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A Review of Factors Influencing Knowledge Sharing Behavior Among Virtual Communities

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Abstract

Virtual communities (VCs) comprise a wide range of actions such as discussion boards, huge multiplayer online games, as well as virtual realities like Second Life. In the business world the accessibility to consumers and consumer data has been leveraged by virtual communities. Today, individuals participate in virtual communities to gain knowledge to solve problems at work. Many organizations have also realized that virtual communities are the valuable systems that hold the key knowledge management and have supported the development of these systems to achieve their business goals. A virtual community is a cyberspace which is supported and developed by information technology. It is centered upon the interactions and communications between employees to generate specific knowledge which enables them to fulfill their tasks effectively. These days, the biggest challenge in developing virtual communities is the willingness issues for knowledge sharing (KS) in a community. In this respect, this article aims to introduce the factors that support or hinder one's knowledge sharing behavior (KSB) in the virtual communities of both environmental and personal perspectives. In order to find out the influencing factors of knowledge sharing behavior within the virtual communities of professional societies, this study proposed a reviewed study.

Key Words: Knowledge Sharing, Virtual Communities, Trust, Self-efficacy, Compatibility, Perceived Relative Advantage, Norm of Reciprocity, Familiarity, Sense of Belonging,

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Introduction

In a dynamic and competitive economy, knowledge is viewed as a critical organizational resource that provides a sustainable competitive advantage (1998). It is important for organizations to know how to transfer knowledge and expertise from experts to people who need it (Hinds, Patterson, & Pfeffer, 2001). In this regard, knowledge sharing between employees has become one of the most important factors of effective knowledge processing (Bock, Zmud, Kim, & Lee, 2005). On the other hand in business world the accessibility to consumers and consumer data has been leveraged by virtual communities (Spaulding, 2010). Today, individuals participate in virtual communities to gain knowledge to solve problems at work. Furthermore, many organizations have also realized that virtual communities are the valuable systems that hold the key knowledge management and have supported the development of these systems to achieve their business goals (Hsu, Ju, Yen, & Chang, 2007). Hence, there has been an increasing interest in exploring the factors that facilitate or hinder individuals' knowledge sharing behavior in the virtual communities. Recently, researchers have introduced the various factors that influence an individual's tendency to share knowledge, such as motivation systems, information and communication technologies, intrinsic and extrinsic incentives, costs and benefits, organization climate, social capital, and management ideology (Alavi & Leidner, 1999; Bock & Kim, 2001; Bock, et al., 2005; Chiu, Hsu, & Wang, 2006; Hsu, et al., 2007; Kankanhalli, Tan, & Wei, 2005; Koh & Kim, 2004; Orlikowski, 1993; Wasko & Faraj, 2005).

Knowledge and Knowledge Management

A considerable amount of literature which has been published on knowledge have specified that among the various organizational resources, knowledge is considered as the main and only different resource (Drucker, 2012) and is viewed as the key factor for any organization to establish and promote its competitive advantage (De la Vega & Stankosky, 2010). The most important property of knowledge is its originality and uniqueness (Al-Alawi, Al-Marzooqi, & Mohammed, 2007). Knowledge assists organizations to predict the nature and commercial potential of changes in the environment, as well as the goodness of their strategic decisions (C. Lin, Wu, & Yen, 2011). The capacity of organizations to create, classify, store, and distribute knowledge helps them to promote the quality of decision making, process efficiency, cost control, and customer satisfaction. Davenport and Volpel (T. H. Davenport & Völpel, 2001) argue that knowledge is considered as codified and applied information including insight, context, interpretation, experience, skills, wisdom, which increases a firm's value and the gaining of its objectives, goals, mission and vision.

Knowledge management processes apply the creating, classification, codifying, saving and sharing knowledge in order to gain the right information, to the right person, in the right place at the right time (Monnavarian & Amini, 2009). If knowledge is considered as a wealth, then the organizational attempts focus on 'managing' knowledge like managing

the other elements of production(Ibragimova, Ryan, Windsor, & Prybutok, 2012). There are a number of challenges that occur during the knowledge management developing progress. For instance, knowledge is a complex and multidimensional concept and is depended on many entities and activities within an organization, such as organization's culture, procedures, policies, structures, documents, and the employees (Jones, Cline, & Ryan, 2006).

