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Application of Mobile Technology in Knowledge Sharing

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Abstract: Over the last decades, developments in information and communication technology have allowed large numbers of individuals to communicate digitally and have increasingly taken the place of face-to-face communication. Now a days, rapid growth in digital technologies such as mobile smart phones and laptop computers has made people's lives easier and has played an essential role in knowledge sharing. Knowledge is an important concept that adds value not only to individuals but also organizations. Mobile technology is significantly influencing the landscape of behaviour and personal lifestyle. Mobile-mediated knowledge sharing has become an important issue due to several trends that have changed how we take part in daily communication and leads to more online activity.

Key words: Knowledge sharing, virtual communication, mobile technology, mobile-mediated communication digital networking,

INTRODUCTION

In this era of global economy, knowledge has become the individual's most important asset. Each individual has his own set of knowledge. Knowledge is subjective and should not be limited to inside the individual's mind. Knowledge sharing from one individual to another and subsequently to an organization is carried out to solve problems, complete assignments and learn new things and is able to indirectly bring change to economic value.

According to Wang and Noe (2010) knowledge is information processed by individuals which includes ideas, facts, expertise and assessments related to the performance of individuals, teams and organizations. (Davenport and Prusak, 1998) sees it as:

> "A fluid mix of framed experience, values, contextual information and expert insight that provides framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices and norms"

Knowledge must be share to develop and improve one's level of knowledge. The process of establishing and implementing knowledge sharing practices can facilitate creating new knowledge (Yu *et al*., 2013). Van and Ridder (2004) are of the opinion that knowledge sharing is a process where individuals commonly exchange their implicit (tacit) and explicit knowledge to create a new body of knowledge. It is a social act that takes place through interaction and communication between individuals.

Technology plays a large part in changing knowledge sharing practices when it allows for interactions to take place within a dynamic environment which enhances knowledge sharing through communication and collaboration. One of the form of ICT, mobile technology is the technology used for cellular communication including laptops or netbooks (portable computer) smartphones, smart devices and PDAs are suitable and helpful for supporting and facilitating various communication and interaction processes among users. Current trends witnesses technologies changing from email and Short Messaging System (SMS) to social network and mobile apps.

Mobile technologies powered by the internet and the presence of apps have sparked the need for strategies, applications and resources necessary to support anywhere-any time connections to formal and situational learning as well as personal interest explorations (Wagner, 2005). The process of knowledge sharing takes place through mobile technology-mediated channels and could be in the form of social media such as Facebook, Twitter, Telegram, Blog, Forum, Whatsapp, Instagram, email or video conference. Mobile technology allows access to

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data and information in any given moment or place and can perform tasks similar to a computer. This shows how mobile technologies are currently improving knowledge sharing environments.

MATERIALS AND METHODS

Knowledge sharing can be defined as transferring knowledge from one place or person to another (Sharrat and Usoro, 2003). According to Van den *et al.* (2004) knowledge sharing is a process where individuals exchange knowledge (tacit or explicit) and together, create new knowledge. Knowledge sharing is considered to be an important process of social interaction in organizations (Lin, 2007; Van *et al*., 2004; Ardichvili *et al*., 2003) and occurs at individual, group or organizational levels. The concept of knowledge sharing indicates the giving and receiving of information, framed within a context by the knowledge of the source (Sharrat and Usoro, 2003).

The importance of knowledge sharing has been emphasized by many as it has been proven to increase performance (Wening and Harsono, 2014; Kim *et al*., 2013; Akram and Bokhari, 2011; Marques *et al*., 2008; Quigley *et al*., 2007) competitiveness (Du *et al*., 2007) innovations (Noor and Salim, 2013; Wang and Wang, 2012; Tung and Chang, 2011; Kamasak and Bulutlar, 2010; Lin, 2007; Liao *et al*., 2007), job satisfaction (Rehman *et al*., 2010) has a positive relationship with final grades (Strang, 2011) reduces excessive learning stress (Calantone *et al*., 2002) and increases research skills (Islam *et al*., 2013).

Knowledge exists on a scale between tacit and explicit knowledge. Tacit knowledge is described as "know-how" which is related to individual skills (Polanyi, 1966) and explicit knowledge is described as "know what" which is very effective at facilitating the storage, retrieval and modification of documents and texts (Brown and Duguid, 1998). Tacit knowledge is hard to communicate and is deeply rooted in action, commitment and involvement (Nonaka, 1994). Sources need to change their tacit knowledge into forms that are understandable, absorbable and usable by others (IPE, 2003; Hendriks, 1999).

The value of knowledge increases during knowledge sharing processes (Alavi and Leidner, 2001). If knowledge sharing does not take place, knowledge that has been "Gained through experience, training and teamwork" will be lost, costing time, money and effort to regain similar knowledge (Howell and Annansingh, 2012). Knowledge sharing can occur through face-to-face or technology-enhanced interactions with others through knowledge management systems (Wang *et al*., 2012).

The activities of sharing knowledge are based on the process of communication. Communication is a process where information is transferred between the sender and the receiver and in order for the information to be transmitted successfully to another individual the receiver, needs to know which good communication channel in the contemporary era.

The mobile telecommunication has brought new opportunities for knowledge sharing. Online knowledge sharing facilitates the communication process, enables team activities, increases interactivity, prevents repetitiv work and promotes creativity among individuals (Zamiri and Shadiah, 2012). Knowledge sharing becomes easy and organized when distance and time are no longer an obstacle and the information that is desired is easy to search. When individuals often communicate and discuss the same topics a group is formed. When a group is formed online it is called a virtual community.

