

## **Distance Learners Acceptance of a Course Website**

**T. Ramayah, Bushra Asfaqi & Joshua Ignatius**

School of Management  
Universiti Sains Malaysia, 11800 Penang  
Malaysia

### **Abstract**

The influence of perceived ease of use and perceived usefulness on a course website acceptance and usage by distance learning students of a higher learning institution in Malaysia was investigated. The results showed that the usefulness and ease of use of the course website exerted significant impact on the usage of the website by the students. Perceived ease of use influenced perceived usefulness of the course website and perceived usefulness also partially mediated the impact of perceived ease of use on usage. In the case of mandated use such as this, perceived ease of use was more influential in determining usage as compared with perceived usefulness.

### **Abstrak**

Pengaruh perasaan kesenangan mengguna dan perasaan kebergunaan terhadap penerimaan suatu laman web kursus dan kegunaannya oleh para pelajar pendidikan jarak jauh di institusi pengajian tinggi di Malaysia telah diselidiki. Dapatan kajian menunjukkan bahawa perasaan kebergunaan dan kesenangan mengguna laman web kursus mengenakan impak yang signifikan terhadap kegunaan laman web oleh para pelajar. Perasaan kesenangan mengguna mempengaruhi perasaan kebergunaan bagi laman web kursus dan perasaan kebergunaan juga menjadi perantara separa impak perasaan kesenangan mengguna terhadap kegunaan. Di dalam kes gunaan bermandat seperti ini, perasaan kesenangan mengguna memberi pengaruh yang lebih tinggi dalam menentukan kegunaan jika dibandingkan dengan perasaan kebergunaan.

### **Introduction**

Distance learning is defined as “the practice of educating learners who are separated from the teacher or trainer and each other by space, time, or both” (Moller, 1998). Distance education occurs in a non-classroom setting when students participate in course discussions, exercises, and receive assessment from the instructor by utilizing technology such as video conferencing, audiographics, CD-ROM, and Web-based media (Welsh, 1999). Furthermore distance learning programs are becoming increasingly popular at academic institutions and corporations. Most importantly these programs are offering

learning opportunities for people that are normally restricted by class time and space (McHenry & Bozik, 1997).

Distance learning has become an integral part of the education process over the past few decades and is growing in popularity as technology advances. This has motivated working adults to further their study as more and more through distance learning programs, which are being offered by higher learning institutions. Due to work and time constraints, many employees are enrolling in distance learning courses. Distance learning is making a positive impact in education. Many people who are participating in distance education are unable to attend regular classes because of full schedules and proximity to a learning institution (McHenry & Bozik, 1997). The working adults usually opt for off-campus environment whereby; in one year they have to attend three sessions of videoconferencing and four classes, which are very intensive in nature. Apart from these interactions off-campus students have to heavily rely on the given course website in order to get updates related to course work, assignment details, course notes, reference materials, and course related articles etc. Due to this low interaction, it is thus vital that these off-campus students accept and use course website as much as possible in order to keep themselves updated and to enhance their awareness of the given course.

This paper uses the Technology Acceptance Model (TAM) to explain the course website's acceptance level among higher education institutions students. Hence, this study sets out to find if perceived usefulness and perceived ease of use impacts student's acceptance and usage of a course websites. This study is very timely in nature as more and more institute of higher learning in Malaysia are offering off-campus courses.

### **Literature Review**

Several models have been developed to investigate and understand the factors affecting the acceptance of computer technology among individuals. Among the notable models include Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB) and Technology Acceptance Model (TAM).

A variety of models that incorporate attitudinal, social, and control factors have been advanced to explain IT usage (Davis, 1989; Davis et al., 1989; Mathieson, 1991; Moore & Benbasat, 1991; Thompson et al., 1991), of which the Technology Acceptance Model (TAM) (Davis, 1989) is the most well known. TAM has been validated through testing with a number of technologies (Davis, 1989, 1993; Igbaria, 1993; Igbaria et al., 1994; Dishaw & Strong, 1999) and cultures (Straub et al., 1997). TAM is usually used for explaining the

relationship between usage (both self-reported and anticipated future usage) and perceived usefulness (PU) and perceived ease of use (PEU).