Knowledge Sharing Behavior

Knowledge sharing behavior (KSB) is defined as the behavior of a person distributing his or her obtained knowledge and information to other parties within an organization (Ryu, Ho, & Han, 2003). Knowledge sharing includes a process of communication in which two or more parties are involving the provision and acquisition of knowledge (Usoro, Sharratt, Tsui, & Shekhar, 2007).

Generally, knowledge sharing behavior is defined as the act of making the needed knowledge available to other people within the organization (Abzari, et al., 2008). Knowledge sharing happens when individuals mutually exchange their tacit or explicit knowledge and commonly create new knowledge (van den Hooff & de Leeuw van Weenen, 2004).

Knowledge sharing has attracted much attention from researchers because of its actual and potential benefits to employees and organizations (Jonsson & Kalling, 2007; Yi, 2009). Furthermore, knowledge sharing is considered as a key factor for the firm's success in new global economic (T. Davenport, et al., 1998). Management can develop knowledge management initiatives. Therefore, employees would desire to adapt with the management demands of involving in knowledge sharing behavior (Ibragimova, et al., 2012).

Knowledge sharing has been studied through a variety of theoretical dominant. Sociological theories (Ajzen & Fishbein, 1980; Jeon, Kim, & Koh, 2011) as well as organizational theories (C. W. Chen, Chang, Tseng, Chen, & Chang, 2012; Friesl, Sackmann, & Kremser, 2011) were used to investigate knowledge sharing behavior in organizations. It is important to distinguish that individuals may decide to share or not to share their knowledge for some reasons (Wang & Zhou, 2007). Previous studies have shown that employees may share knowledge since they pleasure helping others or not share knowledge because they think their knowledge is not important for others (Kankanhalli, et al., 2005). People may decide to share knowledge as a useful way to develop their relationships with colleagues. Personal characteristics may also affect the extent to which the employees share knowledge for various purposes (Wang & Zhou, 2007). From the power perspective, an important obstacle for knowledge sharing is that sometimes knowledge can be considered as resource of superiority and power (Chan Kim & Mauborgne, 1998). If the organizational procedures and policies are looked as fair and justice, organizational communications will be enhanced (Tepper & Taylor, 2003) and

people are more willingness to have positive intention towards sharing their experiences and information (Ibragimova, et al., 2012). Hence, to promote KS the employee's motivation namely, employee's inherent tendency and willingness to share their knowledge, is essential to success (Bock, et al., 2005).

Virtual Communities and Business

Virtual communities (VCs) comprise a wide range of actions such as discussion boards, huge multiplayer online games, as well as virtual realities like Second Life (Spaulding, 2010). In business world the accessibility to consumers and consumer data has been leveraged by virtual communities (Kannan, Chang, & Whinston, 2000). Kannan *et al* (2000) and Rheingold (2000) defined virtual communities as an associations of Internet users who make webs of personal relationships. Community members declare rejection of company activity by discarding or ignoring the company (Rose, 2007), forsaking the community, or vilifying against the firm (Jarvis, 2007). Therefore, survival and continued action of a company in a community implies its success (Spaulding, 2010). Success also could be described in terms of increased cash flows. Positive cash flows may result directly positive outcomes of activities in the community (Spaulding, 2010). For example, participation in eBay, or marketing and brand recognition are related to positive cash flows directly and indirectly (Kerin & Sethuraman, 1998). However, without rich knowledge, virtual communities are not valuable enough (Chiu, et al., 2006).

The success a virtual community depends on the capability of the business to work properly with that community (Spaulding, 2010). Each virtual community has its own culture and expectations. The community will remain by joining to the group's norms and values. Groups or members who do not realize the social contract are looked out with mistrust and can be deprived from the community (Spaulding, 2010). Obviously, the greatest challenge in nurturing a virtual community is the supply of knowledge, specially the willingness to share knowledge with other participants (Chiu, et al., 2006).

