EXTEND THE UTAUT TO MEASURE THE ADOPTION OF WEB-BASED KNOWLEDGE SHARING SYSTEMS IN SAUDI UNIVERSITIES

ABSTRACT

Knowledge management has emerged as an important practice for achieving competitive advantage among global corporations, including higher education institutions. Knowledge sharing is a significant source of success in knowledge management, however, in Saudi Arabian universities, knowledge management is often lacking when it comes to web-based knowledge sharing amongst academics. To ensure that a knowledge sharing system can be well implemented and used when communicating internally in an academic context, there is a need to know why academics accept or reject the use of web-based knowledge sharing systems. Therefore, the aim of this paper is to investigate the important factors that would influence academics' behaviour towards accepting and adopting the use of web-based knowledge sharing systems in Saudi Arabian universities. A conceptual model is proposed based on the Unified Theory of Acceptance and Use of Technology (UTAUT) and Task-technology Fit (TTF) models, as well as other factors which are explored in knowledge sharing literature reviews to enrich the proposed model. Then, the model will be edited and refined using a mixed method approach. Future work will expand the model and evaluate it to ensure that it fits the academics' needs.

1. INTRODUCTION

In today's dynamic and competitive era, a knowledge management system is becoming an important asset for organisations. Therefore, in order to be successful and gain competitive advantage, organisations, including higher education institutions, depend heavily on knowledge and the implementation of a knowledge management system which has become a crucial success factor (Fullwood, Rowley and Delbridge, 2013). The main activities in knowledge management are acquiring, sharing, and storing knowledge. A review of the literature reveals that knowledge sharing is one of the essential roles of higher education institutions where knowledge is created through research, disseminated through publication, shared via teaching, or presenting at a seminar (Kim and Ju, 2008; Jolaee et al., 2014). However, knowledge sharing amongst academic staff is often inadequate in Saudi Arabian universities. Consequently, tacit knowledge, which is preserved in the mind of expert academics, would be more difficult to share and express in tangible form, as it involves personal intellectual skills and problem-solving capabilities, and is gained through teaching experience (Kim and Ju, 2008). Uncodified tacit knowledge can affect academics' performance and may result in lower levels of achievement.

The use of web technology plays an important role as a knowledge enabling tool which can support the knowledge sharing process, encourage academics' collaboration, and enhancing the internal knowledge management environment (Panahi, Watson and Partridge, 2013; Usman, Ishaq and Oyefolahan, 2014). Sharing knowledge via web technology can be defined as the process of transferring different types of knowledge to others using information and communication technology (ICT) tools such as emails, blogs, video conferencing, or internet applications (Merrill and Ravi, Vijayan; 2001). Using web-based knowledge sharing can help academics stay internally connected, and builds relationships by establishing a knowledge community (Panahi, Watson and Partridge, 2012).

This paper is structured as follows. Section 2 describes the research problem, while section 3 provides additional background on knowledge sharing and technology adoption, as well as the theoretical bases of the study. Following this, the conceptual model is constructed to understand web-based knowledge sharing adoption. Finally, the methods which will be used for validating the model are explained.

2. PROBLEM STATEMENT

This research considers the application of knowledge sharing in Saudi Arabian universities. Most Saudi universities are not geographically co-located as they have dispersed campuses in rural and urban areas. Therefore, experts need to travel between these campuses to share knowledge with others who have common interests. Additionally, many years of teaching experience could be lost due to the retirement of academics without their expertise being recorded in a proper knowledge sharing system. Consequently, face-to-face communication is no longer an effective way of sharing knowledge and it would be more valuable if the knowledge was documented and shared in a way that encouraged novice teachers to use it (Fullwood, Rowley and Delbridge, 2013). Thus, universities need to implement a knowledge sharing system that could facilitate the flow of knowledge amongst academics and could overcome the challenges mentioned above. In order to ensure that a knowledge sharing system can be well implemented and used in the academic context, there is also a need to investigate technology acceptance among academics (Al-Gahtania, Hubona and Wang, 2007). Therefore, a conceptual model aimed at addressing the factors that affect an academic's behaviour toward accepting the use of a web-based knowledge system is developed based on the literature review.

   This research seeks to add value to its research area, as there is a clear demand to improve knowledge sharing activities and practices in Saudi Arabian universities, by answering the following research question: what are the factors that influence the adoption of a web-based knowledge sharing system among academic staff in in Saudi Arabian universities?

3. BACKGROUND

3.1 Knowledge sharing

Jolaee et al. (2014) suggested that knowledge sharing is crucial activity in knowledge-based organizations, like universities, since the majority of the academics are knowledge workers who engage in teaching and research activities. Their view is supported by Seonghee and Boryung (2008) who stated that faculty members share the same common missions where academics work as the disseminators of knowledge through teaching and as the producers of knowledge through conducting research. Fullwood, Rowley and Delbridge (2013) found that knowledge sharing depends on individual behaviour toward accepting or rejecting the use of web technology for disseminating knowledge. Behavioural intention is an indicator of an individual's readiness to share knowledge and can be affected negatively or positively by various factors (Alammari and Chandran, 2017). In this research, behavioural intention refers to the academic's likelihood to share knowledge using web technology.