Many studies using the TAM (e.g. Anandarajan et al., 2000) have suggested that the theoretical basis for this model lies in the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975; Azen & Fishbein, 1980) and some have noted its links to the diffusion of innovation (Rogers, 1983). That is, TAM can be seen as an extension or parsimonious representation of TRA.

According to TAM (Davis, 1989), usage behavior (B) is a direct function of behavioral intention (BI). Which is, in turn, a function of attitude toward usage (A), which reflects feelings of favorableness or unfavorableness toward using the technology, and perceived usefulness (U), which reflects the belief that using the technology will enhance performance. Attitude is determined jointly by perceived usefulness and perceived ease of use (E).

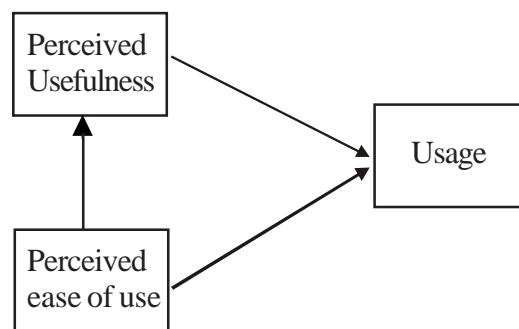
In Malaysia, a study was conducted which used the refined TAM to study the various factors influencing personal computer acceptance by small and medium sized companies (Jantan et al., 2001). In another study done on TAM's validity among Malaysian entrepreneurs, found that among entrepreneurs IT usage was influenced directly by perceived usefulness and indirectly (via usefulness) by perceived ease of use (Ndubisi et al., 2001). TAM was replicated to understand the receptiveness of Malaysian consumers in the E-banking sector (Ramayah et al., 2003b). In addition, TAM was used to study technology usage amongst owners/managers of SME's (Ramayah et al., 2002b). Recently, the study was extended to include the moderating effect of self-efficacy to assess the acceptance of web-based supply chain management among SMEs (Ramayah et al., 2003c).

A research conducted to test the effect of internal computing support, internal training, management support, external computing support and training on TAM. They found that PEU is a dominant factor in explaining PU and system use, but PU has strong effect on use. Exogenous variables influence both PEU and PU (Igbaria et al., 1997). In yet another study tried to find if implementation gap and transitional support have any effect on software acceptance by using TAM model. They concluded that ease of use has the greatest impact on software acceptance (Chau, 1996).

The literature lacks studies that address student use and acceptance of course websites as a teaching and learning tool. There is need for lecturers to know the factors that impact acceptance and usage of course website in order to improve and enhance the learning methods.

A few studies have empirically validated the relationship between perceived ease of use, perceived usefulness and user acceptance of information technologies (Chin & Todd, 1995; Davis & Venkatesh, 1995; Gefen & Keil, 1998; Subramaniam, 1994; Jantan et al., 2001; Ndubisi et al., 2001; Ramayah et al., 2002a; Ramayah et al., 2003a). In this study “course website” is posited as the information technology, whereby students at the given institution are encouraged to use it for their coursework.

Based on the above discussion, TAM (Davis, 1989) was used as the research model (Selim, 2003), which identifies how perceived ease of use and perceived usefulness effect the acceptance and usage of course websites. The basic TAM hypotheses will be verified.



**Figure 1** Research Model

From the literature, this research posits the following hypotheses:

- H<sub>1</sub>: Perceived ease of use will influence perceived usefulness of course websites.
- H<sub>2</sub>: Perceived ease of use will positively influence usage of course websites.
- H<sub>3</sub>: Perceived usefulness will positively influence usage of course websites.
- H<sub>4</sub>: Relationship between perceived ease of use and course websites usage will be mediated by perceived usefulness.

## **Methodology**

### *Data collection, population and sample*

This study collected data at a given institution of higher learning, using a purposive sampling with a questionnaire which was self-administered. The questionnaire was divided into 4-parts which includes demographic information, perceived usefulness, perceived ease of use and usage. Questionnaires were distributed during the last lecture and students were given 15 minutes to respond the questionnaire.