Knowledge Sharing and Virtual Communities

As it mentioned earlier, knowledge sharing is a process of communication between two or more parties who are involving the preparation and acquisition of knowledge. Although, the communications have various forms, with or without technology usage (M. J. J. Lin, Hung, & Chen, 2009), knowledge sharing has become a serious challenge for organizations (Argote & Ingram, 2000; Bakker, Leenders, Gabbay, Kratzer, & Van Engelen, 2006; Szulanski, 1996).

The internet has resulted to the extension of virtual communities (VCs) all over the world (Fernback, 1999; Hiltz & Wellman, 1997). In today's competitive workplace, more and more employees take part actively in different kinds of virtual communities. It is critical for knowledge workers that give them ability to seek, collect, or even distribute

knowledge to enhance their capabilities, to attract advanced insights, and to resolve work problems (M. J. J. Lin, et al., 2009). Many companies have also recognized virtual communities as the worth systems for knowledge management and have decided to support the development and growth of virtual communities to achieve their business needs and objectives (Gongla & Rizzuto, 2001). The managers of organizations should consider VCs as a new innovation or knowledge repository in which members share their knowledge (Nambisan & Sawhney, 2008).

In recent years, a number of scholars have suggested that virtual communities (Preece, 2001; Rothaermel & Sugiyama, 2001) and knowledge sharing practice affect on knowledge management success (Chowdhury, 2005; Kankanhalli, et al., 2005; Wasko & Faraj, 2005; Williams, 2001). This important issue has led to the investigation of knowledge sharing in VCs by some researchers to determine the important factors which influence knowledge sharing and knowledge management success (Chiu, et al., 2006; Hsu, et al., 2007; Koh & Kim, 2004; Wasko & Faraj, 2005). While some studies have focused on contextual factors and knowledge sharing (Bock & Kim, 2001; Bock, et al., 2005; Kankanhalli, et al., 2005; Purvis, Sambamurthy, & Zmud, 2001; Wasko & Faraj, 2005), the other ones have focused on personal factors and knowledge sharing (Bock & Kim, 2001; Chiu, et al., 2006; Hsu, et al., 2007; Kankanhalli, et al., 2005; Wasko & Faraj, 2005).

Recently, researchers have introduced the various factors that influence an individual's tendency to share knowledge, such as motivation systems, information and communication technologies, intrinsic and extrinsic incentives, costs and benefits, organization climate, social capital, and management ideology (Alavi & Leidner, 1999; Bock & Kim, 2001; Bock, et al., 2005; Chiu, et al., 2006; Hsu, et al., 2007; Kankanhalli, et al., 2005; Koh & Kim, 2004; Orlikowski, 1993; Wasko & Faraj, 2005). Lin et al (2009) in their study, assumed that individuals' knowledge sharing behavior is influenced by the contextual factors and personal perceptions of the knowledge sharing practice in which they partake in. Research conducted by Wasko & Faraj (2000) indicated that a strong sense of reciprocity along with a strong sense of fairness facilitate the knowledge sharing behavior in electronic networks. They assert that individuals who share their knowledge in online communities believe in reciprocity. Although, exchanges in electronic networks happen through weak relationships between strangers, there is evidence of reciprocal supportiveness (Wellman & Gulia, 1999).

Some previous research has identified that individual perceived attributes, such as knowledge sharing self-efficacy, compatibility, and perceived relative advantage, influence individual knowledge sharing in virtual communities and organizations (Bock & Kim, 2001; Chiu, et al., 2006; Hsu, et al., 2007; Kankanhalli, et al., 2005; Wasko & Faraj, 2005).

In this section, some different types of factors which influence knowledge sharing behavior in virtual communities will be discussed through the review related literature. These factors have been examined practically by previous researchers to determine how they affect on KSB.

Trust

Trust has been extensively studied in both physical and virtual environments, and it is found to be a significant factor in outcome variables such as technology adoption or acceptance and system use or success (Chang, Cheung, & Lai, 2005; Gefen, Karahanna, & Straub, 2003; Komiak & Benbasat, 2006; T. S. Teo, Srivastava, & Jiang, 2008). Rotter (1967) defines trust as "an expectancy held by an individual or a group that the word, promise, verbal or written statement of another individual or group can be relied upon." In VCs, trust in other members could be understood as a general trust toward other members of the VC (Ridings, Gefen, & Arinze, 2002). The positive relationship between trust and knowledge sharing has been identified in many studies. For instance, Kankanhalli et al. (2005) found that trust positively affects knowledge contribution in electronic repositories. Usoro, Sharratt, and Tsui (2007) in their study of knowledge sharing in VCs found that the three dimensions of trust (i.e., ability, benevolence, and integrity) were all positively related to online knowledge sharing.

