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**LINKING KNOWLEDGE SHARING, INTELLECTUAL CAPITAL
AND SOCIAL CAPITAL TO INNOVATION PERFORMANCE**

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Abstract

In today's knowledge era, intangible assets and resources are greatest wealth of firms. Furthermore, it is indisputable that knowledge is the most powerful weapon for firms. They are key sources of innovation, performance, growth, competitive advantage and even survival. Knowledge sharing has also strategic importance as it acts as a channel that allows to increase in intangible assets. Addressing these vital determinants of survival, we examine the relationships of these concepts and propose a conceptual model. This conceptual study makes four contributions to literature. First, the proposed model enlightens the relationships between knowledge sharing, intellectual capital and innovation performance. Second, the moderating effect of social capital on the relationship between knowledge sharing and innovation performance and the relationship between intellectual capital and innovation performance is assessed. Third, this study integrates different branches of the management literature such as knowledge management and innovation management. Finally, this research provides a critical conceptual insight for future researches.

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Keywords: Knowledge sharing; Intellectual capital; Innovation performance; Social capital.

1. Introduction

Today, the market and even world is globalized. Firms face the difficult competition conditions, demanding consumers and continuous changes (Brooks, et al., 2010). Innovation has critical role for sustainable competitive advantage (Soliman, 2013). In addition firms' resources especially the intangible

ones having the decisive role for locating in the market are of great importance to gain competitive advantage (Barney, 1991). These intangible resources such as knowledge have also substantial impact on innovation (Nanggong and Indarti, 2016).

The concepts social capital and intellectual capital have attracted much interest in the literature, as intangible assets and resources are the most important capital for companies in today's world. Knowledge sharing has also increased attention in the literature because of its role in knowledge accumulation and thus increasing intangible resources of firm. Although there are many studies which revealed their importance in literature as noted, there is not comprehensive study to clarify the relationships of these concepts. Especially, there is a need to explain how the impact on innovation performance of knowledge sharing and intellectual capital changes. This moderating affect is neglected in previous researches.

This study aims to comprehend the relationships among knowledge sharing, intellectual capital and innovation performance better. Additionally addressing to the gap, another goal of this study is to contribute to the literature by providing a comprehensive understanding of how the impact on innovation performance of knowledge sharing and intellectual capital changes according to levels of social capital. We conducted an extensive literature search primarily to evaluate these relationships and proposed a theoretical model based on this review. Consequently, a summary of conceptual model and recommendations to next studies are presented.

2. Background

2.1. Knowledge Sharing

Knowledge is not a concept that can be easily explained as there is no precise consensus on what it is. Sometimes the terms information and knowledge are used interchangeably. Indeed information is a means mediating formation of knowledge (Nonaka, 1994). On the other hand, knowledge is defined as combination of experience, values, information, professional's perception that enable assessing and integration of new information (Davenport and Prusak, 1998). There are two kinds of knowledge: (1) tacit knowledge which is difficult to share because of its subjective nature such as riding a bike and (2) explicit knowledge which is shared easily in many forms such as user guides (Nonaka and Konno, 1998). When it is shared, it may create a value for organization (Tsai et al., 2014). Furthermore unlike most other sources, knowledge multiplies if it is shared. Knowledge sharing is the operations to transfer knowledge (Jackson et al., 2006). Not only knowledge sharing is an operation, but also it may be either a behaviour or a process (Liao et al., 2007). Knowledge sharing which enables to solve problems, learn and not waste resources (Jackson et al., 2003) can be described as also exchange knowledge and know-how (Cummings, 2004). The term is split into two processes: knowledge donating and knowledge collecting. Knowledge donating is defined as being readiness to effectively give own knowledge and knowledge collecting is defined as conferring with others to share their knowledge. (Van Den Hooff, and De Ridder, 2004). Therefore it can be said that knowledge sharing is a multi-directional concept (Akram et al., 2016).