3.2 Theoretical background

The literature on IT adoption supports an large number of theoretical models (Goodhue and Thompson, 1995; Venkatesh and Brown, 2013) that have been applied to different contexts. However, a review of the literature reveals that there is no well-defined adoption theory in terms of web-based knowledge sharing adoption. Therefore, to investigate the factors that could affect academics in terms of the degree of their acceptance of the use of web technology for knowledge sharing, theories that place emphasis on the technology acceptance area should be taken into consideration.

3.2.1 The Unified Theory of Acceptance and Use of Technology (UTAUT)

   It was found that the Unified Theory of Acceptance and Use of Technology (UTAUT) has been widely used to determine behavioural intention and usage (Venkatesh et al., 2003). The aim of UTAUT is to explain a user's intention to adopt and use an information system. Since the UTAUT model has resulted from testing and combining different technology adoption models, it is considered as a bench-mark for constructing the web-based knowledge sharing adoption model.

3.2.2 Task-Technology Fit (TTF)

The Task-Technology Fit (TTF) model measures the capabilities of a technology to support the function of a task and meet the user's requirements with the available technology functionality. Individuals are more likely to adopt a new technology if the functions of that technology meet the users' requirements (Goodhue and Thompson, 1995).

As previous studies have determined a strong relationship between what the technology can do (task-technology fit) and what the benefits of using it are in terms of enhancing task performance (performance expectancy) (El Said, 2015), this research adopts both models to explore academics' attitudes towards accepting the use of technology for knowledge sharing.

The next section outlines the significant factors and combines them into a web-based knowledge sharing model.

4. CONCEPTUAL MODEL

Based on the literature review, the proposed model, which can be seen in figure 1, is constructed to explore academics' behaviours towards sharing knowledge via web technology. The presented model intends to blend factors from the Unified Theory of Acceptance and Use of Technology (UTAUT) model and the Task-Technology Fit (TTF) model, as well as combining external factors that have been explored from knowledge sharing literature reviews (Paroutis and Al Saleh, 2009; Usman and Oyefolahan, 2014).

Figure *1*. Web-based knowledge sharing adoption model.
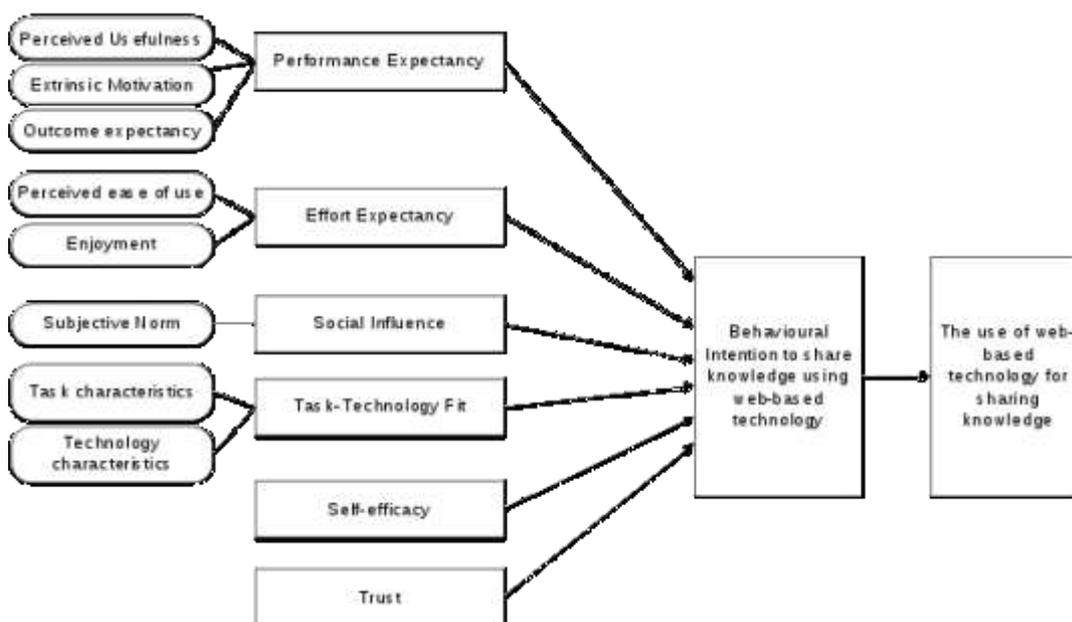
4.1 Performance expectancy

Performance expectancy is defined as the degree to which an individual believes that using the system will help them to improve job performance. Three measurements[MSJ1] were used to measure this construct. Outcome expectancy is strongly correlated with attitude toward using web technology for sharing knowledge. According to the Saudi study conducted by (Al-Gahtania, Hubona and Wang, 2007), outcome expectancy has

a positive influence on behavioural intention to use new technologies. When employees are unaware of the potential outcomes, it is more likely that they will perceive the cost of using new tools to be higher than the benefits which consequently could inhibit them from sharing knowledge using web tools.