Virtual communities of practice are "Groups of people who share a concern, a set of problems or a passion about a topic and who deepen their knowledge and expertise in this area by interacting on an on going basis" (Wenger *et al*., 2002). Knowledge sharing is also seen as a major factor in the participation of many members in the virtual community (Koh and Kim, 2004) and has become one of the main assets of online communities (McAlexander *et al*., 2002). When more and more individuals are involved in virtual communities to gain knowledge and solve problems, more and more knowledge can be learned and shared.

RESULTS AND DISCUSSION

Most previous studies focused on factors influencing knowledge sharing. Three main factors affecting knowledge sharing are individual, organizational and technological (Dereje *et al*., 2016; Islam, 2014; Lin, 2007; Riege, 2005). Knowledge sharing practices would be less effective without technology (Riege, 2005). Van (2003) defines technology as software and hardware that people in organizations use in order to do their task which in other words means Information and Communication Technology (ICT). Technology consists of two primary components: a physical component which comprises of items such as products, tools, equipment, blueprints, techniques and processes and the informational component which consists of know-how in management, marketing, production, quality control, reliability, skilled labour and functional areas (Kumar *et al*., 1999). Tippins and Sohi (2003) refer technological support to promote communication between individuals in order to promote and facilitate knowledge exchange process.

Information and communication technology could have three functionalities which are assumed to lead to knowledge sharing which is communication, information storage and retrieval and collaboration (Choo *et al*., 2000). With the development of mobile and communication technology it gives the chance to owners of mobile devices to access not just educational re-sources but the possibility of engaging in many forms of social interaction and participation through mobile phones (Quinn *et al*., 2012). Lehner (2002) described that the mobility of knowledge includes the mobility of its source, the mobility of its formation place and the change of the place in which knowledge intensive processes take place. The mobile devices have a variety of capabilities such as making phone calls, recording audio/video, capturing pictures, storing data, accessing the Internet and connecting with social networks (Iqbal and Qureshi, 2012). Smart visualization mechanisms in mobile devices have been recognized to be powerful tools supporting knowledge communication, thus, promoting knowledge sharing and knowledge construction (Zhang *et al*., 2008).

Research of the factors affecting IT acceptance has several acceptance theories such as Technology Acceptance Model (TAM) (Davis, 1989) Diffusion of Innovation (DOI) (Rogers, 1995) or Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh *et al*., 2003) have been postulated and systematically been tested in many prior studies. Perceived ease of use and usefulness have been examined extensively in the information system literature as key to individual acceptance and adoption of new technologies can influence knowledge sharing attitude (Kasim, 2017; Nassuora and Hasan, 2010; Lu *et al*., 2010). A conceptual model based on the UTAUT with new variables concerning Relative Usability (RU) and User Autonomy (UA) explains employee acceptance of mobile technologies and software for knowledge transfer (Kuciapski, 2017).

In addition, theory planned behavior is also often chosen as the underlying theory of knowledge sharing behavioral studies in mobile technology (Hawamleh and Ngah, 2017; Cheng and Chen, 2007). Based on the Theory of Planning Behavior (TPB) the attitude, subjective norm and perceived behavioral control affect the behavior and intention. Perceived behavioural control refers to the individual perception of difficulty to carry out the advantageous behaviour and corresponds to self-efficacy which directly affects the behaviour intention and behaviour.

A few previous studies see the importance of mobile technology in learning and teaching (Hawamleh and Ngah, 2017; Krull and Duart, 2017; Hussein and Nassuora, 2011; Nassuora and Hasan, 2010; Yi *et al*., 2009; Cheng and Chen, 2007). Mobile-learning (m-Learning) considered as a further development of e-Learning (Pinkwart *et al*., 2003). Mobile learning as a model of e-Learning refers to the acquisition of knowledge, skills and attitudes by utilizing mobile technologies. When mobile technology was used in education it affected students attitudes such as taking pleasure in class, positive learning experience and student prospects of the common effectiveness of mobile technologies (Jabbour, 2013). Learners can use mobile technology anywhere and anytime to access educational resources (Ally and Tsinakos, 2014). It helping learners to share knowledge and create social interaction (Suanpang, 2012). It also better access to educational material, improvements in knowledge and confidence and reduced levels of anxiety around learning in practice (O'Connor and Andrews, 2018). In health industries also promoting wireless connectivity of knowledge sharing with hardware and software of mobile learning in health technology (Bullock, 2014; Cheng and Chen, 2007; Bose, 2003).

CONCLUSION

Advances in the field of Information Communication Technology (ICT) allow for knowledge sharing to occur more easily because of communication without geographic constraints, enables teamwork, promotes creativity and also increases innovation. Systems relying on ICT are considered by some to have created promising platforms to foster knowledge sharing (Choi *et al*., 2010). ICT helps faster creation, storing, sharing of knowledge within organization. Mobile technology in knowledge sharing are new approaches that contribute to transition to the knowledge society. Studies in recent years have revealed that the use of mobile technology can significantly impact knowledge sharing by enhancing the knowledge sharing process and introducing technology barriers. The combined use of Mobile-Mediated Communication (MMC) and Information Technologies (IT) presents new challenges inadopting new forms of interpersonal interaction and creating new knowledge.

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