Relationship between Individual Beliefs, Arousal and Usage of Online Knowledge Sharing Technology among Academicians in Malaysian Research Universities

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Abstract: ***The aim of this study is to investigate the relationship of individual beliefs, arousal, and usage of online knowledge sharing technology. These factors were examined as determinants that influence the academic staffs' adoption and usage of online knowledge sharing technology in the context of research universities in Malaysia. To do so, the study integrated technology acceptance model with hedonic consumption model as the theoretical model for understanding the acceptance and usage of online knowledge sharing technology. The study aimed at contributing to the insufficient research on arousal as an element of emotion that may influence the usage of online knowledge sharing technology to support knowledge sharing. The study was empirically evaluated using quantitative data from a sample of 321 academics from five research universities. Relevant information was collected through online survey submitted to all the chosen academics from the five research universities. The result indicates that individual beliefs (perceived usefulness and perceive ease of use) and arousal are predictors of usage of online knowledge sharing technology. The finding of the study contributes both to the academic research, by making available to scholars on the empirical evidence on the element of arousal as an additional determinant in the TAM model that influences the usage of online knowledge sharing technology.***

Keyword: ***Individual Beliefs, Perceived Usefulness, Perceived Ease of Use, Arousal, online Technology.***

I. INTRODUCTION

Research Universities (RUs) are regarded as the pinnacle of the national higher education system and they are the most visible academic universities (Hazelkorn 2015). Altback (2009) clearly showed that RUs have a set of roles in the academic system, which includes a clear mission that focuses on not only research and publications by their academic staff but also in getting students to engage in research. Therefore, RUs are categorized as the hub of global knowledge, and the excellent knowledge management and sharing practices among academic staff can build better linkages between them and the society. Many studies have been conducted to examine determinants that influences knowledge sharing intention among academics in institutions of higher learning, however,less has focus predominantly on RUs. Given the importance of knowledge and knowledge sharing, it is important to understand what initiates academics in RUs to share knowledge among others in the societyMany knowledge-sharing initiates rely on information technology as an important enabler (Zailani at. al, 2006; Wang &Noe, 2010, Hislop, 2003; Ipe,2003; Osterloh& Frey, 2000; Liebowitz,2007). The progress of educational technology infrastructure and facilities has provided an opportunity for academics around the world to collect and share valuable knowledge, information, and ideas across functions, divisions, and geographical boundaries. This efforts consequently transforms the country education sector into a knowledge based- society. Thus, to enhance the application and accessibility of knowledge that was shared, RUs use various repositories as enables for online knowledge sharing. These online repository technologies help academics to create systematically, store, apply and manage knowledge within the institutions and the society (Ramachandran et al., 2013). With an aid of online knowledge sharing technology, academics can engage with a range of external partners through research and publication activities. Hence, a successful adoption and usage of online knowledge technology will facilitate the intensity and knowledge exchange undertaken by universities. Five universities in Malaysia have obtained RU status. These universities are Universiti Malaya (UM), UniversitiKebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM, UniversitiSains Malaysia (USM) and Universiti Technology Malaysia (UTM). RUs hold a prominent task to enhance further and strengthen research and development activities. Thus, academicians in RUs are required to continually contribute new ideas, knowledge, and concepts or theories leading to new discoveries and innovations in a range of disciplines, which subsequently produce a knowledge-based society. Sue-Chen (2014) said that most of the RUs in Malaysia are still lacking in terms of knowledge sharing behaviour and needed major change. With a radical change, it is believed that RUs will lead among others in research and publications (Sirajuddin et. al., 2006). The present study makes the following contributions, First, by providing empirical support for the link among functional aspect of technology (perceived usefulness and perceived ease of use),

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and the emotional aspect (arousal) and usage of online knowledge sharing technology. Thus, the present work extended the basic technology acceptance model (TAM) proposed by Davis, (1986) with arousal as a new determinant in understanding technology usage.

II. LITERATURE REVIEW

A well-researched model and theory that has been proven successful in predicting users acceptance or rejection against the use of a technology is the Technology Acceptance Model (TAM) proposed by Davis (1989) (Marangunic&Granic, 2015; Chau& Hu, 2001; Gefen, 2000). TAM is accepted widely and have been appliedextensively in predicting employees' adoption, acceptance and actual usage of a technology (Marangunic&Granic, 2015; Agarwal&Karahanna, 2000; Chen & Tseng, 2012; Schepers&Wetzels, 2006; Sumak, Hericko& Pusnik, 2011; Hassanzadeh, Kanaani&Elahi ,2012). Derived from the theory of reasoned action (assumes that a person has complete control over behavior) and theory of planned behavior, TAM takes the leading role to explain the antecedents that influence technology acceptance or rejection. At large, TAM researchers have empirically proven it as a successful model in predicting about 40% of a system use (Lee &Lehto, 2013; King & He, 2006; Hu, Chau, &Seng, 2002). As a matter of fact, the model has been used extensively over the decades as it was powerful in predicting a particular behaviour towards technology adoption and usage (Cheung & Vogel, 2013; Lee &Lehto, 2013; Chow, Herold, Choo& Chan, 2012; Davis, 1989; Agarwal& Prasad, 1999; Mathieson, 1991). In fact, all the existing TAM constructs are well researched and are the most influential ones in explaining technology adoption and usage behaviour (Mathieson, 1991). TAM presumes five constructs: perceived usefulness (PUE), perceived ease of use (PEOU), attitude towards using, behavioral intention and actual use. PEU and PEOU are the two main determinants that influence an individual's attitude towards using a particular technology. This will then influence the behavioral intention (BI) and that ultimately determines the actual usage behavior. However, the variable attitude was later omitted due to its weak predictive value on technology usage. In fact, the omission of attitude towards using a particular technology enhances the understanding between one's individual beliefs and the dependent variable (Davis, 1989). Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) are the two most important construct in the TAM that is more likely increases users' willingness to utilize a technology (Rosen, Whaling, Rab, Carrier & Cheever, 2013). Perceived usefulness (PUE) and perceived ease of use (PEOU) are also known as behavioral beliefs that predict technology adoption or actual usage (Adams et al., 1992; Davis, 1993). PUE is defined as "the extent to which a person believes that using a system would enhance his or work productivity. PEOU, on the other hand, is defined as "the extent to which a person believes that using a system would be free of mental effort". Jogiyanto (2007) described that perceived usefulness is the value that the user has on the system. Here, when the user perceived a high value of the system, the decision to use the technology is higher; whereas, perceived ease of use can be interpreted as, "no compulsion for the user to use the technology". Here, it describes how the user becomesattracted to the system just because it's easy to use it.