Previous research shows that one of the most common barriers to sharing knowledge via web technology is the absence of extrinsic motivations. Paroutis and Al Saleh (2009) noted that some employees avoid using Web 2.0 technologies such as blogs and wikis as online knowledge sharing tools due to the absence of recognition programs.

Perceived usefulness has a significant impact on adopting the use of a web-based knowledge sharing system. If users perceive that using the online systems can improve their job performance, they become more motivated to use the systems for knowledge sharing purposes (Esmaeilzadeh et al., 2013).

4.2 Effort expectancy

Effort expectancy is defined as the degree of ease associated with use of the system. Two constructs from the existing model[MSJ2] capture the concept of effort expectancy. Perceived ease of use can be defined as the person's belief that using a web technology for knowledge sharing is free of effort (Hsu and Lin, 2008). Many faculty members, especially older professors, might face difficulties when using a knowledge sharing system such as an e-learning system. Therefore, designing an ease of use knowledge sharing system which meets users' requirements is likely to enhance the behaviour of knowledge sharing (Riege, 2005; Kim and Lee, 2006; Alhalhouli, Hassan and Der, 2014).

Enjoyment in helping others appears to be a key factor that could affect knowledge sharing using web technology. It is defined as the degree of personal perception that the system is fun and enjoyable (Hsu and Lin, 2008). It has been found that knowledge workers who feel pleasure when helping others are likely to be more motivated to participate in knowledge sharing activities (Alias, Abbas and Nordin, 2016).

4.3 Social influence

Social influence is defined as the degree to which an individual perceives that it is important that others believe they should use the new system. Social influence is a direct determinant of behavioural intention and is represented as subjective norm, and is considered as one of the factors that might affect the intention to accept using web tools for sharing knowledge amongst academics. This has been defined by Jolaee et al. (2014) as the degree of the person's perceptions regarding social pressure from their managers and colleagues which could impact the adoption of a new technology for knowledge sharing. Alammari and Chandran (2017) found that subjective norms, such as family and friends, have a positive effect on an individual's attitude due to the high individualism-collectivistic characteristic of Saudi Arabian culture.

4.4 Task-technology fit

Task-technology fit measures the capabilities of a technology to support the function of a task to meet user's requirements with the available technology's functionality. Individuals will adopt a new technology if the functions of that technology meet their requirements (Goodhue and Thompson, 1995). Task-technology fit suggests that the appropriate fit between knowledge sharing systems' features and task requirements is a key determinant of accepting the use of technology for sharing knowledge (El, 2015).

4.5 Self-efficacy

Self-efficacy could also affect knowledge sharing using web technology. Previous studies suggested that individuals with high self-efficacy are more likely to have positive attitudes toward using web tools for knowledge sharing (Fullwood, Rowley and Delbridge, 2013; Skaik and Othman, 2015). According to Mahmoud et al. (2014), some academics use technology to share their knowledge because of their belief in their own abilities and skills, and the belief that using technology can lead to work improvements.

4.6 Trust

Another factor that has been discussed in the context of knowledge sharing amongst academics is trust, which includes trusting the quality of knowledge being shared and trusting that others will also share their valuable knowledge. In an online setting, Hassandoust and Perumal (2011) noted that a high level of interpersonal trust among team members has a positive effect on the adoption of e-collaboration tools for knowledge sharing.

5. RESEARCH METHODS

To reach the objectives of the research, data will be collected following a Sequential Exploratory Design (SED). As a first step, semi-structured face-to-face interviews, which include open and closed questions, will be conducted with 18 experienced or novice Saudi Academics. The aim of the interviews is to explore other unidentified factors, derived from academics' perspectives, which influence academics towards sharing knowledge using web tools in Saudi Arabian higher education institutions. The interview will also investigate the academics' attitudes toward using available online systems for sharing their knowledge.

Then, a questionnaire will be designed, based on the factors identified from the previous interviews as well as the literature reviews. The goal of this questionnaire is to confirm all the components (from previous studies and academics' perspectives) of the designed model.

Finally, in order to investigate the relationships between the model's components and validate the research hypothesis, the questionnaire will be conducted with Saudi academics. This stage will apply a Structural Equation Modelling tool (SEM) as a confirmatory approach to analyse the paths among variables in one analysis and to eventually evaluate the resulting model.

6. DISCUSSION AND CONCLUSION

The research objective is to enhance web-based knowledge sharing practices among academics in Saudi universities. Therefore, this study will explore the factors that affect academics' behaviours toward using web technology to share knowledge in Saudi Arabian higher education institutions. The conceptual model has been constructed by combining factors investigated through reviewing the existing knowledge sharing literature, as well as factors from the UTAUT and TTF models. Then the factors have been categorised and grouped, based on the definition and the concept of each factor, into individual motivation, social influence, organizational culture, and technology acceptance.

From the author's perspective, to ensure a successful implementation of knowledge management systems in Saudi universities, all the model's factors that will be explored in the empirical study should be taken into consideration. A thorough understanding of the resulting model may provide useful insights into the management of Saudi Arabian higher education institutions by applying appropriate strategies and procedures to support knowledge sharing activities. Future work will expand the model and evaluate it to ensure that it fits the academics' needs.

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