



AN EXAMINATION OF C-TAM-TPB, SCT, DTPB, UTAUT, RUTAUT, ADOPTION MODELS IN INFORMATION TECHNOLOGY

Dr. Goldi Puri

Associate Professor, Institute of Hotel and Tourism Management, M.D. University, Rohtak, Haryana, India.

Abstract

Information technology adoption study models come in a variety, according to Alawahdi and Morris (2008) and Min et al. (2008). The model of Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), the Model and Revised Unified Theory of Acceptance and Use of Technology Model (Min et al., 2008), the Theory of Planned Behavior (TPB) (Armitage and Conner, 2001), Innovation Diffusion Theory (IDT), and Motivational Model (MM) are a few of them. The adoption models for information technology (C-TAM-TPB, SCT, DTPB, UTAUT, RUTAUT) are evaluated in this study.

Introduction and Review of Literature

Combined TAM and TPB (C-TAM-TPB) Model

The two combined TAM and TPB model combines the TAM's perceived usefulness variable with the TPB model (Taylor and Todd, 1995; Foroughi et al., 2019; Karjaluoto et al., 2010). Its main constructs include subjective norms, attitudes toward behavior, alleged control over behavior, and perceived utility (Venkatesh et al., 2003). With the rapid growth of e-commerce and the internet in the early 2000s—another crucial element of behavioral intention—TAM research has shifted its focus. The focus of research has shifted away from legacy systems and application software and toward internet-based tools like online banking, online auctions, the World Wide Web, online shopping, online games, etc.

This demonstrates that the primary goals of using the internet are contentment, satisfaction, and relaxation, with perceived liveliness, perceived delight, and stream familiarity taken into account as input constructs of behavioral intention and added to perceived usefulness and ease of use, as demonstrated by earlier research studies. According to (Teo et al., 1999; Heijden, 2004), behavioral intention in the WWW and e-learning (Lee et al., 2005; Karjaluoto et al., 2010; Kwateng et al., 2019) is influenced by the perceived delight and the genuine formula.

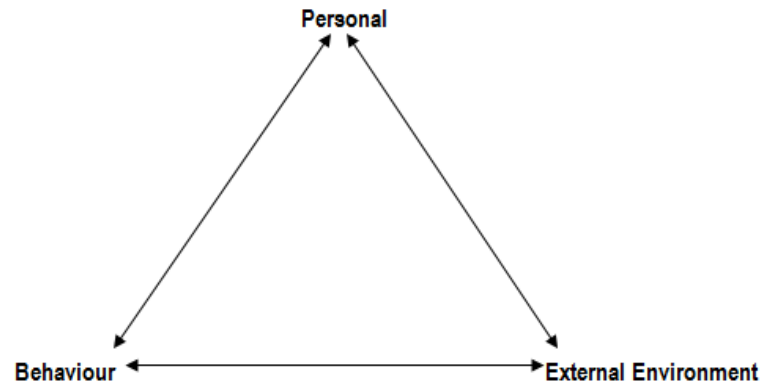
Perceived Web utility and stream familiarity in online games have an impact on behavioral intent as well (Moon and Kim, 2001; Hsu and Lu, 2004). Due to the fact that electronic commerce business is merely conducted without personally assembling in the route of the internet, trust is measured as an input construct of behavior from the perspective of electronic commerce (Luhmann, 1979; Gefen et al., 2003a; Grazioli and Jarvenpaa, 2000; Kwateng et al., 2019).

Social Cognitive Theory (SCT)

According to this model, which was developed by Wood and Bandura in 1989, cognitive behavior is explained by mutual deterministic behavior as well as by additional factors including environmental processes that are designed to exert power and further action as correlated determinants and numerous user-influencing factors. In Figure 1, the social cognitive theory is highlighted.



Figure 1: Association between Personal Factors, External Environment and Behaviour



Source: (Bandura, 1989)

Decomposed Theory of Planned Behavior (DTPB)

Taylor and Todd created the Innovation Diffusion Theory and Theory of Planned Behavior models in 1995. This model is the perspective of information technology and conveys the collective thinking originating from two dissimilar ranks of research (Taylor and Todd, 1995; Karjaluoto et al., 2010; Kwateng et al., 2019).

