

## Investigating the effective factors on actual use of computer among students of virtual learning On the basis of Davis's model

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**Abstract:** Knowing the effective factors in technology dology in this study is correlation.. Data of this study is analyzed by path analysis. Research results indicate that there is a significant relationship between subacceptance and establishing the suitable circumstances in which technology accepted and used are of the important issues in the field of technology. Of the influential factors in this field is acceptance and use of technology among different people e.g. teachers, university students and so on. Accordingly, this study investigates the effective factors on actual use of technology among students of virtual learning. Research methojective norm, attitude, and computer experience with actual use. Also, subjective norm has a significant effect on attitude toward using technology. This study also indicates that computer experience has a direct effect on subjective norms.

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**Key words:** Actual Use, Computer experience, Subjective norm, attitude

### 1. Introduction

Information and communication technologies (ICT) have become commonplace entities in all aspects of life like education. Since the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important. Because most institutions perceive information technology as a tool to facilitate teaching - learning process, study and research on influencing factors in order to increase learning effects could be important (Jong 2003). Numerous research results indicate that the use of ICT is not the outcome of one factor but several factors are influencing this variable. Teo and his colleagues in a research in 2007 which is titled " understanding pre-service teachers' computer attitudes: applying and extending the technology acceptance model" conclude that subjective norm is one of the factors influencing teachers' attitudes. The results of Teo's research are confirmed in a survey by Pan (2003) on 610 students at the University of Fluoride. Some researches examine the relationship between attitudes, subjective norms and actual use such as Mayorga 2010; Lee et al 2009; Porter et al 2006. For example, Mayorga(2010) does a study titled "the professional user: technology acceptance in a technology driven profession" among radiology staff at a American Center in Florida with sending ten thousand email to them. He reports that there is a significant relationship between attitude and actual use of technology. Lee and his colleagues (2009) in a research on 331 employees of ten large companies in Korea finds that subjective norm, perceived usefulness and perceived ease of use are the most important predictors of using Internet.

Porter and colleagues (2006) in a study titled "using the technology acceptance model to explain how attitudes determine Internet usage: the role of perceived access barriers and demographics" find that attitude has a meaningful relationship with actual use. But unlike the above mentioned research results, Young (2007) in a research that is done at the Business School of Central University of Fluoride titled "the effect of technology acceptance on undergraduate students' usage of WEBCT as a collaborative tool" find that subjective norm has not a meaningful and significant effect on attitude and actual use. On the other hand several studies like Ruth 2000; Fagan2004; and Delice 2009 examine the impact of computer experience on actual use of computers. As Park (2003) proposes that computer experience, computer self-efficacy and subjective norm are the most influential and predictive factors affecting the use of Web equipments. Ruth (2000) in a research that is done by sending 2400 emails to various internet users found that computer experience has a significant and direct effect on actual use. In a study by Fagan and colleagues (2004) titled "an empirical investigation into the relationship between computer self-efficacy, anxiety, experience, support and usage ", they found that computer experience has a positive relationship with actual use. Research results of Delice (2009) show that the relationship between subjective norm and computer experience with actual use is significant. Also there is a meaningful relationship between computer experience and subjective norm. Accordingly, researchers and theorists in the field of technology acceptance, use different models and research on

various populations to explain the relationship between factors affecting the use of ICT.

**2. Research Methodology**

Research method of this study is correlation and 436 students of virtual university in Iran are selected by stratified sampling. Measurement tools in this research are standard questionnaires of subjective norm (park, 2003), actual use and computer experience with Fagan (2000) questionnaire, attitude (Teo et al, 2007), and data analysis software that is used is AMOS 18. In this study, to evaluate the reliability of its questionnaires Cronbach's Alpha is used which indicated in Table 2.

**Table 1: Reliability Coefficients of Variables**

Variables	Cronbach Alpha
Subjective norm	0.76
Actual Use	0.85
Attitude	0.81
Computer experience	0.79

**3. Results**

Considering that the correlation matrix is the basis for analysis in casual modeling, correlation matrix of variables with correlation coefficients and their significance levels are presented in Table 2.

