AT	5	.83
BI	6	.83
ISE	7	.80
NB	6	.84
PA	5	.81
PBC	6	.80
PEOU	4	.82
PU	7	.82
SN	4	.84
US	8	.90

3.2 Mediation effects

The mediation effects of attitude, subjective norms, and perceived behavioural control on the relationship between the independent variables and adoption intention were assessed following the recommendation of Baron and Kenney (1986). By hierarchically regressing the independent variables (in step 1) and the mediators (in step 2) against the dependent variable, mediation effects are established as shown in the following Table. Table 3 shows the mediation effects of attitude subjective norms and perceived behavioural control**.**

Table 2: Mediation effect of attitude, subjective norm and Perceived Behavioural Control (PBC*)*

Independent Variables	Std Beta Step 1 *attitude*	Std Beta Step 2 *Attitude*
Perceived Usefulness(PU)	.11	.08
Perceived Ease of Use(PEOU)	.08	-.06
	R^2=.19	R^2=*.20*

	Std Beta Step 1 *Subjective Norm*	Std Beta Step 2 *Subjective Norm*
Normative beliefs	.01	-.05
	R^2=.22	R^2=.26

	Std Beta Step 1 *PBC*	Std Beta Step 2 *PBC*
US	.07	-.05
PA	.12	.11
ISE	.07	-.05
	R^2=.02	R^2=.03

Attitude mediates the relationship between perceived usefulness and perceived ease of use in one hand and behavioural intention in another for two reasons: (1) the beta coefficients for step 1 are significantly higher than those of step 2 (Baron and Kenney, 1986),and (2) the increase in $R^2$of .19 is explained by the mediation effect of attitude. The coefficient of determination (R^2) for the step 1 regression is .19, indicating that 19 percent of the variation in dependent variable (attitude) is explained by the independent variables included in the regression. The coefficient of determination (R^2) for the step 2 regression is .20, indicating that20 percent of the variation in dependent variable is explained by the independent variables and the mediator (attitude) included in the regression. The difference between the two coefficients of determination is accounted for by the mediation effect of attitude.

Table 2 above displays the results of the hierarchical regression testing for the mediation effect of SN on the relationship between SN belief dimension and BI. The results showed that while the

dimension of SN belief significantly influenced BI in the first step, they failed to influence BI significantly upon the introduction of the mediator variable in the second step. Furthermore, the mediator variable positively and significantly influenced the BI in the second step (β=-.05, p<.00) indicating that the SN fully mediated the relationships between the dimension and BI.

Lastly, the mediation effects of perceived behavioural control (PBC) were evaluated and the results are summarized in Table 2. The results suggest that, perceived behavioural control mediates the relationship between the independent variables and intention to adopt e-learning. Hence, there is an indirect relationship (via perceived behavioural control) between US, PA, and ISE and adoption of e-learning.

4.Implications

Attitude has an important direct influence on intention to adopt e-learning. Attitude is the findings that attitude, SN and PBC mediate the effects of their salient beliefs on intention have theoretical and practical implications. Firstly, from a theoretical point of view, if the belief constructs have direct strong effect on intention (i.e. the effect is not mediated by attitude, SN and PBC), the validity of the main constructs (attitude, SN and PBC) as the only determinants of intention, is then questionable. On the contrary, if mediation exists, as is the case in this research, the model is supported and Ajzen (2005) claim, that any other factor influences intention through these constructs, is backed up. Secondly and more importantly, from a practical point of view, since the effects of belief-based variables were mediated through the main factors (attitude, SN and PBC), it can be concluded that the three variables may offer suitable and sufficient targets for setting strategies aimed at encouraging e-learning adoption. As an example, since favourable attitudes towards adopting e-learning can lead to greater intentions to adopt e-learning, efforts to build favourable attitudes toward e-learning amongst the instructors can be effective in accelerating its acceptance. This is particularly important, as the factors suggested in the research model did not (nor any other model), form a comprehensive list of all the potentially critical factors that influence the intention to adopt e-learning.

These findings are particularly relevant to systems designers targeting instructors with their e-learning applications, as well as university administrators, as it unveils ways to increase instructors involvement in e-learning. In addition its relevant the libraries in the Arab world with information about adoption of e-learning. Also to help researcher to develop a general framework for adopting e-learning in the higher education .

5.Conclusion

In other to enhance e-learning adoption intention and in turn acceptance among instructors in Jordanian universities, relevant parties to this learning arrangement should attempt to build favourable attitude through enhanced usefulness and ease of use perceptions. Subjective norm should be enhanced normative beliefs, and Perceived behavioural control should also be improved, specifically by enhancing university support, Internet Self-efficacy, and Perceived Accessibility.