According to Taylor and Todd in 1995, the Theory of (DTPB) has many advantages, including providing easy-to-grasp associations between attitudes, opinions, and intentions as well as facilitating the model's applicability in a variety of critical situations. It also assists in defining a number of factors that, in turn, pave the way for the adoption and use of the most recent technology, making it appear more relevant in management.

According to Rogers (1983), who developed this theory, viewpoints connected to attitude can be broken down into three major components based on how innovations are regarded in the literature. Which are:

1. Easiness in use;
2. Perceived usefulness; and
3. Compatibility.

Subjective norms are beliefs that are connected to the opinions of the reference group or social norms, such as friends in the workplace, bosses, peers, subordinates, etc. These beliefs are tied to differences in these groups' opinions in an organizational setting. The two types in which control beliefs can be identified are facilitative conditions and self-efficacy. Self-efficacy refers to a person's aptitude for using novel technologies as well as the enabling circumstances that are regarded by them as relevant to the money, time, and technology that are needed for adoption.

The assumption made in this situation is that if a person has clarity regarding the facilitating conditions and self-efficacy, then his or her intentions will be more inclined to adopt new technology, and if there is a deficiency in any of the conditions mentioned above, then the likelihood of adoption will decrease.



The (UTAUT) Model - Unified Theory of Acceptance and Use of Technology

If all of the aforementioned models were combined into a single object, it would form the UTAUT model. As a result, it combines almost all information technology adoption models. The most widely employed model is this one. It has been discovered that this model produces better results than the models previously mentioned. One of the advantages of this approach is that it takes into account demographic aspects such a person's age, gender, experience, and willingness to use technology when predicting adoption rates (Karjaluoto et al., 2010). The four main interpreters of this theory were social influence, performance expectancy, facilitating conditions, and effort expectancy (Venkatesh et al.

These constructs are given below in detail:

Social Influence – It’s the extent to which a user got persuaded by the other's belief of using new technology (Agarwal et al., 2009; Venkatesh et al., 2003).

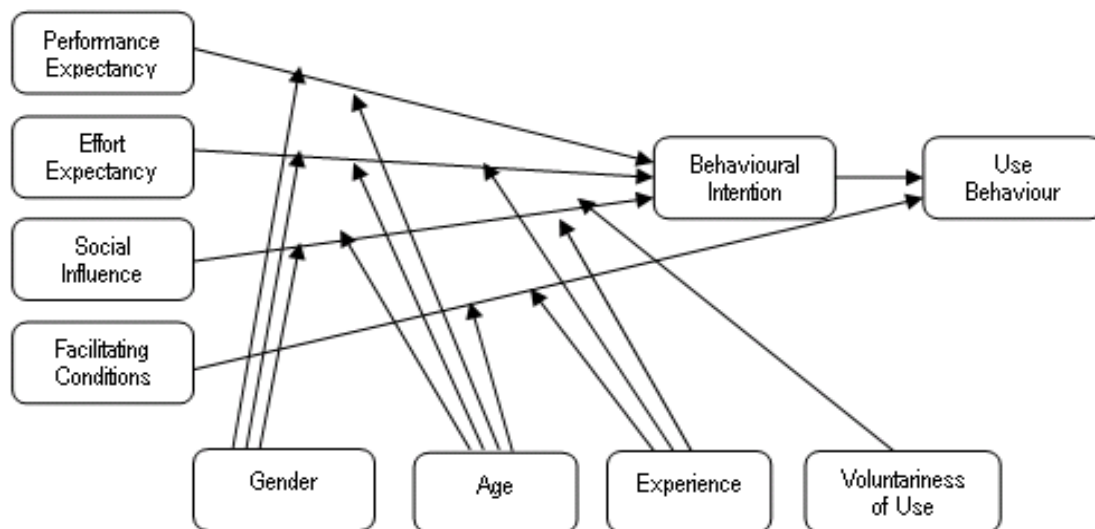
Performance Expectancy – It’s that amount up to which users think that a superior or advanced quality of performance is provided while using the technology (Karjaluoto et. al., 2010; Kwateng et. al., 2019; Venkatesh et. al., 2003;).

