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The Moderating Effect of Knowledge Integration on the Relationship between Social Capital and Open Innovation

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The Moderating Effect of Knowledge Integration on the Relationship Between Social Capital and Open Innovation in Malaysian MSC Status IT Companies.

Research-in-Progress

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Abstract

The study explores the relationship between social capital (SC) and open innovation (OI) performance. Target population of this study consists of technology-based firms in Malaysian context. Specifically, the study sought to examine the moderating role of knowledge integration (KI) in the relationship between SC and OI performance. The complete paper will provide new insights from the SCT into OI studies, an approach which may support an increased contribution of external knowledge to a firm's OI Performance.

Keywords: Open Innovation, Knowledge Integration, Social Capital

Background of the Study

The Open Innovation (OI) model is associated with managing a more open, collaborative framework of knowledge exchange and inventive processes. This enables firms to better use external, as well as internal, ideas to advance their innovative activity and overall performance. OI offers opportunities, when applied to the right problem, can effectively extend the solution provider search beyond the boundaries of an industry.

Today, the challenging and changing business environment demands advances in OI competencies. The increase in the use of OI to meet the demands of globalization and the competitive marketplace highlights the need to better understand the social skills and competencies of OI. Increasing evidence shows that, poor knowledge and lack of intangible organisational capitals are the major threats in today's organisation. To be more effective in innovation, organizations have to be focused on how they manage intangibles. Social capital (SC) is a critical resource for firm performance and firm ability to innovate, create and sustain competitive advantage (Nahapiet and Ghoshal, 1998).

However, SC is a static resource that does not operate in a vacuum and independent of the management context (Lin, Nan., 1999). Knowledge integration (KI) should put SC as a resource into action to produce value and superior OI performance. Furthermore, knowledge is an important organizational resource and capability that can be a competitive advantage (Grant, 1996). According to Verona and Ravasi (2003), KI refers to the capacity to shape and manage a context that stimulates latent and dispersed knowledge resources, so that they can jointly contribute to developing and launching new product.

SC and KI are two important streams of research addressing social interaction issues in organizations (Grant, 1996; Kianto et al., 2014; Wang et al., 2016; Giacosa et al., 2017). Some empirical studies find that all components of SC, e.g. structural capital, relational capital and cognitive capital, help

enhance firm performance (Kim, 2005; Kim and Cannella, 2008; Kor and Sundaramurthy, 2009), while others argue that only a selected few SC components are positively associated with firm performance (Ling, 2013; Dumay et al., 2013; Inkinen, 2015, Andreeva and Garanina, 2016; Cabrilo et al., in press; Hsu and Fang, 2009). Wang et al. (2016) go even further by exploring the importance in exploring SC components individually and confirming that the better the fit of an organization's SC is to its KI, the better the operational and financial performance the company can achieve.

Problem Statement

Innovation is fast becoming one of the most important factors for an organization's success and growth. As such, cultivating innovation in company should be a critical organizational initiative. Despite that, many organizations face internal and external challenges and obstacles which hinder the progress of innovation. There have been a great number of studies that separately investigate the link between SC or KI and different performance dimensions (Lee et al., 2013; Hurmelinna-Laukkanen, 2011, Mention and Bontis, 2013) empirical evidence on how knowledge integration and social activities interact in a complementary way leading to OI performance has been scarce. Recent literature (Inkinen, 2015; Wang et al., 2016; Jorda˜o and Novas, 2017; Kianto et al., 2014) suggests that improvements of firm performance originate from the joint effect of SC and KI practices. KI can be considered as the "motor of growth and development of SC" (Jorda˜o and Novas, 2017, p. 669).

The discussion has so far revealed an important research gap, in that holistic models that combine different streams of literature, different methods and tools and include moderator or/and mediator variables to deepen our understanding of contingency and complex interrelationships are absent from the SC and OI literature. This model will be tested in the IT environment to better explain the complex configurational impact of SC and KI capability on OI performance. The Eleventh Malaysia Plan (2015), addresses building strong SC values are one of the most important pillars to drive the economy towards the desired stage. This study aims to fill this research gap by examining the effects of SC on OI. In addition, this study will also assess the moderating role of KI on the relationship between SC dimensions and OI performance. This study also aim to discover the most influential component of SC that affects OI performance.

Research Questions

- What is the effect of structural social capital on open innovation?
- What is the effect of relational social capital on open innovation?
- What is the effect of cognitive social capital on open innovation?
- What are the most influential components of social capital towards open innovation performance?
- Does knowledge integration moderate the relationship between social capital and open innovation performance?

Research Objectives

- To assess the effect of structural social capital on open innovation;
- To examine the effect of relational social capital on open innovation;
- To assess the effect of cognitive social capital on open innovation;
- To identify the most significant components of SC towards OI performance;
- To identify the moderating effect of knowledge integration on social capital and open innovation performance.