Furthermore, trust has been also recognized as a determinant of the effectiveness of knowledge sharing practice (Chowdhury, 2005; Williams, 2001). According to Nelson & Cooprider (1996), trust also is an important antecedent of Information System group performance and it has been realized that knowledge sharing behavior is occurred through the mechanisms of mutual trust and influence between these groups. Data from several sources indicate that trust in others' ability, benevolence, and integrity is related to the tendency to give and receive information (Ridings, et al., 2002) and to increased performance in distributed groups (Jarvenpaa, Knoll, & Leidner, 1998).

Siau and Shen (2003) propose that cultivating trust in electronic commerce is a dynamic and time-consuming process that involves initial trust formation and repeated trials until a firm loyalty is established. Trust in VCs is built upon obtainable economic benefit, mature community infrastructure, and sound managerial mechanism, which will attract members to participate and trust the community (Hsu, et al., 2007).

Results show that there is strong and significant direct effect of trust on self-efficacy; trust could raise the degree of self-efficacy for donating cognition. Pavlou and Fygenson (2006) extend the theory of planned behavior to explain the process of e-commerce adoption by consumers. They propose that trust is an antecedent of perceived behavioral control, which is a higher-order factor formed by two underlying dimensions: self-efficacy and controllability. Trust could be viewed as an environmental factor and knowledge sharing self-efficacy could be viewed as a personal factor (Lu, Zhao, & Wang, 2010).

Self-efficacy

Self-efficacy is another important concept in social psychology derived from social cognitive theory. It can be illustrated as beliefs in one's capabilities to execute and organize the action courses required to achieve the objectives (Jashapara & Tai, 2006).

Kankanhalli et al (2005) define knowledge sharing self-efficacy as the confidence in individual's ability to provide valuable knowledge to others. A number of studies have shown that people with high levels of expertise, skills and capabilities are more willingness to provide useful suggestion and advice on computer networks (Constant, Sproull, & Kiesler, 1996). People will feel more confident in what they can do via sharing helpful knowledge to the others (Constant, Kiesler, & Sproull, 1994). This attitude toward self-efficacy can incentive employees to share their knowledge to others (Bock & Kim, 2001). Hence, perceived self-efficacy also plays a significant role in affecting individuals' motivation and behavior (A. Bandura, 1986; Igbaria & Iivari, 1995). For these people, the need for a higher level of properties, values, and competency in their important identities stimulate them to fulfill a task. Therefore, people who are in a high level of self-efficacy will be more willingness to perform related behavior than those with low level of self-efficacy (Schunk, 1990).

Compatibility

Compatibility is defined as the extent in which an innovation is perceived as being along with existing values, previous experiences, and potential needs (Rogers, 2003). While, existing values refers to life style or habits, work attitude, and knowledge sharing concepts; previous experiences refers to the degree of using a computer, the internet, information systems, and knowledge sharing in VCs; and potential needs involve improved job performance, problem-solving capability, innovation, and competitive advantage (M. J. J. Lin, et al., 2009). More compatibility between organizational innovation and personal policy is a positive point, since permits innovation to be permitted in a more familiar context (Rogers, 2003). Budman (2003) identifies perceived compatibility as a psychological barrier, and believes that once people satisfy with online transactions, they increase their usage of other online services. In addition, a greater fit among components of knowledge sharing is favorable because it can stimulate individuals to develop new ideas (Hislop, 2003). Hence, when people in VCs perceive knowledge sharing as consonant with their personal values and needs, they are more desired to be positively inclined to adopting and promoting it (M. J. J. Lin, et al., 2009).