However, understanding on the online usage of technology cannot be accomplished just by examining PEOU and PUE (Edwards et al, 2003; Handzic, Lazaro and Toorn,, 2004). Holsapple and Wu (2007) mentioned that there is a need to examine the element of emotion in relation to behavior. Studies have shown that the role of emotion has a constant effect on decision making and behavior (Ding, Chai &Hin, 2015; Han, Lerner, Keltner, 2007). The influence of emotion has been examined across different research settings, and researchers have agreed that emotion is an important construct to understand information technology usage (Ding & Chai, 2015). The two types of emotion construct examined in the field of IS are anxiety (Brown et al., 2004) and perceived enjoyment (Koufaris, 2002). However, Ding and Chai (2015) suggested that arousal is a prime component of emotion, thus influencing behavior. Past researchers have examined the TAM model by adding constructs specifically from the theory of hedonic consumption (Turel, Serenko&Bontis, 2010; Lee, Cheung & Chen, 2005; McKee, Simmers & Licata, 2006; Serenko, Bontis&Detlor, 2007; Yu, Ha, Choi & Rho, 2005). For instance, fun and enjoyment were incorporated into the TAM model and was found to have an effect on the direct use of a technology (Bruner & Kumar.2005; Childers et al, 2001; Dabholhar&Bagozzi, 2002). However, the focus of the research was mainly on pleasure-oriented element and technology consumption. However, there are many other emotional variables that need to be considered when adopting and using a technology, and one of those are the element of arousal (Thuring&Mahlke, 2007; Monsuwe at al.; 2004). Therefore, the underlying reason for this research is to examine the influence of arousal on the usage of online knowledge sharing technology. Here, the research responds by adapting the perspective of hedonic theory as the potential theory to improve the viability and predictive nature of TAM. This is because the hedonic theory is very much relevant in explaining behaviour from the perspective of human factors; furthermore, the users of IT are not only technology users but also consumers of that technology (Holsapple& Wu, 2007). Although the theory rooted from marketing literature to study consumer behaviour, it is also suitable for studying the behaviours of IT users, in the context of this research, the online technology usage. Past researchers have modified the original TAM and applied it in various field of study. For instance, Park, Lee and Cheong (2008); Selim, (2003); Lee, Cheung and Chen (2005); and Grandon, Alshare, and Kwan (2005) used TAM as the ground to focus their study on university students' acceptance and usage behaviour towards e-learning. TAM was also applied to predict consumer's attitude towards Internet shopping (Menon& Kahn, 2002; Childers at al. 2001; Monsuwe, Delleart&Ruyter, 2004; Mathwick at al. 2001, Lee & Turban, 2001);

Internet support medical and telemedicine related technologies (Chau& Hu, 2002; Chau& Hu, 2001; Chismar& Patton, 2003; Mun at al.; 2006; Yarbrough & Smith, 2007), usage of digital library systems (Chen, Chang, Kao, 2016; Khan, Qutab, Broady-Preston, Merry, 2016; Alfaresi& Hone, 2015; Hong, Thong, Wong and Tam, 2002); usage of Internet banking system (Lee, Lee & Kim, 2015; Lin, Wu & Tran, 2015), and usage of mobile and wireless Internet (Low, 2015; Chang, Sun, & Pan, 2015).

III. RESULT

In this paper we found the importance of arousal, this study incorporates arousal into the TAM model to understand the usage behaviour of an online knowledge sharing technology (i.e knowledge repository) among academic staff in RUs. Although there are other models that can be used to explain the adoption of a particular technology, for instance, Innovation Theories and Concern Base Adoption theory, these theories appear to be more complex.

IV. CONCLUSION

In this paper we conclude that "TAM is a much simpler, easier to use and yet a most powerful model in predicting individual's acceptance and usage behavior (Lee, Lee & Kim, 2015; Lin, Wu & Tran, 2015; Igbaria, Guimaraes, & Davis, 1995 ; Monsuwe, Delleart&Ruyter, 2004; Mathwick at al. 2001),). Moreover, the model has been applied in understanding technology adoption and acceptance research in various resaechfield (Cheung & Vogel, 2013; Lee Xiong& Hu, 2012; Venkatesh et al., 2003, Chen et al.; 2002; Moon & Kim, 2001).

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