Technology Acceptance Model: A Survey of Literature

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ABSTRACT

The technology acceptance model has been a theory that is most widely used to explain an individual's acceptance of an information system. This study has reviewed numerous literatures available in this area. The different studies in this area were evaluated to understand the modifications that were done on this model. The paper then tries to provide an insight on future trends in the technology acceptance model.

Keywords: Technology acceptance model; perceived ease of use; attitude; Perceived Usefulness
Introduction:

In the area of research to investigate the individual acceptance behavior on Information technology and Information systems, many models were suggested by the researchers. These include the Theory of Reasoned action (TRA), Theory of planned behavior (TPB), Technology Acceptance Model (TAM, TAM2) and Unified Theory of Acceptance and Use of Technology (UTAUT).

According to theory of reasoned action the individual behavior is motivated by behavioral objectives and these are a function of an individual's attitude toward the behavior and subjective norms surrounding the performance of the behavior. Technology acceptance mode (TAM) has been based on theory of reasoned action (TRA) and has been used to explain individual's acceptance behavior.TAM was first proposed by Davis(1989) in his Doctoral thesis. Theory of Planned Behavior helps to recognize how the behavior of people can be changed. TPB suggests that human action is guided by three factors which are behavioral, normative and control beliefs.TPB includes some factors that are part of TAM. However, TPB is not specific Information systems usage (IS).

The perceived usefulness factor and perceived ease of use factors are major factors in computer use behaviors based on Technology acceptance model. TAM has been widely used to scrutinize individual technology acceptance behavior in various types of information systems.

Technology Acceptance Model (TAM)

Technology Acceptance Model has been developed by Davis(1989) is one of the most popular research models to predict use and acceptance of information systems and technology by individual users.TAM has been widely studied and verified by different studies that examine the individual technology acceptance behavior in different information systems constructs.

In TAM model, there are two factors perceived usefulness and perceived ease of use is relevant in computer use behaviors. Davis defines perceived usefulness as the prospective user's subjective probability that using a specific application system will enhance his or her job or life performance. Perceive ease of use (EOU) can be defined as the degree to which the prospective user expects the target system to be free of effort. According to TAM, ease of use and perceived usefulness are the

most important determinants of actual system use. These two factors are influenced by external variables. The main external factors that are usually manifested are social factors, cultural factors and political factors. Social factors include language, skills and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crisis. The attitude to use is concerned with the user's evaluation of the desirability of employing a particular information system application. Behavioral intention is the measure of the likelihood of a person employing the application.
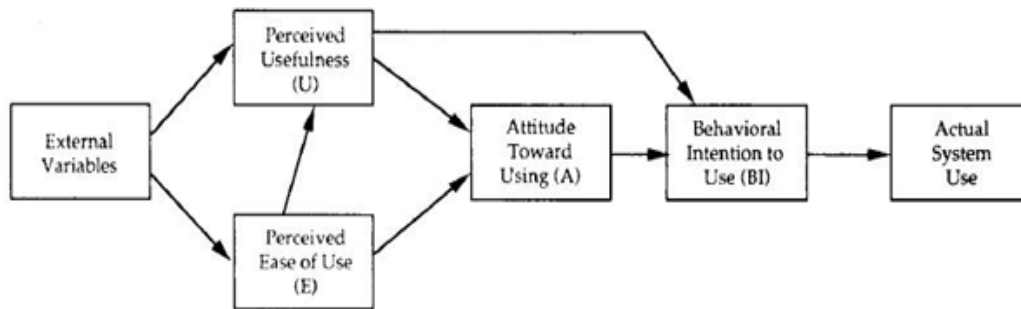
Fig: Technology acceptance Model(TAM) Davis(1989)

Related Literature in Technology acceptance model

Technology Acceptance Model is one of the most popular theories that is used widely to explain Information System usage. So many studies have been conducted which has led to the changes in the originally proposed model. A new model called combined TAM-TPB model which integrated the Technology acceptance model and theory of planned behavior was proposed by Taylor and Todd(1995). Venkatesh and Davis(2000) proposed a new version of TAM called TAM2 which added new variables to the existing model. Venkatesh et al.(2003) in a study published in MIS quarterly proposed the Unified Theory of Acceptance and Use of Technology(UTAUT) Model.

The various studies conducted by researchers have tried to modify the TAM by adding new variables to it. Agarwal and Prasad (1998a, 1998b) modified TAM by adding the construct of compatibility in the Technology Acceptance Model. Moon and Kim(2001) has added a new variable playfulness factors to study acceptance of the world wide web. Lim(2000) proposed to modify TAM by adding variables like experience, self efficacy, perceived risk and social influence. Another study done by Agarwal and Karahanna added cognitive absorption, playfulness and self-efficacy to the TAM model. Chau(1996) in a study reviewed TAM by included two types of perceived usefulness: near-term and long-term. Van der Heijden(2000) after analyzing the individual acceptance and usage of the website added two new constructs to TAM :perceived entertainment value and perceived presentation attractiveness.

Chau and Hu (2002) combined the factor of peer Influence with Technology Acceptance Model. According to study by Franco and Roldan (2005) the relationship between perceived usefulness and behavioral intention was strong among goal-directed users. Chau and Hu (2001) compared three models Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and a decomposed TPB model that is potentially adequate in the targeted healthcare professional setting in Hong Kong. The results indicated that TAM was superior to TPB in explaining the physicians' intention to use telemedicine technology. The study conducted by Sun and Zhang(2003) found voluntariness can be factor in determining the behavioral intention to use.

Hun-Pin Shih (2004) combined the TAM and the information behavioral model of Choo (1991 that takes notice of the relevance of the information.

Lee(2009) combined the Technology Acceptance Model with Theory of Planned Behavior, perceived risk and perceived benefit to understand the adoption of internet banking.

TAM has been used by researchers worldwide to understand the acceptance of different types of information systems. Shafeek(2011) in a study tried to evaluate the acceptance of eLearning systems by teachers by using TAM. Zhou et al. has developed a new model based on TAM called online shopping acceptance model (OSAM) to study online shopping behavior. Pavlou(2003) developed a model to predict the acceptance of e-commerce by adding new variables trust and perceived risk. According to the model developed by Pikkarainen et al.(2004) to understand the acceptance online banking in Finland, perceived usefulness and information in online banking play a very important role. Hsu and Chiu suggested a model that specifies that the acceptance pattern and role of internet self efficacy plays an important role in e-service adoption. Ervasti and Helaakoski (2010) have developed a model based on TAM and TPB to understand mobile service adoption which states that perceived useful is the strongest factor in adoption. Muller-Seitz et al. (2009) used the Technology Acceptance Model with security concern to understand acceptance of Radio Frequency Identification (RFID).

Conclusion

TAM has been widely used model to help understand and explain user behavior in an information system,. There has been number of researches which have been used to test the model and results have been reliable. The article has explained the technology acceptance model and the different crucial factors in it. This paper has tried to review the model and different related researches in the area. The study also tried to understand the different changes that have been done on the model by the different researchers. The study also reviewed the application areas where technology acceptance model can be implemented.

The future research will try to provide an extension of the technology acceptance model and use it understand the user acceptance of technology in e-recruitment.

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