Literature Review

Underlying Theories

Social Capital Theory

SCT is a theory of relationships. It is about interaction between and among individuals for a desired outcome. The study of the SC can provide insight into the human relationships of the teams and an understanding of how these organizational capabilities. The modern development of the concept came from three key authors, Bourdieu, Coleman and Putnam with many other authors contributing to the current multidisciplinary theory. Very broadly, social capital refers to the social relationships between people that enable productive outcomes (Szreter 2000). The term SC refers to those stocks of social trust, norms, and networks that people can draw upon to solve common problems.

Many studies and researchers often stress the importance of social interactions and relationships between involved individuals as a core aspect of OI (e.g., Fleming & Waguespack, 2007). In recognition of this aspect, some authors rely upon SCT (Adler & Kwon, 2002) in order to analyse selected social aspects in OI activities. The main reason for companies to implement OI instruments is their function as enablers of exchange and interaction with external partners (Dodgson, Gann & Salter, 2006; Bercovitz & Feldman, 2007). A facet ignored by extant OI scholars is that interaction with external partners also fosters SC across organizational boundaries.

In this study, we incorporate ideas from the SCT into OI studies, an approach which may support an increased contribution of external knowledge to a firm's OI Performance.

Knowledge Integration and Social Capital Theory

Both KI and SC drive innovation performance (Kogut and Zander, 1992; Spender and Grant, 1996; Grant, 1996; Kianto et al., 2014). The importance of SC (Adler & Kwon, 2002; Walker, Kogut, & Shan, 1997; Nahapiet & Ghoshal, 1998) has been emphasized for KI (e.g., see Huang, Newell, & Pan, 2001; Pan et al., 2001) and for managing inter-organizational relationships (e.g., see Liebeskind, Amalya, Lynne, & Brewer, 1996; Kale, Singh, & Perlmutter, 2000). There is a substantial body of research on several types of relationships involving KI, SC and innovation performance (Inkinen, 2015; Inkinen, 2016; Wang et al.,2016), but there are hardly any studies that analyze all of them simultaneously. What seems to be lacking is empirical evidence of how KI and SC jointly drive OI performance. The reason for such a comparatively small number of comprehensive research models exploring causal interactions between KI, SC and innovation performance may be the complexity of their interrelationships and different roles that KI components and SC may take in creating and maintaining organizational outcomes.

Hypothesis Development

Social Capital and Open Innovation

The implementation of OI instruments promotes the development of SC (Nahapiet & Ghoshal, 1998), which is beneficial in various ways. Scholars show that SC affects other organizational performance measures such as firm survival (e.g., Pennings, Lee & Van Witteloostuijn, 1998) or financial capital accumulation (e.g., Florin, Lubatkin & Schulze, 2003). This implies that an effect above and beyond the focal OI processes can be expected. This effect highlights an even more sustainable impact of OI instruments than generally expected. While this indirect effect might be harder to quantify than direct effects of OI, it should be considered in the evaluation of OI activities.

So far, antecedents of SC have been neglected to a large extent (Payne et al., 2011). Other SC researchers explicitly point to the need for studies on SC in the research field of OI (e.g., Rost, 2011).In this context, researchers often stress the importance of social interactions and relationships between involved individuals as a core aspect of OI (e.g., Fleming &Waguespack, 2007).

This study, therefore, proposes the following hypotheses:

H1 : There is a significant effect between structural social capital and OI performance

H2: There is a significant effect between relational social capital and OI performance

H3: There is a significant effect between cognitive social capital and OI

Knowledge integration as a moderator of social capital components effects on open innovation performance.

In general, firms need to continuously generate new knowledge to innovate (Ferraris et al., 2017; Nonaka and Takeuchi, 1995). However, innovative outcomes are determined by not only the quantity and quality of new knowledge but also the speed at which the firms create new knowledge through the learning process (Senge, 1990) and develop their knowledge base (Del Giudice and Maggioni, 2014). Therefore, innovative firms are more able to create and use knowledge rapidly and effectively than those that do not (Cavusgil et al., 2003).

Although the nature of interaction between SC, KI and OI performance can be interpreted in various ways, the most intuitive explanation is that companies with greater KI capabilities are able to benefit more from their SC components in terms of innovation performance. We believe that through KI processes and tools, companies may better create new knowledge, diffuse and apply it within the company and better capitalize on SC components in the innovation process. Without KI orientation, they could underutilize these SC components, reducing the firms' innovative performance.

