Electronic Commerce Research and Applications 10 (2011) 105–114

Contents lists available at ScienceDirect

Electronic Commerce Research and Applications

journal homepage: www.elsevier.com/locate/ecra

Assessing the mediating role of online social capital between social support and instant messaging usage

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ARTICLE INFO

Article history:
Received 19 November 2009
Received in revised form 14 August 2010
Accepted 14 August 2010
Available online 8 September 2010

Keywords:
Commitment
Reciprocity
Shared codes and language
Shared narratives
Centrality
Network ties

ABSTRACT

This study validates a research model that examines usage of instant messaging (IM) from the aspect of online social support. Drawing on the social capital theory, this study postulates that IM usage is indirectly affected by social support via the mediation of the following six dimensions of social capital: commitment, reciprocity, shared codes and language, shared narratives, centrality, and network ties. The model tests data obtained from business organizations in Taiwan, and the results suggest that the indirect influence of social support on IM usage through shared codes and language is significant, and the indirect influence of social support on IM usage through centrality is also significant. Managerial implications and limitations of the empirical findings are provided.

1. Introduction

Virtual communities in practice consist of large knitted and geographically distributed groups of online users engaged in shared activities. While e-mail has been the dominant communication technology across virtual communities, another widely diffused and mature innovation is instant messaging (IM), which is well-known for its interactive online communication (Li et al. 2005). IM is a popular online, real-time, mobile computer-mediated communication technology (Zaman et al. 2010). Millions of people use IM with their friends and families for online social communication (Li et al. 2005). To date, IM usage has been further extended to business settings (Shiu and Lenhart 2004) such as communication among co-workers, sales promotions between buyers and sellers, and so on (Li et al. 2005).

Although IM users may not meet each other face-to-face, many are able to build a social relationship and foster interactions with one another, suggesting the importance of understanding social capital in IM virtual communities. Regardless of the increasing importance of online social capital in influencing individuals' IM usage, little attention has been paid to such capital in the IM usage literature. Most of the contemporary research models cover IM usage, such as the technology acceptance model (Lu et al. 2009, Wang et al. 2004), the motivational model (Lee et al. 2007, Li et al. 2005), the theory of planned behavior (Lin et al. 2006, Lu et al. 2009, Zhou 2007), the model of innovation diffusion theory (Rouibah and Hamdy 2009), and the unified theory of acceptance and use of technology (Lin and Bhattacherjee 2008, Park et al. 2007). These studies have all ignored the potential role of social capital in affecting IM usage.

Social capital is defined as an important resource embedded in a social structure, which is accessed and/or mobilized in deliberate action (Lin 2001, Song and Lin 2009). Social capital has been well applied to explain a variety of pro-social behaviors (such as online information exchanging and online experience sharing with others) that other forms of capital (e.g., human or financial capital) are unable to clarify (Bottrell 2009, Coleman 1990), suggesting its substantial influence on IM usage for pro-social behaviors. Whereas other forms of capital are established on the basis of financial assets or particular individuals, social capital resides in the interpersonal fabric of relationships embedded in the social realm (Putnam 1995, Wasko and Faraj 2005). With the continuous breakthrough of technology infrastructures, there is increasing evidence that users who have accumulated certain social capital are likely to use IM for maintaining frequent social interactions and relationships (Cummings et al. 2006), which is comparable to the mutual interactions in face-to-face settings (e.g., Walther and Boyd 2002). Unfortunately, the key antecedents of social capital in IM contexts remain unknown in previous studies, and thus this study's purpose is to explore IM usage caused by various social capital factors and their antecedents.

This study differs from previous research in two critical ways. First, while some literature links social capital and social support

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doi:10.1016/j.elerap.2010.08.003

to IT usage which focuses on qualitative rationales (e.g., Drentea and Moren-Cross 2005), this study complements the previous qualitative studies by providing empirical confirmations and by examining various dimensions of social capital in greater depth. Particularly, this study decomposes social capital into six specific constructs – commitment, reciprocity, shared codes and language, shared narratives, centrality, and network ties – that help e-commerce marketers or corporate managers learn about efficient approaches in order to strengthen people's IM usage. Second, although previous research finds that health-related Internet use is associated with social support among online individuals (Kalichman et al. 2003), previous research rarely discusses how the association between social support and IM usage may be fully mediated and by what factors. This study empirically confirms whether such associations are fully or partially mediated by social capital, further complementing the previous research.

The rest of the paper proceeds as follows. The next section describes the theoretical underpinnings of social capital and formulates a research model of IM usage based on social capital as the mediator. The third section presents our research methods, including our choice of empirical context, subject samples, and instrumentation. The fourth section describes the data analysis procedures and results. The fifth section outlines the implications of our findings for future IM usage research and practice, and then identifies the study's limitations.