References
Abbad, M.M., Morris, D., Al-Ayyoub, A., & Abbad, J.M. (2010).Students' Decisions to Use an eLearning System: A Structural Equation Modelling Analysis. doi:10.3991/ijet.v4i4.928
Abrams, D. R. (1999). Introduction to Regression 1, Princeton University Data and Statistical Services, Retrieved from http://www.data@princeton.edu, Updated PHB: July 26.
Ajzen, I. (1985). From intentions to actions: The theory of Planned Behaviour. In J. Kuhl, & J. Beckmann (Eds.), Action Control: From cognition to behaviour (pp. 11-39). Berlin: Springer-Verlag.
Ajzen, I. (1988). Attitudes, personality, and behavior. Milton-Keynes, England: Open University Press & Chicago, IL: Dorsey Press
Ajzen, I. (1991). The theory of Planned Behaviour. Organisational Behaviour and Human Decision Processes, 50, 179-211.
Ajzen, I. (2005). Attitudes, personality and behaviour (2nd ed.). Maidenhead: Open University Press.
Ajzen, I. (2005). Attitudes, personality and behaviour (2nd ed.). Maidenhead: Open University Press

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behaviour. Englewood Cliffs, New Jersey: Printice-Hall.

Alfahad, F. (2012). Effectiveness of using information technology in higher education in Saudi Arabia. Social and Behavioral Sciences. 46, 1268 – 1278

Al-Harbi, K. (2011). E-learning in the Saudi Tertiary Education: Potential and Challenges. Saudi Journal for Applied Computing and Informatics, 2(8).

Al-Qeisi, KH. (2009).Analyzing the Use of UTAUT Model in Explaining an Online Behaviour: Internet Banking Adoption. Department of Marketing and Branding, Brunel University, A thesis for the degree of Doctor of Philosophy

Altarawneh, H. (2011). A Survey of E-Learning Implementation Best Practices in Jordanian Government Universities. IJAC – Volume 4, Issue 2, May 2011.

Arbaugh, J. (2002b). Virtual classroom characteristics and student satisfaction in internet-based MBA courses. Journal of Management Education, 24 (1), 32-54. DOI: 10.1177/105256290002400104

Armitage, C., & Conner, M. (1999). The theory of Planned Behaviour: Assessment of predictive validity and perceived control. British Journal of Social Psychology, 38, 35-54. DOI: 6537 B, 35400008341308.0030

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: W. H. Freeman and Company.

Baron, R., & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182. DOI: PMID: 3806354

Cassidy, S., & Eachus, P. (2002). Developing the computer user self-efficacy (CUSE) scale: Investigating the relationship between computer self-efficacy, gender and experience with computers. Journal of Educational Computing Research, 26 (2), 169-189.

Cheung, W., & Huang, W. (2005). Proposing a framework to assess internet usage in university education: An epirical investigation from a student‟s perspective. British Journal of Educational Technology, 237-253. DOI: 10.1111/j.1467-8535.2005.00455.

Chua, E.K. (1980). Consumer Intention to Deposit at Banks: An Empirical Investigation of its Relationship with Attitude, Normative Belief and Confidence, Academic Exercise, Faculty of Business Administration, National University of Singapore.

Conner, M., & Abraham, C. (2001). Conscientiousness and the theory of Planned Behaviour: Toward a more complete model of the antecedents of intentious behaviour. Personality & Social Psychology Bulletin, 27 (11), 1547-1561. DOI: 10.1177/01461672012711014

Courneya, S., Friedenreich, C., Arthur, K., & Bobick, T. (1999). Understanding exercise motivation in colorectal cancer patients: A prospective study using the theory of Planned Behaviour. Rehabilitation Psychology, 44, 68-84. DOI: 10.1111/j.1559-1816.2004.tb02010.x

Davis, F., Bagozzi, R., & Warshaw, P. (1989). User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35 (8), 982-1003. DOI: 10.1287/mnsc.35.8.982

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behaviour: An introduction to theory and research. Reading: Addison-Wesley

Fung, H., & Yuen, A. (2005). Student adoption towards web-based learning platform. In R. Lau, Q. Li, R. Cheung, & W. Liu, (Eds.), Advances in Web-Based Learning ICWL 2005. Berlin, Heidelberg: Springer. DOI: 10.1007/11528043

Garrison, D., & Anderson, T. (2003). E-learning in the 21st Century: A framework for research and practice. London: Routledge Falmer.

