Available online at www.sciencedirect.com
ScienceDirect
Int. J. Human-Computer Studies 65 (2007) 153–169
International Journal of Human-Computer Studies
www.elsevier.com/locate/ijhcs

Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations ☆

Meng-Hsiang Hsu[a,*], Teresa L. Ju[b], Chia-Hui Yen[c], Chun-Ming Chang[a]

[a]*Department of Information Management, National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan*
[b]*Department of Information Management, Shu-Te University, Kaohsiung, Taiwan*
[c]*Department of International Business Management, Wufeng Institute of Technology, Chiayi, Taiwan*

Received 28 January 2005; received in revised form 11 September 2006; accepted 23 September 2006
Communicated by P. Zhang

Abstract

There has been a growing interest in examining the factors that support or hinder one's knowledge sharing behavior in the virtual communities. However, still very few studies examined them from both personal and environmental perspectives. In order to explore the knowledge sharing behaviors within the virtual communities of professional societies, this study proposed a social cognitive theory (SCT)-based model that includes knowledge sharing self-efficacy and outcome expectations for personal influences, and multi-dimensional trusts for environmental influences. The proposed research model was then evaluated with structural equation modeling, and confirmatory factor analysis was also applied to test if the empirical data conform to the proposed model.

Keywords: Knowledge sharing behavior; Trust; Self-efficacy; Social cognitive theory; Virtual communities

1. Introduction

The Internet enables knowledge exchange in ways such as online group meetings that were not possible before. It also gave rise to professional virtual communities (VCs) that enable knowledge sharing without ever meeting the participants. Today, more and more individuals participate in VCs to acquire knowledge to resolve problems at work. Many organizations have also recognized the VCs as a valuable system that holds the key to knowledge management and have begun to support the development and growth of VCs to meet their business objectives. A VC is a cyberspace supported by information technology. It is centered upon the communications and interactions of participants to generate specific domain knowledge that enables the participants to perform common functions and to learn from, contribute to, and collectively build upon that knowledge (Lee et al., 2003).

While VCs bring people together "virtually" from all over the world, knowledge sharing among them has not lived up to expectation. Davenport and Prusak (1998) argue that sharing knowledge is often unnatural because people think their knowledge is valuable and important; hoarding knowledge and being suspicious upon knowledge from others are the natural tendency. Furthermore, Pfeffer and Sutton (1999) find that knowledge management in many organizations only emphasize on technology, particularly information technology. Finally, Dixon (2000) point out that "build it and they will come" and "technology can replace face-to-face interaction" are the myths of knowledge sharing. Clearly, the biggest challenge in fostering VCs is the willingness to share knowledge with other members. In this respect, two issues are involved: personal cognition and social influence; personal cognition is based on self-efficacy and outcome expectations and social influence is based on trust. Identifying the personal cognition (Bartol and Srivastava, 2002; Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005) and the

☆This study is funded by the National Science Council under project number NSC94-2416-H-327-007.
*Corresponding author. Tel.: +886 7 6011000x4118; fax: +886 7 6011011.
E-mail address: mhhsu@ccms.nkfust.edu.tw (M.-H. Hsu).

1071-5819/$ - see front matter © 2006 Elsevier Ltd. All rights reserved.
doi:10.1016/j.ijhcs.2006.09.003

relationships among members' underlying knowledge sharing behavior in VCs (Wasko and Faraj, 2005; Bock et al., 2005) would help both academics and practitioners gain insights of how to stimulate knowledge sharing in VCs. To this end, a foundation for investigating this matter is the social cognitive theory (SCT).

SCT (Bandura, 1986, 1997) has been widely applied in the information systems literature with demonstrated validity. This theory states that an individual will take an action that has personal cognition in a social environment. Furthermore, a person's cognition to act in a certain way has two basic determinants: self-efficacy and outcome expectation. Self-efficacy, or the belief in one's capabilities to organize and execute courses of actions required to manage prospective situations (Bandura, 1997), is a potentially important factor influencing the decision to share knowledge (e.g., Bock and Kim, 2002; Hsu et al., forthcoming; Kankanhalli et al., 2005).