2. Social capital theory and hypotheses' development

2.1. Social capital and IM usage

Social capital can be used for understanding individuals' IT usage (e.g., He et al. 2009), because social capital complements the medium theory as it explains what situations are important for individuals to voluntarily interact with online contacts to an extensive degree (Radin 2006). Particularly, online social capital influences the usage of IM that supports social networking. Since productivity tools such as Microsoft Office Word or EKR (electronic knowledge repositories) are primarily utilitarian in workplaces, it may be possible that online social capital plays a less important role in its use than that of self-efficacy (Lin and Huang 2009, Kankanhalli et al. 2005). However, this does not suggest that social capital has no influence on usage behavior of information systems (e.g., knowledge management systems, KMS). In the studies by Lin and Huang (2009) and Kankanhalli et al. (2005), the effects of social capital are significant. He et al. (2009) conclude that employees are more dependent on a trustworthy social relationship based on a set of shared values and norms (p. 179). They further state that such a social relationship based on a social capital perspective (p. 176) evolves into even more communication and interaction, and thus "people exhibited a commitment to continue using the KMS" (p. 179). For instance, online individuals may easily apply IM to create knowledge or share information over open settings (e.g., online bulletin boards) via social interactions, given that online communities provide an environment conducive to the development of social capital (e.g., Nahapiest and Ghoshal 1998, Wasko and Faraj 2005). Moreover, previous research regarding employees' relationships and their technology acceptance argues that users' usage intention relies heavily upon the beliefs employees have about their social relationships with their team members (Magni and Pennarola 2008). Moreover, social norms (a form of social capital) have been confirmed to be a determinant of technology usage, but not vice versa (Hsu and Lu 2004, Wang et al. 2004). Collectively, individuals' social capital substantially helps strengthen their subsequent technology usage (e.g., IM).

An individuals' IM usage is hypothetically driven by social capital, including three dimensions: (1) structural links or connections between online individuals, which are named structural capital; (2) individuals' cognitive capabilities that help them to have a shared system of understanding among the individuals, also known as cognitive capital; (3) social online relationships that have strong, positive characteristics, which are named relational capital. Given that these three dimensions of social capital are positively related with individuals' technology usage, social support proposed as antecedents in this study hypothetically affects IM usage through the three dimensions. Specifically, subscribers' usage is considered an outcome driven by social and individual factors in the majority of previous e-commerce research (e.g., Chau et al. 2007, Kim et al. 2010, Lee 2009, Rouibah 2008, Rouibah and Hamdy 2009, Yoon and Kim 2007).

Many studies in the literature have argued that technology usage is the outcome of social networking (e.g., Cheung and Lee 2010, Lin and Bhattacherjee 2008), and not vice versa. For example, Zhang (2009) surveys users from popular social networking sites to test the validity of the research model, confirming that there is a direct influence from social networking (i.e., online community) on users' system usage. Based on the consensus mentioned above, the mediating role of social capital between social support and IM usage is discussed in the following section:

2.2. Social support and social capital

Social support is defined as "the exchange of verbal and nonverbal messages conveying emotion, information, or referral, to help reduce one's uncertainty or stress" (Walther and Boyd 2002, p. 154). Social support represents a focal point around which social ecological models of human interaction and social actions can develop (Vaux 1988). A support group that provides social support is likely to offer relative social capital in which an embedded community is activated for purposeful action (Lin 2001). This implies a linkage from social support to social capital. Social capital can be seen as capital in which relations with friends, neighbors, relatives, and colleagues supply shared support, because it provides companionship, emotional support, information, and a sense of belonging (Wellman and Frank 2001).

Although social support has been traditionally examined in previous research within the context of personal, face-to-face social capital, there is increasing evidence that social support obtained via IM helps derive social capital to a degree which is comparable to that found in face-to-face settings. In other words, people aggregate across communities to share valuable information, experiences, or empathy about a common cause (such as coping with terminal illnesses such as cancer or AIDS), overcoming personal crises (such drug or alcohol addiction), or sharing profit-making opportunities like stock tips or rumors. Taken as whole, these are activities that are likely to establish strong online social capital. For example, the "Systers" mailing list was originally intended for female computer scientists to provide online social support, but then it evolved into a forum for deriving online social capital. Online social support is indeed effective in fostering online social capital, even when those involved are virtual strangers.

The substantial influence of support on social capital has already been indicated in a study covering an Internet mothers' website (Drentea and Moren-Cross 2005). Particularly, online social support was provided by users who offered formal guidelines and informal information-sharing services as a resource to Internet mothers and was likely to boost the mothers' technology usage (Drentea and Moren-Cross 2005). This reveals that social capital emerges through the diffusion of online social support.

The dynamics of IM-mediated social support and social capital remain quite different from those of face-to-face social support and social capital, given the geographically-dispersed nature of online networks, the willingness of network members to trust and