Godin, G., Gagné, C., & Sheeran, P. (2004). Does Perceived Behavioural Control mediate the relationship between power beliefs and intention? British Journal of Health Psychology, 9 (4), 557-568. DOI: 10.1348/1359107042304614

Goodyear, P. (1996). Asynchronous peer interaction in distance education

Hair, J., Black, B., Babin, B., Anderson, R., & Tatham, R. (2006). Multivariate Data Analysis. Upper Saddle River, N.J.: Pearson Education

Hartwick, J., and Barki, H. (1994). Explaining the Role of User Participation in Information System Use, Management Science, 40(4), 440-465.

Hinton, P., Brownlow, C., McMurray, I., & Cozens, B. (2004). SPSS explained. London: Routledge.

Huang, S.-M., Wei, C.-W., Yu, P.-T., & Kuo, T.-Y. (2006). An empirical investigation on learners‟ acceptance of e-learning for public unemployment vocational training. International Journal of Innovation and Learning, 3 (2), 174-185. Retrieved on Feburary 13, 2010 from:

http://inderscience.metapress.com/openurl.asp?genre=article&eissn=1741-8089&volume=3&issue=2&spage=174.

Igbaria, M., Zinatelli, N., Cragg, P., & Cavaye, A.L.M. (1997). Personal Computing Acceptance Factors in Small Firms: A Structural Equation Model, MIS Quarterly, 21(3), 279-305.

Lee, Y.-K. (2001). Factors affecting learner behavioural intentions to adopt web-based learning technology in adult and higher education. Unpublished doctoral dissertation, University of South Dakota

Liaw, S.-S. (2002b). Understanding user perceptions of World Wide Web environments. Journal of Computer Assisted Learning, 18, 137-148. ISSN: 0266-4909.

Lin, J., & Lu, H. (2000). Towards an understanding of the behavioural intention to use a web site. International Journal of Information Management, 20 (3), 197-208. DOI: doi:10.1016/S0268-4012(00)00005-0

Manstead, A., & Hewstone, M. (1995). Attitude theory and research. In The Blackwell encyclopedia of social psychology (pp. 47-52). Oxford: Blackwell.

Moore, G., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. Information Systems Research, 2 (3), 192-222. DOI: 10.1287/isre.2.3.192.

Ndubisi, N. (2004). Factors influencing e-learning adoption intention: Examiningthe determinant structure of the decomposed theory of Planned Behaviour constructs. Proceedings of the 27 th HERDSA Annual International Conference (pp. 252-261). Miri, Sarawak, Malaysia. Retreived on Feburary 10, 2010 from: http://www.herdsa.org.au/wp-content/uploads/conference/2004/PDF/P057-jt.pdf.

Ngai, E., Poon, J., & Chan, Y. (2007). Empirical examination of the adoption of WebCT using TAM. Computers & Education, 48 (2), 250-267. DOI: 10.1016/j.compedu.2004.11.007.

Paciello, M. (2000). Web accessibility for people with disabilities. Lawrence: CMP.

Pituch, K., & Lee, Y.-K. (2006). The influence of system characteristics on e-learning use. Computers & Education, 47, 222-244. DOI: 10.1016/j.compedu.2004.10.007

Selim, H. (2007). Critical success factors for e-learning acceptance: Confirmatory factor models. Computers & Education, 49 (2), 396-413. DOI: 10.1016/j.compedu.2005.09.004

Shoniregun, C. A., & Gray, S.-J. (2004). Is e-learning really the future or a risk? Retrieved May 3, 2004, from http://www.distance-educator.com /dnews /Article 11123.html.

Sjazna, B. (1994). Software Evaluation and Choice Predictive Validation of the Technology Acceptance Instrument, MIS Quarterly, 18, pp. 319-324.

Sparks, P., Guthrie, C. A., & Shepherd, R. (1997). The dimensional structure of the 'perceived behavioral control' construct. Journal of Applied Psychology, 27, 418–438.

Taylor, S., & Todd, P. (1995b). Assessing IT usage: The role of prior experience. MIS Quarterly, 19 (4), 561-568

Venkatesh, V., & Davis, F. (2000). A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. Management Science, 46 (2), 186-204. ISSN: 0025-1909.

Wicker, A. (1969). Attitudes versus actions: The relationship of verbal and overt behavioural responses to attitude objects. Journal of Social Issues, 25, 41-78.

Zanna, M., & Rempel, J. (1988). Attitudes: A new look at an old concept. In D. Bar-Tal, & A. Kruglanski, The social psychology of knowledge (pp. 315-334). Cambridge: Cambridge University Press.

Zimbardo, P., Ebbesen, E., & Maslach, C. (1977). Influencing attitudes and changing behaviour. Reading, MA: Addison-Wesley.

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