Knowledge sharing is a process to improve organizational knowledge by leveraging individual knowledge and this knowledge transfer process is reciprocally (Van Den Hooff, and De Ridder, 2004). According to Akram et al. (2016), knowledge sharing which can be sketched as a mechanism contributes

organizational knowledge base by enriching existing knowledge. It is also seen as a strategy that make it possible to increase productivity, outperform competitors, minimize employee turnover, improve human capital and increase innovativeness and creativity (Razak et al., 2016).

2.2. Intellectual Capital

Intellectual capital is precious resource for firms to gain organizational advantage (Nahapiet and Ghoshal, 1998) and increases the firm value through knowledge (Petty and Guthrie, 2000). Because of these, there have been a growing number of intellectual capital studies and there are many definitions. First the concept of intellectual capital introduced by Kenneth Galbraith in 1969 (Huang and Jim Wu, 2010), is defined as an aggregate mental capacity that consists of elements such as knowledge and experience which are resource for formation of affluence. (Stewart, 1997). Similar characteristics are mentioned in both this broadly used definition and the others: (1) invisible, (2) related to both knowledge and experiences of customers and employees, (3) provide many opportunities for future successes (Lönnqvist, and Mettänen, 2002). All of the definitions can be summarized as, intellectual capital is an important asset which is utilized as a part of generation to produce revenue, provides competitive advantage for corporation, comprises of smart products and intelligence of both human and machine and has also an importance economically. (Vlasenko and Vasylenko, 2015).

Intellectual capital is classified in previous studies. Bontis (1998) and Stewart (1997) who are the pioneers, classify intellectual capital in three components. According to generally accepted categorization of intellectual capital, subcategories of intellectual capital are human capital, relational capital and structural capital (Wang, et al., 2014). Human capital consists of employees' skills, knowledge, insight, creativity and experience (Dias et al., 2014). Because of its role in developing the available firm's assets, it is an important resource of firms (Pasban and Nojedeh, 2016). Relational capital is about relationships with external stakeholders and it provides loyalty and market share (Dias et al., 2014). The alliances and relationships enable firms to transfer knowledge and technology, cut to cost and risk because of sharing with these stakeholders (Lenart-Gansiniec, 2016). Structural capital consists of knowledge and information systems of an organization (Dias et al., 2014). It helps employees to maximize their intellectual performance and also enhances the organizational performance (Bontis, 1998).

2.3. Social Capital

Social capital have attracted interest greatly by the professionals in many discipline such as sociology, policy, economy (Adler and Kwon, 2002). It has been also searched greatly in field of management. There are many definitions of social capital. Because social capital enables people to act in unison to reach common goals and it refers to social connections by-products of networks, norms and trust (Putnam, 1995). The term is intangible asset effecting cooperation's circumstances (Eklinder-Frick et al., 2014). The elements of social capital are community features, norms, unity, regular sociability, linkages, willingness and confidence (Narayanan and Cassidy, 2001). Nahapiet and Ghoshal (1998) defined the social capital as entirety of resources which is accessible through or acquired through the owned network. Social capital can also be explained shortly as "instantiated informal norm" (Fukuyama,

2001) and basic benefits of the term as a “goodwill” are (1) information, (2) impact, check, and power, (3) solidarity (Adler and Kwon, 2002).

The prominent determinants of social capital are solidarity, empowerment and sense of belonging, whereas important outcomes of social capital are governance, empowerment, social cohesion, safety and security (Narayanan and Cassidy, 2001). Nahapiet and Ghoshal (1998) noticed that social capital is a multidimensional concept and classified the term in three dimensions: relational social capital, cognitive social capital and structural social capital. Structural dimension of social capital is about general structure of relationships, relational dimension of social capital is about nature of relationships and cognitive dimension of social capital is about common language and perspective in a network (Chang and Chuang, 2011).