The items used to measure perceived usefulness and perceived ease of use as well as usage were adopted from Selim (2003). Respondents were asked to indicate their agreement or disagreement with several statements on a seven-point Likert scale with 1=strongly disagree to 7=strongly agree. The Cronbach alpha obtained for the measures were 0.97 for perceived usefulness, 0.97 for perceived ease of use and 0.91 for usage.

The population for this research consisted of 200 off-campus students, who needed to use the website for the course titled “Business Research Methods”. Students are encouraged to visit the website in order to get the lecture notes, assignment details, related journal resources etc. The students were told that it was a voluntary participation and not compulsory, thus only 106 students returned the completed questionnaire. The demographic profile of the respondent is presented in Table 1.

**Table 1** Demographic profile of respondents

Variables	Frequency	%
<i>Gender</i>		
Male	37	34.9
Female	69	65.1
<i>Ethnicity</i>		
Malay	56	52.8
Indian	4	3.8
Chinese	44	41.5
Others	2	1.9
<i>Marital Status</i>		
Married	62	58.5
Single	42	39.6
Widowed/separated	2	1.9
<i>Year joined the programme</i>		
2000	2	1.9
2001	65	61.3
2002	37	34.9
2003		
Age	Mean = 31.00 Std. Dev. = 5.89	

### Instrument Validity and Reliability

A factor analysis with Varimax rotation was performed to validate whether the items in each section loaded into the theorized constructs. The results yielded two distinctive factors for PEU and PU and one factor for usage. For PEU and PU the total variance explained was 82.69%, whereas for usage the total variance explained was 77.16%. Both showed sufficient intercorrelations being present with Measures of Sampling Adequacy values of 0.92 ( $\chi^2 = 1347.37$ ,  $p < 0.01$ ) and 0.75 ( $\chi^2 = 293.21$ ,  $p < 0.01$ ) respectively. The criteria used to identify the loadings was that each item should load 0.50 or greater on one factor and 0.35 or lower on another factor (Igarria et al., 1995).

### Findings

In order to test the hypotheses developed for this study, the regression analysis was used. The results from four sets of regression analysis are summarized in Table 2.

**Table 2** Results of regression analysis

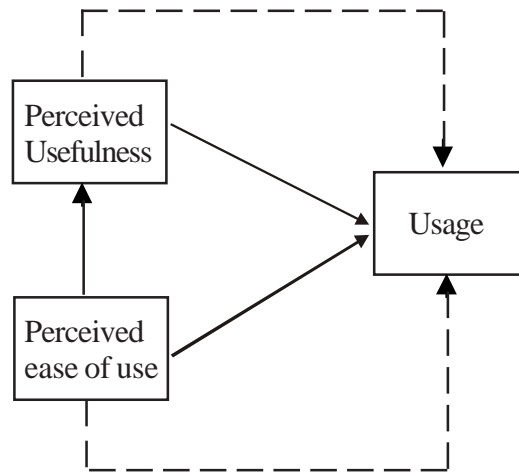
Variable	Dependent variable		Dependent variable	
	PU	Usage	Usage	Usage
PU			0.791**	0.448**
PEU	0.871**	0.848**		0.414**
F value	22.09**	56.02**	170.69**	107.17**
R <sup>2</sup>	0.759	0.719	0.626	0.680
Adj.R <sup>2</sup>	0.757	0.716	0.622	0.673

\*  $p < 0.05$ , \*\*  $p < 0.01$

It can be seen from Table 2, that Perceived ease of use has significant impact on Perceived usefulness ( $\beta = 0.871$ ,  $p < 0.01$ ). Hence,  $H_1$  is fully supported. PEU also has significant impact on the usage of the course website ( $\beta = 0.848$ ,  $p < 0.01$ ), whereby, 84.8% of the variations in usage is explained by PEU when predicting usage of the course website. Hence,  $H_2$  is fully supported. Similarly, PU has significant impact on the usage of the course website ( $\beta = 0.791$ ,  $p < 0.01$ ), with PU explaining 62.6% of variation in usage. Hence,  $H_3$  is fully supported.