Behaviors such as knowledge sharing (Abbott, 1988; B. S. Butler, 2001), distributing ideas quickly (Finholt & Sproull, 1990), and providing emotional support (King, 1994; Rice & Love, 1987) are mostly observed in VCs in the case of comprehensive postings and viewings by members. Butler (2001) indicated that all mentioned behaviors have the potential to support a higher level of social support and help-giving behaviors. Therefore, when individuals frequently take part in knowledge sharing practices in VCs, they are more willingness to positively promote VCs or to attract new potential knowledge contributors (M. J. J. Lin, et al., 2009).

Relative Advantage

Relative advantage points to the degree to which an innovation provides more advantages than its pioneer. Relative advantages are declared as enhanced efficiency and effectiveness, economic profits, and developed social status (Rogers, 2003) .Moore and Benbasat (1991) realized that perceived relative advantage of an innovation has positively influenced to the degree of adoption. However, facilitators of knowledge sharing demonstrated obvious benefits such as decreased communication costs and rapidly problem-solving capability (Song, 2002). Therefore, when the people who are involved in decision making perceive clear personal and organizational advantages of knowledge sharing, they are more willingness to support a knowledge sharing culture within the organization (Käser & Miles, 2002). Some studies (Andrews, 2002; Zhang & Hiltz, 2003) have argued that people share knowledge within virtual communities to seek support, to enrich their knowledge, and to make closed friendship. Butler et al (2007) suggested that the main reason for parties to share knowledge is for their achievements in being seen as skilled, expert, knowledgeable, or respected. As a result, a strong relative advantage of knowledge sharing perceived by knowledge workers positively affects on personal behavior to facilitate knowledge sharing behavior (M. J. J. Lin, et al., 2009).

Chen and Hung (2010), proposed an integrated framework to develop a more comprehensive perspective of the relationships between contextual factors (norm of reciprocity and interpersonal trust), personal factors (knowledge sharing self-efficiency, perceived relative advantages, and perceived compatibility), knowledge sharing behavior, and community promotion, and bring it up-to-date with empirical data from two PVCs.

Norm of Reciprocity

The norm of reciprocity usually points to a set of socially accepted rules regarding a transaction in which a party extending a resource to another obligates the latter to return the favor (J. B. Wu, et al., 2006), and has been distingshed as a benefit for individuals engaging in social communication. A basic norm of reciprocity is a sense of mutual obligations, somehow people reciprocate by refunding the benefits they receive from others, ensuring that supportive exchange ongoing (C. J. Chen & Hung, 2010). Reciprocity can utilize as a motivational mechanism to develop the discretionary databases.

Generally, participation in VCs is open and voluntary and participants are not familiar. Knowledge seekers have no control over who responds to their question or its quality. Knowledge contributors have no assurance that those they are helping will ever return the favor. This strongly contrasts with traditional communities of practice and face-to-face knowledge exchanges where participants typically know each other and interacts constantly, creating expectations of obligation and reciprocity applicable through social barriers (C. J. Chen & Hung, 2010). Wasko and Faraj (2005) suggested that people who share knowledge in online communities believe in reciprocity. When there is a strong

norm of reciprocity in the collective, knowledge contributors may feel obliged to share their knowledge (Wasko & Faraj, 2005). The norm of reciprocity represents a pattern of behavior where people respond to friendly or hostile actions with similar actions. In the collective climate, reciprocity is the norm that facilitates the sharing of knowledge (M. J. J. Lin, et al., 2009).

Zhao et al (2012), developed the research model theory considering the factors reflecting three dimensions of social capital directly and indirectly influence the participation in a VC, which is measured by the intentions to get information from and share knowledge with the community. In their study they measured the relationship between Familiarity, Trust, Perceived Similarity, and Sense of Belonging to Knowledge sharing behavior in VCs.

Sense of Belonging

Sense of belonging can be defined as "the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment (Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992). Sense of belonging is quite similar with affective commitment which is defined as "employee's emotional attachment to, identification with, and involvement in the organization(Meyer & Allen, 1991). In a VC, sense of belonging refers to the feeling of belonging, membership, or identification to the VC (Zhao, et al., 2012). Several researchers view it as a sense of community (Koh & Kim, 2003). In other words, through this sense of belonging, members care about one another and therefore are willing to participate more in the activities in the VC. When members have a stronger sense of belonging to the VC, they may be more likely to internalize the social norm of the VC into their thoughts and take other members' opinions seriously(Zhao, et al., 2012).

