A Study on Acceptance of the Comprehensive Travel Agency Employees use the Handheld Devices

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Abstract

As the rapid development of communication and Internet technology, the applications of technology also change swiftly. Mobile technologies offer new opportunities for learning activities and information receiving to take place in different locations and times. The purpose of this study is to explore the acceptance of the Comprehensive Travel Agency Employees use the handheld devices. This research adopt model by Venkatesh et al., 2003, Unified Theory of Acceptance and Use of Technology (UTAUT). To hope the result was expected to provide some comprehensive travel agencies as reference when making the strategy.

Keywords: UTAUT, Mobile Learning.

1. Introduction

The staffs of travel agents need to work outside the company, so can not receive the updated information immediately and participate in education and training within the company. In consequence, how to proceed with learning and to receive immediate information must rely on mobile devices to acquire and learn relevant information.

The advancement of information technology brings convenience to the public in respect of information exchange. However, it is prior to choose an appropriate mobile device for action learning. As a result, in recent years many smart phones, from iPhone to the G1 smart phone which makes the hit before sale, are continually updated in new versions and become the first choice for many business people when considering the mobile device.

Herewith, this study will start from psychological perspective to probe into inner thoughts of the staff related to variables including values of use and attitude when they utilize G1 smart phone to proceed with action learning, as well as to explain their willingness of use from attitude perspective of Unified Theory of Acceptance & Use of Technology (UTAUT) when utilizing G1 smart phone to proceed with mobile learning. This is the major motive of this study.

According to the above-mentioned research background and motive, this study will be based on Unified Theory of Acceptance & Use of Technology (UTAUT) to probe into the willingness of travel agent staff when they utilize G1 smart phone to proceed with mobile learning, and their differences.

2. Literature Review

2.1 Handheld Devices –T-Mobile G1

In this paper, we use the handheld devices what is the smart phone. The popular smart phone is iPhone. The easiest-to-use phone, right out of the box, is the iPhone. It's that ease that has propelled it to the No. 1 selling position, surpassing the Motorola Razr.

The T-Mobile G1 gained attention as the first phone offering a Google Chrome browser, which means that you are getting the real Web on your phone, not a version dumbed down for a slow processor and small screen. It also has the Android operating system, which will allow any developer to build applications for it, virtually without restrictions. The phone has a nice hefty case that contains a triple-threat of Web navigation. For one, there's an actual Qwerty backlit keyboard, not a virtual one. But there's also a touch screen and a built-in track ball, very handy for navigating Web pages shrunk to fit the three-and-a-quarter-inch screen. As a Google product should, the G1 easily synchronizes with applications like Gmail, Google Calendar, Google Talk and, of course, Google Maps. Because it is backed up

on the Web, if you lose your phone all of your contacts and data will be restored automatically when you get a new one. The phone has a 3.2-megapixel camera and a slot for a micro SD card that lets you expand the memory up to 16 gigabytes, the current card limit. It has a music player and links to Amazon. As a GSM phone, it can also be used overseas. But it's the phone's potential that qualifies it for the futurist. The first applications are interesting, but they don't always work smoothly. The system should improve as it goes, and it holds great promise. By putting few restrictions on the design of applications for the phone, the G1 could be the first to incorporate some of the coolest software (Furchgott, 2008).

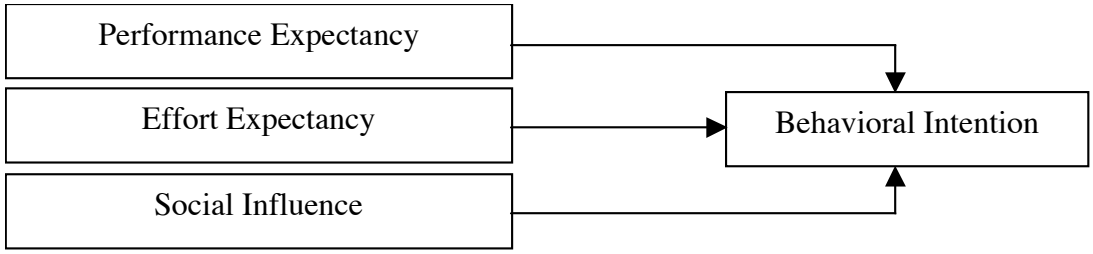
2.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh, Morris, Davis, G. and Davis, F. (2003) reviewed user acceptance literature and discuss eight prominent models, empirically compare the eight models and their extensions, formulate a unified model that integrates elements across the eight models, and empirically validate the unified model.

The eight models reviewed are the theory of reasoned action, the technology acceptance model, the motivational model, the theory of planned behavior, a model combining the technology acceptance model and the theory of planned behavior, the model of PC utilization, the innovation diffusion theory, and the social cognitive theory. Using data from four organizations over a six-month period with three points of measurement, the eight models explained between 17 percent and 53 percent of the variance in user intentions to use information technology. Next, a unified model, called the United Theory of Acceptance and Use of Technology (UTAUT).