Outcome expectations that are related to reward systems (Bartol and Srivastava, 2002) are also important factors influencing the decision to share knowledge. According to the economic exchange theory, individuals will behave by rational self-interest, thus, knowledge sharing will occur when its outcomes exceed its costs or are as expected (Constant et al., 1994). This is why practitioners emphasize incentive systems for successful knowledge management. On the one hand, outcome expectations imply that, if members of VCs believe that they would receive extrinsic benefits such as monetary rewards, promotion, or educational opportunity from their knowledge sharing, then they would develop a more positive attitude toward knowledge sharing (Bock and Kim, 2002; Kankanhalli et al., 2005). On the other hand, if members believe that they would receive intrinsic benefits such as self-satisfaction, social recognition, or power, then they would also have pleasure in knowledge sharing (Kankanhalli et al., 2005).

Trust, an implicit set of beliefs that the other party will behave in a dependent manner (Gefen et al., 2003; Kumar et al., 1995) and will not take advantage of the situation (Gefen et al., 2003), has been recognized as an important factor affecting knowledge sharing (Ridings et al., 2002). Knowledge sharing is a motivation for members to use VCs (Ridings et al., 2002; Wasko and Faraj, 2000). In the context of VCs, members voluntarily contribute their knowledge without receiving monetary rewards (Lee and Cole, 2003). Unlike traditional organizations, membership in VCs is open (Lee and Cole, 2003) and members of VCs are formed by common interests and practices (Ba, 2001; Ridings et al., 2002) without shared norms and routines to serve as linkage between members and VCs. Thus, the relationship between members and VCs are more fragile than that of traditional organizations. Moreover, most members in VCs are relatively invisible, and most VCs do not provide guarantees that others will behave as they are expected to (Ridings et al., 2002). The lack of face-to-face communication and legal guarantees makes it harder for members of VCs to share their knowledge. Hence, trust is important in VCs, because it could create a necessary atmosphere that makes interaction with others more open (Bulter and Cantrell, 1994; Ridings et al., 2002) and rules out the undesired and opportunistic behaviors (Luhmann, 1979; Ridings et al., 2002). In these perspectives, trust is a crucial factor to sustain the continuity of VCs (Ridings et al., 2002).

Overall, the purpose of this study is to identify the antecedents that support or hinder an individual's knowledge sharing behavior by applying SCT-based model from both social environment and personal cognition aspects. Especially, this study aims to explore the nature of trust and divides it into three constructs—economy-based, information-based and identification-based trust—to examine their impacts on an individual's knowledge sharing self-efficacy and behavior. The knowledge sharing self-efficacy is served as a behavioral control variable to deal with situations in which people face the challenge of exchanging knowledge among individuals in cyberspace. This paper is organized as follows: first, the SCT is described as a theoretical background to link self-efficacy, outcome expectation, and trust, and a research model is proposed. Then, research methodology and data analysis are discussed. Finally, the conclusion and limitations are presented.

2. Theoretical background and research model

Knowledge sharing is the behavior when an individual disseminates his acquired knowledge to other members within an organization (Ryu et al., 2003). Prior research has highlighted the various factors that affect individual's willingness to share knowledge, such as costs and benefits, incentive systems, extrinsic and intrinsic motivation, organization climate, and management championship (e.g., Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Purvis et al., 2001; Wasko and Faraj, 2005). Therefore, we could reasonably assume that individuals' behavior for knowledge sharing will be guided by personal characteristics and the environment they are in.

To explore the knowledge sharing behavior in VCs, we draw on the SCT (Bandura, 1982, 1986, 1997) to conceptualize a research model for this study (see Fig. 1). SCT is a widely accepted model for validating individual behavior (Compeau and Higgins, 1995a). In the SCT model, personal factors, environmental influence, and behavior act as interacting determinants that will influence each other bidirectionally (Wood and Bandura, 1989). While SCT advocates the relationship of "triadic reciprocality" among the three determinants (Bandura, 1986; Wood and Bandura, 1989; Compeau and Higgins, 1995a), this study concerns with the role of personal factors and environmental influence on individual behavior.

In this study, knowledge is viewed as an object that can be accessed and retrieved by members of VCs (Alavi and Leidner, 2001). Self-efficacy and outcome expectations are seen as predictors of personal factors since both of them