Familiarity

Familiarity refers to the extent to which individuals know each other, and it can be built up through interactions (Zhao, et al., 2012). Prior research has shown that people are prone to trusting those that they are familiar with irrespective of either in a physical or virtual environment (Gulati, 1995; Lu, et al., 2010; Wu, Lin, & Lin, 2006) as familiarity reduces uncertainty and prompts trust between members (Rousseau, Sitkin, Burt, & Camerer, 1998). In VCs, an individual becomes familiar with those who participate frequently when he interacts with others. Accordingly, because a higher familiarity indicates more accumulated knowledge based on previous successful interactions, familiarity with other members in VCs may lead to more trust in members. In other words, familiarity results in lower uncertainty and higher trust in long-term relationships (Zhao, et al., 2012). In VCs, being familiar with the members or the community can be considered as a basis for users to identify with the community and generate a sense of belonging.Through the process of interactions, members learn and adopt the language, value of the VC, they also contribute to the creation of new values and visions. Members would find more commons when they get more familiar with each other (Zhao, et al.,

2012). Familiarity makes strangers to be acquaintances through interactions. As familiarity refers to the structural dimension of social capital, it means that, when a member interacts more with other members, he will get more social ties in the VC which would help him get the knowledge he needs. As the more a VC member gets himself familiar with others, the more he understands the social norm of the VC. The knowledge he accumulates through this process will be helpful to guide him in following the social norm and sharing his knowledge or experiences with other members of the VC (Zhao, et al., 2012).

Perceived Similarity

Perceived similarity refers the trust building mechanism where trust is established based on common characteristics the trust or perceives of the trustee, including interests, values, and demographic traits. (Lu, et al., 2010). In VCs, people get together for common interests or goals and share their experiences. The common interests or experiences are the similarity between members. Perceived similarity encourages the trust or to have confidence in the trustee as people tend to trust others who are similar to them (Ziegler & Golbeck, 2007). When people are grouped together in the same community, they tend to perceive each other in a positive way, which enhances their trust beliefs (McKnight, Cummings, & Chervany, 1998). In their study of trust formation in virtual teams, Robert, Denis, and Hung (2008) also found that category-based processing of team member characteristics significantly affects individual swift trust. In VCs, people interact with each other due to common interests or goals, and such similar interests or experiences facilitate trust building.

It is believed that there is a positive relationship between perceived similarity and participation. In a VC context, members are more willing to interact with similar people and participate in interaction activities including getting the knowledge or information they need from the VC. Similarly, with common goals and interests, perceived similarity could reduce the possible misunderstanding in communication, thus members are more likely to share their knowledge or information with other members (Zhao, et al., 2012).

Outcome Expectations

Based on the SCT, outcome expectations refer to the expected consequence of one's own behavior (Albert Bandura, 1997; Compeau & Higgins, 1995). An individual's behavior may lead to positive outcome, because individuals will behave with rational self-interest as asserted in the social economic exchange theory (Bock & Kim, 2001). In the context of VCs, the common interests enable members to establish communities. Moreover, the knowledge embedded in the VCs is considered as a public good collectively owned and maintained by the communities (Lee & Choi, 2003; McLure Wasko & Faraj, 2000), and all members are permitted to access that knowledge (Wasko and Faraj, 2000). From this point of view, the motivation of knowledge sharing is for the VCs rather than for self-

interest (Von Krogh, 1998), resulting in positive outcomes for the VCs, such as retaining the position and image of the VCs.

Personal outcome expectations focus on individuals' expectations, such as gaining more recognition and respect, making more friends, or getting better cooperation in return, whereas community-related outcome expectations are defined as an individual's expectations about the impact of his knowledge sharing on VCs, such as achieving the goals, enriching the knowledge base of VCs, or continuing to operate VCs. Prior IS studies have provided strong supports for the significant relationship between self-efficacy and outcome expectations. Members in the VCs expect to share the knowledge they are interested to reach their personal goals (e.g., praise, promotions, image, social status). Hence, members are likely to share their knowledge when positive personal outcome expectations can be realized (Zhao, et al., 2012).