3. Methodology

3.1 Research Model



3.2 Hypotheses

Venkatesh et al. (2003) suggests that performance expectancy has significant influence on users' behavior intention in Unified Theory of Acceptance & Use of Technology (UTAUT) Model. In addition, researchers also imply that recognizing its easiness to use would affect the behavior intention (e.g., Thompson et al. 1991; Davis et al. 1989) Moreover, studying TRA and TAM models, Davis et al. (1989) found that subjective principles (social effects) have no significant influence on the behavior intention but he thinks the information technology does. Therefore, he proposed that it is necessary to discuss social effects' influence on the behavior intention. According to reference described above, this study develops hypotheses as below.

H1_GPerformance expectancy has a significant positive influence on behavioral intention.

H2_GEffort Expectancy has a significant positive influence on behavioral intention.

H3_GSocial Influence has a significant positive influence on behavioral intention.

3.3 Variables and Operational Definition

Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance. Effort expectancy is defined as the degree of ease associated with the use of the system. Social influence is defined as the degree to which an Individual perceives that important others believe he or she should use the new system. Behavioral intention is defined as to use the system used in much of the previous individual acceptance extensively.

3.4 Sampling

Using the disproportionate stratified random sampling in this study. The subjects are from integrated travel agencies in Great Taipei area and sampled based on proportion of employee. The questionnaire is issued to integrated travel agencies in Great Taipei area from 1st December 2008 to 31st January 2009. 680 responses are retrieved, among which 112 responses are invalid and 538 responses are valid. The valid response rate is 82.77%.

To verify the constructed model, this study applies Structural Equation Model (SEM) to test the hypothesis by reliability and validity analysis and LISREL analysis.

4. Data analysis and tools

4.1 Descriptive Analysis

Among all the valid responses for this study, female is the majority (67.5%). Subjects are most at the age between 26 and 30 (32.7%), between 21 and 25 the second (19.9%), revealing that staffs are most young. Highest education of staff served in integrated travel agencies is most bachelor degree(52.6 %); they are most from sales department(37%); their total years of work experience is most 2 years(16.4%).

4.2 Reliability and Validity Analysis

At the first stage, confirmatory factor analysis, the model is verified that in judgment of model's internal quality. Those deleted items are X04. Afterwards, these four latent variables are verified through confirmatory factor analysis and the results are as below.

Table1 Confirmatory Factor Analysis of Performance Expectancy

variables	**MLE estimation**		**Composite reliability**	**Average variance extracted**
	Factor loadings	**Measurement errors**		
X01	0.85	0.28	0.9013	0.7540
X02	0.96	0.08		
X03	0.79	0.38		
GFI=0.94 ,NFI=0.95 ,CFI=0.95 ,RMSR=0.000 ***p<0.001				

Table 2 Confirmatory Factor Analysis of Effort Expectancy

variables	**MLE estimation**		**Composite reliability**	**Average variance extracted**
	factor loadings	Measurement errors		
X05	0.78	0.39	0.9150	0.7297
X06	0.87	0.24		
X07	0.90	0.20		
X08	0.86	0.25		
GFI=0.91 ,NFI=0.94 ,CFI=0.94 ,RMSR=0.306 ***p<0.001				

Table 3 Confirmatory Factor Analysis of Social Influence

variables	**MLE estimation**		**Composite reliability**	**Average variance extracted**
	factor loadings	Measurement errors		
X09	0.96	0.08	0.8613	0.6792
X10	0.95	0.09		
X11	0.68	0.91		
The model is saturated, the fit is perfect.				

Table 4 Confirmatory Factor Analysis of Behavioral Intention

variables	MLE estimation		Composite reliability	Average variance extracted
	factor loadings	Measurement errors		
X13	0.93	0.13	0.9641	0.8996
X14	0.96	0.08		
X15	0.95	0.09		
The model is saturated, the fit is perfect.				

Table 1 to Table 4 are the evaluation model of the four core concepts, with GFI valued, NFI valued , and CFI valued higher than 0.90, all acceptable. Every factor loading is significant; composite reliability lies between 0.785 and 0.956, higher than 0.7; average variance extracted lies between 0.590 and 0.926, higher than 0.5. Consequently, evaluation of the four core concepts has convergent validity.

4.3 Path Analysis

The first stage of analysis on reliability and validity has been concluded above that this study deletes those items of which reliability index of each observable variable in five latent variables is lower so that all CFA reaches the acceptable value. Those deleted items are X04.

This section begins with the second stage, analyzing Structural Equation Model (SEM) and verifying every hypothesis in this study. This study is conducted through structural equation model to figure out overall relationship among models further to examine relationship among concepts proposed by the model. This structural equation model analysis is combined with factor analysis and path analysis introduced in traditional statistics and further includes simultaneous equations of econometrics to work out relationship among a series of dependent variables at the same time, suitable for cause and effect of the whole model in this study.