3. Hypothesis Development

3.1. Knowledge Sharing and Intellectual Capital

Knowledge sharing causes to result in organizational advantages such as advanced strategic planning, adjustment to changes rapidly, advanced decision making and rapid procedure of supply chain management (Warkentin et al., 2001). So it is an important subject that many researchers have worked on. Knowledge sharing is a part of knowledge management and its remarkable benefit is strengthening intellectual capital (Zhang, et al., 2005). Knowledge sharing improves organizational knowledge by leveraging individual knowledge (Van Den Hooff, and De Ridder, 2004). Thus experiences, information and know-how will be shared by employees and organizations and total knowledge will increase for both sides. It offers organizations a lot of opportunities, which in turn improves intellectual capital (Wang, et al., 2014). Hence, it is clear that the concepts which are knowledge sharing and intellectual capital, are intertwined. Moreover Akhavan and Khosravian (2016) showed in an empirical study that knowledge sharing enhances intellectual capital. Following these statements, we propose that;

Proposition 1 (P1): Knowledge sharing is positively related to intellectual capital.

3.2. Knowledge Sharing, Intellectual Capital and Innovation Performance

Innovation is vital for competitive advantage, whereas knowledge is vital resource of innovation (Leonard and Sensiper, 1998). Wang and Wang (2012) introduced that knowledge, capabilities and experiences of employees have great importance for innovation. Firms need to knowledge explicit or implicit to improve own innovation performance and they must share their knowledge to acquire external knowledge especially (Ritala et al., 2015). This is evident that knowledge sharing is possible mutually to gain knowledge enough to reach goals. Innovation is made by using knowledge. It can be said that knowledge is the indispensable input of innovation process. Knowledge sharing is related to rapid completion of developments, decline in production cost, innovative capabilities and competencies, increase in sales and in revenues and also firm performance (Kharabsheh, et al., 2016). Wang and Wang (2012) investigated the effect of knowledge sharing on innovation speed and also its quality. Prior studies shows that knowledge sharing enhances innovation and innovation performance (Kamaşak and Bulutlar,

2010; Wang and Wang, 2012; Zohoori et al., 2013; Qammach, 2016). Following these statements, we propose that;

Proposition 2 (P2): Knowledge sharing is positively related to innovation performance.

Intangible assets of firms such as intellectual capital which is hidden component of firm's wealth, are essential resources to gain competitive advantage (Todericiu, and Stăniț, 2015). Hsu and Fang (2009) explained the intellectual capital as intellectual property to gain competitive advantage, reach firm's goals and create value. The strategic importance of the intellectual capital has increased, as the critical capital of firms has changed from tangible capital to intangible capital. Hence, there are many studies to explore the all aspects of intellectual capital. It is also substantial for firms because of its role in formation of distinctive capabilities such as innovative capabilities (Zerenler, et al., 2008). Human capital which is one of dimension of intellectual capital is about skills, innovativeness and knowledge of employees (Dias et al., 2014). Each of them is a threshold matter in both formation of the idea of innovation and throughout the innovation process. Structural capital is a knowledge which helps to elucidate and assimilate information (Gogan et al., 2015). Thus it facilitates the innovation development. Relational capital allows firms to transfer and acquire knowledge in their stakeholders due to providing trust and confidence (Lenart-Gansiniec, 2016). Moreover intellectual capital is seen as a determinant of innovation in many research (Užienė, 2015). So stronger intellectual capital will leads to stronger innovation performance. Prior studies shows empirically that intellectual capital enhances innovation and innovation performance (Zerenler et al., 2008; Santos-Rodrigues, et al., 2013; Han and Li, 2015; Cassol, et al., 2016). Following these statements, we propose that;

Proposition 3 (P3): Intellectual capital is positively related to innovation performance.

3.3. Moderating Effect of Social Capital

Ties and trust which are channels for knowledge flow are important aspects of social capital. These aspects lead to increasing performance, enhancing innovativeness and growing through knowledge exchange (Maurer, et al., 2011). Strong ties and trust among employees provide suitable atmosphere and circumstances to develop innovation (Xerri ve Brunetto, 2011). In this way the acquired knowledge can be a resource for innovation. Because if there isn't innovative environment in the firm, acquired knowledge will not be utilized and so it will be wasted. Shared language allows for a better understanding and use of the information obtained. According to this, it has a role in the effect of knowledge sharing on innovation performance (Nahapiet and Ghoshal, 1998). Furthermore some outcomes of social capital are social cohesion, safety and security (Narayanan and Cassidy, 2001). They also facilitate to utilize knowledge for innovation development and make it more effective. In addition, Jian and Wang (2013) revealed that the relationship quality moderates the relationship between knowledge sharing and service innovation performance. Following these statements, we propose that;

Proposition 4 (P4): Social capital positively moderates the relationship between knowledge sharing and innovation performance.

