Social Media’s Role in Big Data Innovation: A Study of Relational Capital and Knowledge Processing

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Abstract

Social media (SM) platform and the IT infrastructure are means by which firms are organizing themselves to cope with knowledge-based competition and enhancing their innovation capability. Social capital theory, a mature but growing area of research, advances the idea that social capital promotes firm level innovation. Nahapiet & Ghoshal (1998) define "social capital as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit". Social capital has been conceptualized as having three dimensions: structural, relational, and cognitive. Structural dimension of social capital captures the interaction pattern between organizations; relational dimension refers to the relationship assets such as trust and good relationship nurtured through the interactions; and cognitive dimension describes the extent to which the organizations share a common understanding emerging from these interactions. We focus on relational capital in this paper.

Currently, minimal research exists on the relationship between relational capital of a firm and innovation outcomes. Very little research has been done on the role information technology plays, if any, in this translation process. We investigate what is the impact of relational capital, a form of social capital, on innovation in the presence of social media and IT platforms.

Our paper is positioned at the intersection of IT, relational capital and knowledge processing leading to innovation outcomes. The research model is motivated by Yli‐Renko, Autio and Sapienza (2001) paper on how relational capital promotes innovation outcomes through the intermediate variable of knowledge processing activities. The paper focuses on the question, "Does social media in particular and information technology in general impact the relationship between relational capital and innovation and what is the nature of mediation and moderating influence do they have?"

We have chosen to test our theoretically derived research model with survey data collected from company employees who are familiar with their organizations’ social networks and with assimilation initiatives relating to cloud technologies and social media.

We developed instruments by adopting and adapting existing measures from previous research. Dependent variable is adoption of big data infrastructure in a firm. Independent variables are social media and information technology. Mediating variables are relational capital (knowing and trusted relationship with vendors) and knowledge processing (processing and exploitation of knowledge).

Panel data collected using a survey supported the research model. Preliminary analysis indicates that relational capital promotes big data implementation both directly and through the mediating variable of knowledge processing. Further, the research provides evidence that IT & social media play a critical role in promoting innovation. It plays a direct role and also a role of facilitator by enhancing relational capital and knowledge processing. Social media promotes relational capital among firms. It also promotes knowledge processing in the firm both directly and as mediated through relational capital. Similarly, IT platform, represented by the variable IT size, also enhances knowledge processing and big data implementation. No evidence was found that IT size enhances relational capital. Several mediation and moderation tests confirmed the centrality of knowledge processing. We are looking for feedback regarding the research study.