According to results of confirmatory factor analysis, path structural analysis has been carried out based on the model and the outcome is as shown in table 5. Every index reaches ideal value, revealing good fitness in the structural model. It means there is good fitness between samples in this study and UTAUT model. This is an ideal model that research is capable of explaining cause and effect of latent variables such as performance expectancy, effort expectancy, social influence and behavioral intention.

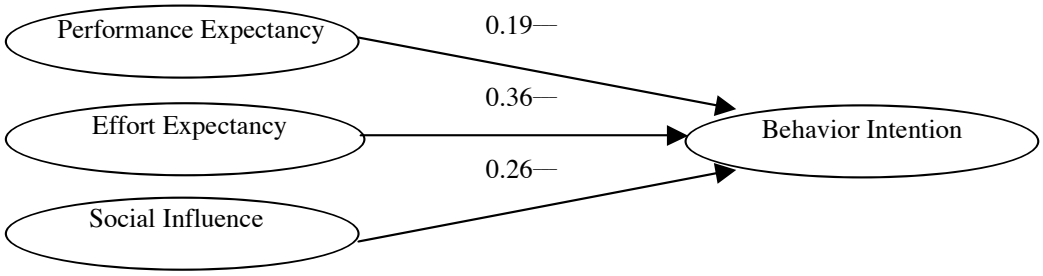
Table5 Fitness Index in the structural model.

	x^2	df	x^2 / df	GFI	AGFI	RMR	SRMR	NFI	NNFI	CFI	RMSEA
Measurement model	233.49	59	3.96	0.94	0.90	0.034	0.044	0.97	0.97	0.97	0.074

GFI=goodness of fit index_FAGFI=GFI adjusted for degrees of freedom _F RMR=root mean square residual°FNFI=normed-fit index_FNNFI=non-normed-fit index°FCFI=Bentler's fit index°FRMSEA= root mean square error of approximation_

This study utilizes Structural Equation Model to test and verify the causal relation among dimensions, and to estimate the influence value of each dimension by standardized coefficients. The result of structural equation analysis is shown as Fig. 1. From the result of analysis, it is discovered that within all the influence relations among variables, all the path relations reach significance level and are proved to exist significantly. Within these three variables influencing behavioral intention, Effort Expectancy has bigger influence and the path coefficient is 0.36; the second one is Social Influence and the path coefficient is 0.26; Performance Expectancy comes the third and the path coefficient is 0.19.

Fig.2 The Path Coefficients of Structural Equation Model



(All the standardized path coefficients of variables reach significant level as p<0.001. The parenthesized path coefficients are those do not reach significant level.)

Concerning R2 analysis, R-square value of behavior intention is 0.57, revealing that the explanatory power of concepts involved in this study's model to variation of the will to use is 57%, seen as table 6.

Table6 The Path Coefficients of Structural Equation Model

Latent variables	**Hypotheses**	Standardized Coefficients	t-value	R-square
Behavior Intention	0.57			
Performance Expectancy	H1	0.19	3.95***	
Effort Expectancy	H2	0.36	7.97***	
Social Influence	H3	0.26	5.83***	

*** t value higher than 3.29°Ap<0.001°C

Performance expectancy, effort expectancy and social influence have significant positive influence on behavior intention. The path coefficient of performance expectancy versus behavior intention is0.19*** (p=0.000), that of effort expectancy versus behavior intention is 0.34*** (p=0.000) and that of social influence versus behavior intention is 0.27*** (p=0.000), both positively influential. Hypotheses H1, H2 and H3 cannot be denied.

5. Discussion and Conclusion

After analyzing the aforementioned data, because Performance Expectancy, Effort Expectancy and Social Influence all have significantly positive influences on Behavior Intention, the hypotheses H1, H2 and H3 are all accepted. From the analysis it can be realized that Performance Expectancy, Effort Expectancy and Social Influence can all significantly influence Behavior Intention of the staff in travel agents to utilize smart phones. It reveals that three elements, including the staff's belief that utilizing G1 or other smart phones will improve work performances, the manipulability of smart phones, and the awareness degree that important others may recognize the usage of smart phone, will all positively enhance the travel agent staff's subjective willingness to utilize relevant smart phones, or the inclination to further make recommendations to others.

Moreover, the manipulation of smart phones will be the key point to influence the willingness of use (behavior intention); the staff will feel more willing to use those smart phones which are more easily manipulated. Social Influence is the second while the travel agent staffs think that if important others suggest or recommend them to utilize G1 or other relevant smart phones, they will also accept and their willingness of use will be enhanced. Therefore, if the company manager and colleagues acquire mutual interactions on business or education and training, they can consider using G1 or other relevant smart phones.

In this study, because the research objectives tend to be younger and mostly work in sales department, they all think products with high manipulation will improve their willingness of use although G1 smart phone has not yet sold in Taiwan. Based on this, it is suggested that manufacturers should tend to adopt user-friendly designs when designing the functions of mobile devices. In addition, easier digital platforms for learning should be designed for the manager and colleagues to create a better circumstance of mobile learning when they need to proceed with education and

training or periodically receive relevant knowledge and information through the mobile devices.

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