

## Feasibility Study and Implementation Technology Acceptance Model of Davis Staff Shahid Beheshti University of Medical Sciences

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**Abstract:** Today, technology and that developments has become in the strategic environment has become one of the most important elements. These evolutions of this technology has significant effects on the economic system, social and political. The aim of the present study is feasibility study and implementation technology acceptance model of Davis's Staff Shahid Beheshti University of Medical Sciences. This is descriptive study correlation. The sample was 200 people on Staff Shahid Beheshti University of Medical Sciences in Tehran. Results of the study showed that "attitude to the use of information technology" with "Easy to use information technology adoption" has a direct and positive and high correlation. The most important factor of IT acceptance model is easy to activity information technology adoption this is consistent with present study. The results of this study, seem to education authorities should encourage the use of information technology in society by encouraging more the target groups and to create a platform for education in science have.

**Key words:** Information technology, acceptance model davis, target, positive, political

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### INTRODUCTION

Information is the most valuable asset and the main factor in development of a society. Information Technology (IT) is more complicated and wider than computer science as it plays a role in connecting different activities within and among organizations at regional and international levels. In general, IT refers to all the technologies that are used in five area of collecting, storing, processing, transferring and representing information. It is comprised of four key elements (human, mechanism, tool and structure). Information flows through the value chain formed by these elements and brings in further growth and development to the organization. Purpose of IT management is to comprehend and control the effects of using IT from all aspects (Ajzen, 2001; Thong *et al.*, 2002). In this regard, information department employees carry out the main part of activists in IT fields as the most important element in the structure of global society. Recent decades have witnessed rapid growth of IT and information retrieval systems along with growth of electronic and technology-based services in academic environments (Spacey *et al.*, 2004). Given the fact that purpose of using these technologies is to improve performance and speed of services, it is necessary to measure acceptance of these technologies by the users and make better decision in the area of dedicating resources. Structural reforms toward promoting

IT in Iran have been slow and IT sector still is limited by traditional structures. Ajzen (1991) argued that meeting current users' needs entails realizing their activities and position in the system. On the other hand, realizing these activities and use of IT is a complicated task.

Hypotheses proposed in this study, not only might be helpful to predict acceptance of IT and behavior of the users in academic environments but it also prepares the ground for interdisciplinary studies. The hypotheses are combinations of Computer Science, Cognitive Science, Sociology and Communication Science. Doubtlessly, surveys of role of IT and pertinent technologies from the viewpoint of employees in higher education sector are essential. These employees play key role in realization of educational and knowledge development goals and formation of attitudes and skills of the new generation. Programmed behavior theory is a social-cognitive theory that introduces a useful framework for predicting and understanding social behavior. The theory is widely used in IT fields and emphasizes on the effect of motivation on behavior (Ajzen and Fishbein, 1970).

Programmed behavior theory highlights the hypothesis that people set their behaviors and actions based on rational rules and take into account availability of information before showing a behavior in this area. Therefore, an individual shows the behaviors that they have thought about them in advance (Sivo and Brophy, 2003). Thang surveyed the effect of social

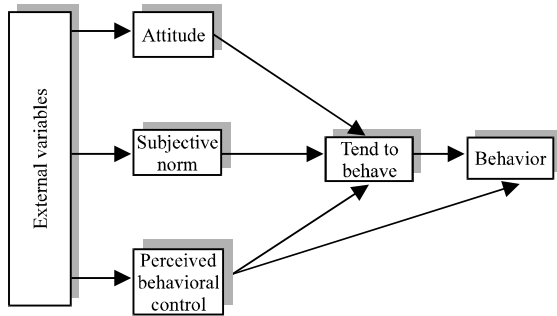


Fig. 1: Programmed behavior theory

factors on human behaviors within this theory (Thong *et al.*, 2002; Davis, 1993). The theory encompasses concepts such as attitudes, mental norms, control, perceived behavior, desires and exhibiting the behavior (Davis *et al.*, 1989; Davis, 1989) (Fig. 1).

One of the factors with significant and direct effect on acceptability of IT is mental perception as to usefulness of the technology and attitude toward using it (Spacey *et al.*, 2004). Reaching the conclusion that something is useful has significant and direct effects on one’s behavioral intention and one’s perceived ease of use is directly related to attitudes toward network-based learning (Malhotra and Galletta, 1999) maintained that the main obstacles in the way of effective use of Information Technology and Communication (ITC) for improvement of services to stakeholders were social, infrastructural, digital gap, laws, information security and change management (Chanaron *et al.*, 2002; Malhotra and Galletta, 1999). The present study is aimed at determining acceptance of IT and opportunities to implement IT among the employees of Shahid Beheshti Medical Science University based on Davis’s Model (TAM).

**MATERIALS AND METHODS**

The study is a descriptive-correlative work to determine and measure possibility of implementing Davis’ Technology Acceptability Model (TAM). Study population was comprised of 200 employees of Shahid Beheshti Medical Science University in 2012. Participants were selected through purpose sampling and participation criteria were at least 1 year experience, using computer, software and automation system in whatever way and expression of consent to take part in the study. The participants were briefed about the purposes and process of the study and ensured that confidentiality of information will be observed.

