Chapter 31
Dynamic Analysis of UTAUT:
The Case of Microsoft Project Management Software

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ABSTRACT

The technology adoption domain is rich with studies that utilized a cross-sectional snapshot of subjects' perceptions regarding the adoption of new technology. This research tried to implement a longitudinal study that took three measures within 4 months to estimate the influence of time and experience on students' perceptions. The study adopted a modified version of the Unified Theory of Acceptance and use of Technology (UTAUT) with effort expectancy, performance expectancy, facilitating conditions, and locus of control predicting the intention to use Microsoft Project. Results supported the UTAUT and its prediction. Also, this study fitted two types of dynamic research typologies (learning curve and equilibrium circles) to the UTAUT relationships and across time.

1. INTRODUCTION

As ubiquitous as we see Information Technologies in every aspect of our lives today, and as organizations' expenditure on technology is on the rise, we notice that several of these investments are wasted on failed systems. The field of technology acceptance modeling states that user acceptance is a root cause of this failure and that interaction between humans and computers can be affected by a number of human factors (Whitely, 1997). Technology acceptance studies attempts to predict the factors that lead users to adopt or reject a technology. Many theoretical models have been proposed to establish and explain

users' acceptance behavior to new Information technologies, but these models have several weaknesses that impact their applicability (Fletcher et al., 2014).

Information and communication technology (ICT) use has proliferated throughout most sectors of the economies both in the developed countries and developing world (Alwahaishi & Snasel, 2013). And it seems that both confront a number of barriers when introducing these technologies. In developed countries, lack of top management support, poor quality IS design and inadequately motivated users being on the top list of these barriers (Kwon & Zmud, 1987). On the other hand, lack of national infrastructure, and capital resources or government policies are the major barriers to technology transfer and adoption in developing world (Odedra et al., 1993).

The increasing use of technology in higher education leads to the increasing importance of educational technology acceptance. This is relevant to the Middle Eastern countries where the use of educational applications is accompanied by numerous challenges. The incorporation of technology into higher education without thought for its integration with learning objectives can give the illusion of progressiveness rather than the best possible facilitation of teaching and learning (Waldron, 2009). Because new Technologies concerning computers and information systems are somewhat complex to use, policy makers are confronted with different levels of uncertainty when trying to successfully deploy them in their organizations (Bagozzi et al. 1992). Several researchers found that the eventual use of all stakeholders determines the success of a system (Teng, 2014). So, if the system is not used in the expected way by potential users, it will be useless.

This study will try to apply a well-known theory in the technology acceptance domain to try to understand students' acceptance of Microsoft Project (MP) application. The study will also explore the dynamic behavior of relationships within the UTAUT. This study is one of the few that addresses a longitudinal perspective of such domain. The following section will review the literature related to the UTAUT and its related applications, followed by a short section on MP-related studies. Data analysis and discussion will be described in section4, followed by conclusions and future work.

2. LITERATURE REVIEW

The unified theory of acceptance and use of technology (Venkatesh et al., 2003) is one of the famous theories of technology adoption. It included four predictors and four moderators. The study published in 2003 and tried to sum most known theories of technology adoption at that time into these four predictors. The following section will review the history of technology adoption models followed by a section on the UTAUT.

2.1. Evolution of Technology Acceptance Models

Because system use has been identified as an indicator of system's success, and low use of a system is considered a major factor for organizations IT investments' loss, it is argued that systems' usage will not occur unless the users' perspectives have been taken into account. Several studies have reviewed the history and development of a number of technology acceptance models. For example, and since the 1960's, Innovation Diffusion Theory (IDT) has been applied to understand how users adopt technological advances in the fields of agriculture and organizational innovation (Rogers, 1995, Tornatzky & Klein,

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