Further to that, the fourth hypothesis suggested that the impact of PEU will be mediated by PU. For this purpose we used the criteria suggested by McKinnon et al. (1995) and Baron and Kenny (1986).

From Figure 2, we can observe that perceived ease of use has significant impact on perceived usefulness ( $\beta=0.871$ ,  $p<0.01$ ), perceived ease of use also has a significant impact on usage of course website ( $\beta=0.848$ ,  $p<0.01$ ) whereas perceived usefulness has significant impact on usage ( $\beta=0.791$ ,  $p<0.01$ ). Also, it is apparent that impact of perceived ease of use shrinks upon the addition of perceived usefulness from 0.848 to 0.448. Hence, it can be said that all the conditions of mediation are fulfilled (McKinnon et al., 1995), but we can only find a partial mediation effect as the  $\beta$  value has only decreased in size from 0.848 to 0.448 with the presence of the mediator variable (perceived usefulness). Thus  $H_4$  is supported.



**Figure 2** Result of the regression analysis

## Discussion and Conclusion

The main purpose of this study was to investigate whether the TAM model can be validated for course website acceptance, which is whether perceived usefulness and perceived ease of use acts as contributing factors in predicting course website usage.

### Relationship between perceived ease of use, perceived usefulness and usage of course website

The results of the study suggest that there is a direct and positive impact of perceived ease of use (PEU) on perceived usefulness (PU) as explained by previous studies (Chin & Todd, 1995; Davis & Venkatesh, 1995; Gefen &

Keil, 1998; Subramaniam, 1994; Jantan et al., 2001; Ndubisi et al., 2001; Ramayah et al., 2002a; Ramayah et al., 2003a, Selim, 2003; Igbaria and Iivari, 1995; Chau, 1995).

It was found that perceived ease of use and perceived usefulness have significant impact on the usage of course website. These findings concur with the findings of previous researchers (Chin & Todd, 1995; Davis & Venkatesh, 1995; Gefen & Keil, 1998; Subramaniam, 1994; Jantan et al., 2001; Ndubisi et al., 2001; Ramayah et al., 2002a; Ramayah et al., 2003a, Selim, 2003). A course website needs to be easy to use before users will even think about using it. Hence, it can be said that PEU is an important determinant of usage of course website. It was also observed that a given technology should be perceived to be better to have than to be without. (Jantan et al., 2001; Chin & Todd, 1995; Davis & Venkatesh, 1995; Gefen & Keil, 1998; Subramaniam, 1994; Ndubisi et al., 2001; Ramayah et al., 2002a; Ramayah et al., 2003a, Selim, 2003, Dillon & Cintron, 1997). Hence, perceived usefulness is also an important factor in determining website usage.

When perceived ease of use and perceived usefulness are combined together to see their impact on the course website usage, it was found that perceived usefulness acts as a partial mediator. These findings are in line with previous studies, which have validated TAM for various information technologies (Chin & Todd, 1995; Davis & Venkatesh, 1995; Gefen & Keil, 1998; Subramaniam, 1994; Jantan et al., 2001; Ndubisi et al., 2001; Ramayah et al., 2002a; Ramayah et al., 2003a, Selim, 2003).

As off-campus students are mandated to use the course website due to low interaction, it can be seen from the results that perceived ease of use is more important in determining usage level of the course website as compared to perceived usefulness. Students are more concerned whether it would be easier for them to use the website, rather than whether the given website will be useful for them. This findings supports the research of Brown et al. (2002) which was done in a mandated environment.

The findings of this study can be used by lecturers and university administrators to encourage the acceptance and usage of course website. They can focus on the usefulness and ease of use aspect of course website when encouraging students to use a given website. They should give students information or training on how to fully utilise and use the course website which will make them perceive that the given website will be useful for them in achieving better results and which will be easy for them to use, that is to say they don't have to spend a lot of time learning how to use it.



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