To determine correlation of external variables with perceived ease of use, perception of usefulness, attitude

and tendency behavior of TAM was determined by a researcher-designed questionnaire. The questionnaire was comprised of seven parts including demographical information, perceived ease of use (the extent to which people think that using IT is easy), perceived usefulness (the extent to which people find IT useful to improve their performance), attitudes toward using, behavioral intention to use, actual system use. The statements were scored based on Likert’s five-point scale. Validity of the questionnaire was determined using face and content validity. The later refers to relevance of each statement with the purpose that the questionnaire is designed for (Yaghmaie, 2003) the questionnaire was provided to 10 faculty members of Islamic Azad University, 7 experts of IT and 3 computer engineers. Their assessments were evaluated and required modifications were performed. Face validity was determined based on the assessments made by the experts and 10 participants. As to reliability, internal reliability was measured, so that the questionnaire was handed over to 15 participants and Cronbach’s alpha was obtained for perceived ease of use, perceived usefulness, attitudes toward using, behavioral intention to use and actual system use equal with 0.8, 0.7, 0.85, 0.73, 0.75, 0.7, respectively which indicates acceptable internal correlation of the questionnaire. The collected data were analyzed using descriptive statistics, correlation, model analyses, mean, SD, Spearman’ correlation, path analysis and maximum probability estimate.

**RESULTS**

Average age of the participants was 38.5 (SD = 8) and majority of the participants were women (76%). Average work experience was 13 years (SD = 7) and majority of the participants (47%) were satisfied with physical facilities and work environment. Furthermore, majority of the participants (41%) were relatively satisfied with their manager’s work.

Majority of the participants (57%) perceived easiness of using IT, 65% agreed with usefulness of IT, 70% had positive attitudes toward IT and 65% agreed with output of IT. Regarding, use of IT as a leisure activity, 25% of the participants agreed with the idea and 18% disagreed (Table 1).

The highest correlation between different parts of IT acceptable pattern was observed between facilitation of work process by using IT and attitude toward using. On the other hand, the lowest correlation was obtained between leisure nature of IT and outputs of IT (Table 2).

According to TAM, 65% of the participants had accepted working with IT, 20% were in IT acceptance

Table 1: Distribution of the participants based on the aspects of TAM

Aspect of TAM	Disagree (%)	Agree (%)	Neutral (%)
Perceive ease of use	37	57	6
Perceive usefulness	22	65	3
Attitude toward using	10	70	20
Attitude toward output	23	65	12
Attitude toward expected joy	57	25	18
Actual use	37	53	10

Table 2: Spearman correlation coefficient of the aspects of TAM Model

Aspects of TAM	Ease of use	Usefulness	Attitude toward using	Output	Attitude toward expected joy	Actual use
Perceive ease of use	0	0/7	0/9	0/3	0/3	0/5
Perceive usefulness	0/7	0	0/8	0/4	0/4	0/7
Attitude toward using	0/9	0/8	0	0/6	0/5	0/8
Attitude toward output	0/3	0/4	0/6	0	0/1	0/5
Attitude toward expected joy	0/3	0/4	0/5	0/1	0	0/7
Actual use	0/5	0/7	0/8	0/5	0/7	0

level and 15% had not entered acceptance stage yet. Path analyses, regarding prediction efficiency of TAM showed that path coefficients represented and predicted direct effect of independent variables including perceived usefulness ( $r = 0.715$ ), perceived ease of use ( $r = 0.614$ ) and attitude toward using ( $r = 0.662$ ) on the dependent variable (behavioral intention to use).

**DISCUSSION**

The results based on TAM showed that majority of the participants (65%) had accepted using IT. In addition, Spearman’s correlation (0.66) between age and acceptance of IT indicated a direct and positive relationship. Ahmadi and Ghotbedin showed that the key factor in acceptance of technology is age of the user so that a community accepts technology easier when members of the community learn skills of using the technology at younger ages. Effect of perceived usefulness was a function of external variables such as age, gender and education level (Klopping and Mckinney, 2004). Given that the participants, on average were young they had no problem in accepting IT. It is notable that resistance to technology is stronger among people of older ages as they find new technologies hard to perceive and useless. Policy of the organization, environmental factors and the conditions also influence individuals’ response to technology (Amoako-Gyampah and Salam, 2004). In addition, personal specifications such as skills, opportunities, resources and facilities to promote the behavior and influence of reference groups that create the norms may increase predictability of the target variable (Chen *et al.*, 2008) this was discussed earlier in the study.

As the findings recommend, majority of the participants perceived the technology useful and easy. Yi and Hwang (2003) argued in this regard that perceived ease of using and perceive usefulness are not stable features. They argued that social factors influence these aspects. The participants in this study helped each other in developing perception of usefulness and ease of use thanks to cultural homogeneity. The critical role of

perceive behavioral control in predicting intention of using was undeniable. This indicates important role of reference groups (family, friends, colleagues and so on) on mental normal of the participants and development of mental norms in line with using IT. Thereby this variable is worthy of more attention to have better prediction of the dependent variable.

Moreover, the results indicated that highest correlation between the aspects of the TAM Model was between usefulness of using and attitudes toward using. In addition, we found that there was direct and positive relationship between attitude toward using IT and perceived ease of use. Chuttur wrote in his studies that Davis keeps emphasizing that the most important factor in TAM is perceived ease of use, which is consistent with our results. The results also showed that the lowest correlation was between leisure feature of IT and attitude toward outputs of IT.

As to the main objective of the study, the results showed that according to TAM Model, 65% of the participants had accepted using IT, 20% were at transferring stage and 15% had not reach acceptance level. Several studies have confirmed prediction capability of TAM with general approach to technology (Porter and Donthu, 2006). Therefore, given that our results confirmed predictability power of TAM model, validity of the findings is supported.

**CONCLUSION**

According to the results, it appears that by motivating the target groups, the authorities of the university can promote using IT. The ground can be prepared by holding group-training courses in academic environments.

The results prepare the ground for further studies on designing variety of interventions toward improvement of IT use among the study population. The findings also provide a IT and ITC promotion guideline for better policy making and preparing required facilities based on culture of the target group.

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