**Table 2: Correlation matrix of variables**

Variables	1	2	3	4
Actual Use	1			
Computer experience	.252**	1		
Subjective norm	.189**	.115*	1	
attitude	.248**	.052	.112*	1

P\*\*<0.01; p\*<0.05

According to Table 2, correlation between subjective norm, attitude and computer experience with actual use is significant in at 0.01 and correlation between attitude and

computer experience with subjective norm is significant in at 0.05 levels. Direct, indirect and total effects of variables are presented in Table 3.

**Table 3: Direct, Indirect and Total Effect of Variables**

Effect	Direct effect	Indirect effect	Total effect	T-Value	P
<b>Criterion: Actual Use</b>	-----	-----	-----	-----	
<b>Predictors: Subjective norm</b>	0.188	0.033	0.221	3.594	0.0001
Attitude	0.205	-----	0.205	3.953	0.0001
Computer experience	0.264	0.022	0.286	5.116	0.0001
<b>Criterion: Attitude</b>	-----	-----	-----	-----	
<b>Predictors: Subjective norm</b>	0.159	-----	0.159	2.900	0.004
<b>Criterion: Subjective norm</b>	-----	-----	-----	-----	
<b>Predictors :Computer experience</b>	0.115	-----	0.115	2.089	0.037

According to Table 3, Subjective norm ( $\beta=0.188$ ,  $t=3.594$ ,  $P=0.0001$ ), Attitude ( $\beta=0.205$ ,  $t=3.953$ ,  $P=0.0001$ ), and Computer experience ( $\beta=0.264$ ,  $t=5.116$ ,  $P=0.0001$ ) have significant and direct effect on Actual Use. Subjective norm ( $\beta=0.159$ ,  $t=2.900$ ,  $P=0.004$ ) have significant and direct effect on Attitude. Computer experience ( $\beta=0.115$ ,  $t=2.089$ ,  $P=0.037$ ) have significant and direct effect on Subjective norm.

In this study usual fit index such as  $\chi^2 / df$ , goodness-of-fit index (GFI), adjusted goodness of fit index (AGFI), comparative fit index (CFI), and norm fit index (NFI) are used to evaluate whether the model fit the data.

**Table: 4.2 fit index**

Fit index	Value
$\chi^2$	1.660
df	1
GFI	0.997
AGFI	0.975
CFI	0.989
NFI	0.976
RMSEA	0.07

The ratio of  $\chi^2 / df$  is less than 3, which indicates global fit of the data. The reported root mean square residual of approximation (RMSEA)

was 0.07, less than 0.1 which indicate a good fit. Other indications that the model fits well were the comparative fit index (CFI), which was 0.989, the goodness of fit index (GFI), which was 0.997, the adjusted goodness of fit index (AGFI) which was 0.975 and the null fit index which was 0.976. Values were much larger than the common target of 0.9 for reflecting a good fit.

#### 4. Discussion

Since the relationship between computer experience and actual use of ICT is positive and significant, so we can say that students who have more computer experience in comparison to students who have less computer experience, use computer more. It should be noted that findings of the present study is consistent with the research results of Fagan et al (2009) and Delice (2009), and is inconsistent with the findings of Park (2003), Ruth (2000). In this study the relationship between subjective norms and actual use of ICT like the result of the researches by Lee et al (2009), Park (2003), and Delice (2009) is meaningful and significant but this relationship is not meaningful in the finding of Yang(2007). It seems that students' attitude in applying new technologies and especially computers in teaching-learning process is an important and crucial factor in distance education system. Attitude is defined as positive or negative feelings about performing the target behavior. In this study the effect of it on actual use is direct and meaningful. This result can be confirmed by the results reported in the findings of Mayorga 2010, and Porter et al 2006. As the results show computer experience has a direct effect on subjective norms, therefore, with the increasing use of computer subjective norms also increase. This result is confirmed by Delice (2009). Finally in this research like the study of Teo (2007) and Pan (2003) the relationship between subjective norms and attitude is significant, although this result is inconsistent with the results of Yang (2007).

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