Firms can have distinctive capabilities and develop innovation as an outcome of their intellectual capital (Zerenler et al., 2008). So it is undoubtedly that intellectual capital influences innovation and innovation performance significantly. Narayanan and Cassidy (2001) remarked the components of social capital which are trust, connections, volunteerism, sociability, and norms. They serve as a catalyst in the effects of human capital, relational capital and structural capital on innovation. Additionally, social capital viewed as a means to promote empowerment (Narayanan and Cassidy, 2001). Empowerment is valuable instrument to advance employees and thus it raises effectiveness (Ghazizade et al., 2014). So it has a role especially in the effect of human capital on innovation performance. Heterogeneity in intellectual capital is beneficial for innovation and this variety on intellectual capital is an output of social capital. This variety enhances the effect of intellectual capital on innovation performance (Wu et al., 2008). Consequently, social capital has a moderating effect on the relationships between these concepts. Following these statements, we propose that;

Proposition 5 (P5): Social capital positively moderates the relationship between intellectual capital and innovation performance.

Figure 1 summarizes the relationships between knowledge sharing, intellectual capital and innovation performance and also the moderating effect of social capital.

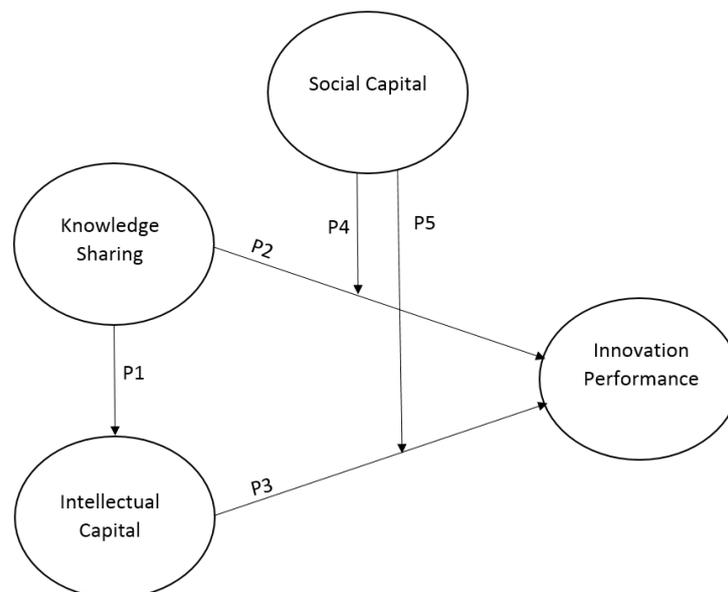


Figure 01. Proposed research model

4. Conclusion

This study contributes to literature by proposing a conceptual framework which offers a better understanding of the effects of knowledge sharing and intellectual capital on innovation performance and the role of social capital on these relationships. In a knowledge based economy, intangible assets of firms such as knowledge are the irreplaceable, unique and most important sources of firms. They are also the main drivers of innovation performance. So we focused on brightening conceptual insight on these relationships.

This study provides to look at the relationships among knowledge sharing, intellectual capital, social capital and innovation performance from a broad perspective. The theoretical model proposed under the light of previous studies has once again shown that one of the exact consequences of knowledge sharing is to increase intellectual capital which are both antecedents of innovation performance. The importance of intellectual capital and knowledge sharing which are predictors of innovation performance differs for social capital which is introduced as moderating variable. In conclusion, the relationship between knowledge sharing and innovation performance and the relationship between intellectual capital and innovation performance are stronger when social capital is high.

This study elucidates the dark side of the relations of these concepts, in this way sheds light on future researches. In further researches, proposed model can be tested empirically. Moreover, researchers can study to understand the relationship between other intangible assets such as customer capital, culture, capabilities, competencies and our model. Because there isn't enough study in the literature despite the vital importance of intangible assets for firms.

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