All mentioned factors are depicted in the table bellow:

Some factors influencing KSB in VCs measured in previous research

No	Factor	Definition	Author(s)
1	***Trust***	"Employees maintaining reciprocal faith in each other in terms of intention and behaviors"	Ridings, 2002; Chowdhury, 2005; Chang, 2004; Hsu, 2007; Lin, 2009Lu, 2010; Chen, 2010; Zhao, 2012
2	***Self-efficiency***	"Individuals attempting to improve others' perception of their competency"	Bock&Kim, 2001; Hsu, 2004; Lam, 2005; Kankanhali, 2005; Jashapara, 2006; Hsu, 2007; Lin, 2009; Chen, 2010
3	***Norm of Reciprocity***	"A set of socially accepted rules regarding a transaction in which a party extending a resource to another obligates the latter to return the favor"	Wasko&Fraj, 2005; Lin, 2009; Chen, 2010
4	***Perceived relative Advantage***	"A measure of the degree to which an action provides more benefit than its precursor"	Butler, 2007; Andrews, 2002; Zhang, 2003; Hsu, 2007; Lin, 2009; Chen, 2010
5	***Perceived compatibility***	"The degree to which an innovation fits into the existing values, previous experience, and current needs of potential adopters"	Hislop, 200; Hsu, 2007; Lin, 2009; Chen, 2010
6	***Familiarity***	"The extent to which individuals know each other, and it can be built up through interactions"	Koh&Kim, 2004; Wu&Cheng, 2005; Soroka, 2006; Zhao, 2012
7	***Sense of Belonging***	"The experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment"	Teo, 2003; Zhao, 2012
8	***Perceived Similarity***	"The common characteristics, such as interests, values, or goals, that one perceives with others"	Robert, 2008; Lu&Zhao, 2010; Zhao, 2012
9	***Outcome Expectations***	"The expected consequence of one's own behavior"	Bock&Kim, 2005; Ryu, 2003; Kankanhali, 2005; Hsu, 2007

Discussion and Conclusion

This study sets out to introduce briefly some influencing factors on knowledge sharing behavior in virtual communities. The reviewing of the literature shows us that there has been an enhancing interest in examining the factors that facilitate or hinder individuals' knowledge sharing behavior in the virtual communities. The empirical result of the previously conducted researches suggested that trust has been distinguished as the one of the most important factors which influences knowledge sharing behavior in virtual communities. Furthermore, based on social capital and social cognitive approaches, reciprocity, self-efficacy, compatibility, relative advantages, and trust have been recognized as the critical factors influencing the individuals' intention to share knowledge. Besides these, familiarity, the sense of belonging, outcome expectations as well as perceived similarity have been introduced as key factors to promote KSB in VCs.

For practical application, analysis of the reviewed studies offers a framework of reference for the willingness to facilitate knowledge sharing, and community promotion within the organizations and virtual communities. The results also suggest that interpersonal trust plays a significant role in knowledge sharing and community promotion within VCs. Managers concerned with developing and preserving knowledge exchange through virtual communities should develop mechanisms or strategies that persuade and encourage the interaction and the strength communication among members. They can promote reciprocity by using incentives such as reputable rewards for sharing knowledge. Since knowledge sharing self-efficacy, perceived relative advantage, and compatibility are important predictors of motivation to facilitate knowledge sharing, management of PVCs should provide some facilities, such as on-line training programs, support mechanisms, and guidelines, to increase members' self-efficacy so that members are confident enough to share their knowledge in PVCs.

As a recommendation for future research, it would be interesting to assess the effects of organizational, individual, and environmental factors separately on knowledge sharing behavior in VCs through social psychological models such as Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), or Technology Acceptance Model (TAM) to identify preciously the reasons of knowledge sharing behavior. Furthermore, according to knowledge sharing literature most of the researches have been conducted in Western and East Asia countries. So considering different cultural characteristics and economical situations, which influence the type of organizational structure as well as interpersonal communication between members, more investigations are needed to be conducted in another area such as the Middle East and African countries.

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