Based on the discussion above, we hypothesize that:

H4: KI moderates the effect between structural social capital and OI performance

H5: KI moderates the effect between relational social capital and OI performance

H6: KI moderates the effect between cognitive social capital and OI performance

Research Framework

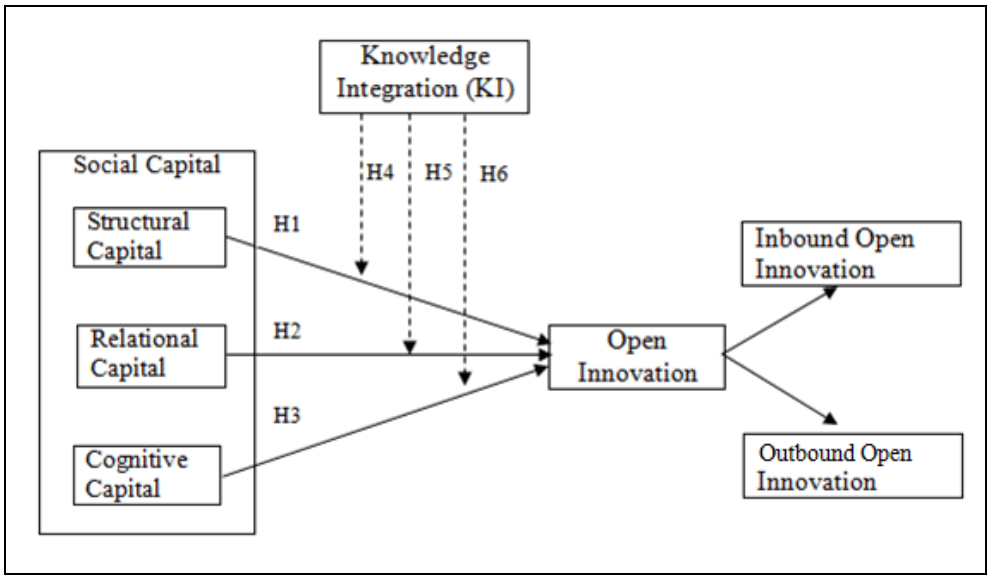

Figure 1. Research Model

Research Methodology

A quantitative survey research will be carried out among organizational teams of Multimedia Super Corridor (MSC)status companies located in Klang Valley. MSC Malaysia Status is awarded to both local and foreign companies that develop or use multimedia technologies to produce or enhance their products and services, and for process development. A knowledge-intensive firm relies heavily on its unique knowledge as an input and produces new knowledge as an output and resells it to others (Grassberger, 2004; Starbuck, 1997) as innovative products and services. For this study, team level has been chosen as the unit of analysis, given its important role towards innovation. This research study employs probability sampling method which the calculation of sample size will be using G-Power. For analysis, Partial Least Squares (PLS), a variance-based structural equation modeling (SEM) tool will be used to test the research model in view of PLS's ability to operationalize a latent construct either formatively or reflectively.

Operational Definitions

Social capital

Social capital is a set of actual and potential resources available in a network of relationships among entrepreneurs and derived from it. In the study of social capital and its importance, Nahapiet and Ghoshal (1998) represented a model including three dimensions, structural, relational, and cognitive.

Structural dimension

It includes network connections, network configuration, and adaptability of the networks among people. Generally, this aspect investigates an area in which people in the organization get connected together, the relationship patterns among the personnel are described, and the profitability of such relationships is studied (Bolino et al. 2002).

Relational dimension

It is characterized by high levels of trust, common norms, and mutual tasks and identity. Actually this aspect considers the effective relationship among colleagues who love each other, trust in each other, and take identity together (Chang & Chuang, 2011).

Cognitive dimension

This dimension is created by mutual understanding among the staff through language, and common senses and interpretations. The most important aspects of this dimension are that language, codes and common narrations develop and there will be a time that the members of the network would have common objectives (Li et al. 2014).

Knowledge integration

Knowledge integration is the process of transferring knowledge, both tacit and explicit, across organizational boundaries, sharing it with individuals and teams at the recipient site, and applying the resultant knowledge to solve problems(Grant 1996).

Open innovation

Open Innovation was defined as the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively (Henry Chesbrough, 2003).

Inbound open innovation

Inbound open innovation (outside-in process) refers to internal use of external knowledge, from partners, customers, universities and research organizations (Chesbrough et al., 2006; Gassmann et al.,2010; Mazzola et al., 2012).

Outbound open innovation

Outbound open innovation (inside-out process) refers to external exploitation in internal knowledge, through selling patents, direct licensing, or by other means(Chesbrough et al., 2006; Gassmann et al.,2010).

Potential Implications

This paper has highlighted the elements and concepts associated with SC and explained how SC and KI can contribute towards the success of OI performance. From a theoretical perspective this study will extends prior research by examining open innovation from the Social Capital Theory. This idea that SC is a determinant of an organization's open innovation has practical implications for managers of businesses in general, and specifically for managers of organizations that are trying to enhance their ability for OI. The notions that SC and KI can lead to improve OI may assist managers to support and nurture SC development much more credible. Organizations can then make a more informed decision on whether to commit a portion of their limited resources toward the creation and maintenance of social capital.

Conclusion

This paper has proposed research in order thus aims to explore and describe the notion of SC and its benefits of OI. Elements and concepts associated with KI were highlighted to determine whether and how SC can contribute towards the success and sustainability of OI performance and stimulates further research in these areas.

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