Facilitating Conditions – This is the level of support from organization and the needed infrastructure facilities that are available to a person for using the technology (Agarwal et al., 2009).

Effort Expectancy – It means the efforts required in using a particular technology and the level of easiness associated with it (Agarwal et. al., 2009).

The model is shown in Figure 2.

Figure 2: The (UTAUT) Model



Source: (Venkatesh et al., 2003)

According to calculations and dependent variance estimates, 70% of participants in previous research studies and those who tested this model intended to employ technology (Marchewka and Kostiwa,



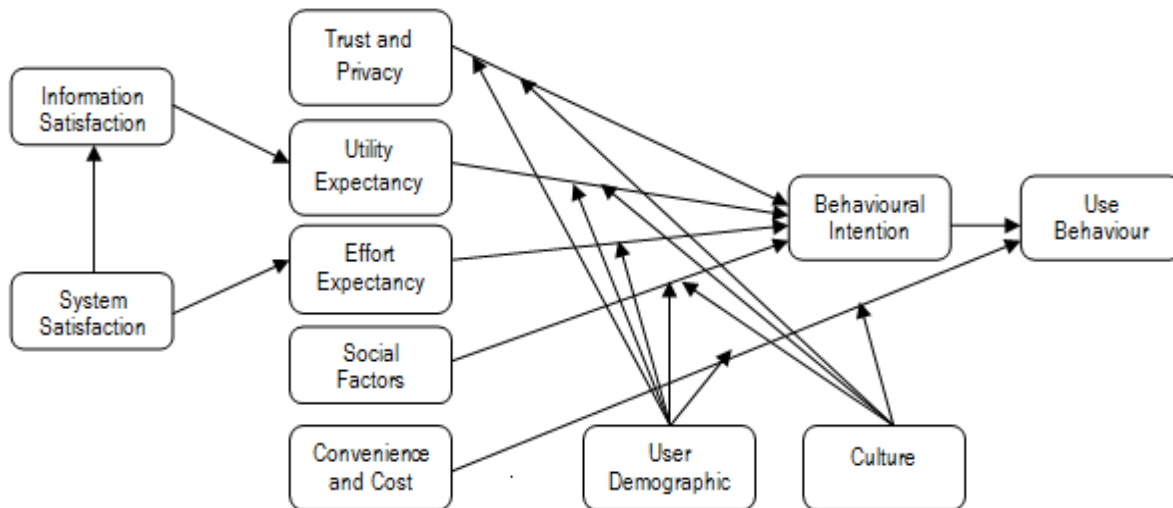
2007). More people are becoming accustomed to the condition if it is discovered to be enabling and having an impact on the adoption of mobile phones. Similar to this, the knowledge of how to use technology and the amount of time spent using it are also regarded as facilitating conditions because it is believed that these two factors can influence people's adoption of new technologies and the services associated with them.

Revised Unified Theory of Acceptance and Use of Technology Model

The Model, which is also regarded as an addition to the UTAUT model, was presented by (Min et al., 2008). The already-existing elements, such as Utility Expectancy, are now referred to as "perceived Usefulness" and Effort Expectancy is now referred to as "perceived Ease of Use" in prior TAM model. In updated UTAUT model, "Information satisfaction" & "System satisfaction" are taken into consideration as components of its main constructions.

As a result of these constructs, the role of culture, security, and trust, as well as the demographics of the user in the adoption of technology, has changed the role of the revised UTAUT model and made it significantly more suitable for user approval when performing applications in mobile commerce. In Figure 3, the updated UTAUT model is shown. It took into account the aspects that were discovered to have an impact on customers while using mobile banking and integrated culture is also as a component.

Figure 3 : UTAUT Model Revised



Source: (Min et. al., 2008)

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