

## **KNOWLEDGE SHARING, ABSORPTIVE CAPACITY AND ORGANIZATIONAL PERFORMANCE**

Nodari, Felipe, Pontifical Catholic University of Rio Grande do Sul, Av. Ipiranga 6681,  
90619-900 Porto Alegre-RS, Brazil, fnodari@gmail.com

Oliveira, Mírian, Pontifical Catholic University of Rio Grande do Sul, Av. Ipiranga 6681,  
90619-900 Porto Alegre-RS, Brazil, miriano@puers.br

Maçada, Antonio C. G., Federal University of Rio Grande do Sul, Rua Washington Luis 855,  
90010-460 Porto Alegre-RS, Brazil, acgmacada@ea.ufrgs.br

### **Abstract**

*Knowledge is currently considered a major organizational asset as it enables the achievement of competitive advantage. Sharing knowledge can help an organization achieve better organizational performance through the implementation of new ideas, processes, products and/or services. This paper studies the relationship between knowledge sharing, composed of two processes (donation and collection ) and two dimensions (intra and inter) organizational performance. Absorptive capacity is seen as moderating this relationship, due to its influence on the identification and use of relevant knowledge within the organization. The aim of this paper is to propose a research model that links knowledge sharing, absorptive capacity and organizational performance.*

*Keywords: Knowledge Sharing, Organizational Performance, Knowledge Management, Absorptive Capacity.*

## **1 Introduction**

Knowledge is considered one of the most important drivers of the current economy; it is continuously generated throughout an organization, and is currently seen as one of the most important assets for any organization (Grant, 1996). The main motivation for organizations to manage knowledge is to improve business performance (Choi and Lee, 2003), because, for many organizations, achieving better performance not only depends on the successful deployment of tangible assets and natural resources, but also the effective management of knowledge (Mills and Smith, 2011). According to Nonaka and Takeuchi (2008), knowledge is defined as justified true belief, being specific to the context to which it is related. Knowledge is also linked to human action, which adds the need for a purpose to this concept. It is epistemologically classified in two dimensions: tacit and explicit (Nonaka and Takeuchi, 2008). Explicit knowledge includes facts and information that can be expressed in numbers, words or articulated in the form of data, while the tacit form contains procedural knowledge, insights and intuitions (Chou, 2005), being relatively more difficult to share than the explicit form, as it is socially embedded and based on personal experiences (Nonaka and Takeuchi, 2008). Alavi and Leidner (2001) point out the existence of an inextricable link between tacit and explicit knowledge, which means that only individuals who share the necessary level of knowledge can truly exchange them with each other. Thus, tacit knowledge is required to understand the explicit form. Knowledge sharing is considered one of the most important processes in knowledge management, allowing organizations to enhance their performance by increasing the collective value of knowledge assets (Velmurugan, Kogilah and Devinaga, 2010). For an organization, successful knowledge sharing should lead to improved organizational performance, resulting in competitive advantage (Lee, 2001; Chen et al., 2006; Cheng, 2011), since it facilitates the ability to create new knowledge, enabling organizations to respond quickly and effectively to a changing environment (Argote and Ingram, 2000). However, knowledge management initiatives have produced varied results, because there are problems with knowledge sharing processes that have triggered doubts about their real effect on organizational performance (Ford and Staples, 2010). Companies in emerging countries such as Brazil, India and China are becoming more sophisticated competitors, and investing more in management tools, including knowledge management. Especially in Latin America, companies use more management tools than in any other region (Bain & Company, 2011). Moreover, few studies have explored the knowledge sharing processes in Brazilian companies. In order to fill this gap, this paper aims to propose a research model that links knowledge sharing and organizational performance in Brazilian companies.

## **2 Knowledge Sharing and Organizational Performance**

This section consists of an analysis of the elements by which the process of knowledge sharing and organizational performance can be linked.

### **2.1 The knowledge-based view of the firm**

The perspective of the knowledge-based view of the firm (KBV) argues that firms are organized to accomplish two distinct goals: generate knowledge and apply knowledge (Chou, 2005). Thus, according to the KBV, knowledge is the most important strategic resource (Grant, 1996; Hooff and Ridder, 2004), since services rendered by tangible resources depend on the way they are combined and applied, which is, in turn, a function of the knowledge and skills held by the firm. These skills are incorporated into several entities, such as the organizational culture, work routines, information systems, documents, as well as in individuals (Grant, 1996; Alavi and Leidner, 2001). According to Grant (1996), the presence of specific features, such as absorptive capacity, is necessary so that knowledge can generate value in an organization, thus impacting positively on performance. Absorptive capacity is defined as a cognitive structure that recognizes the value of knowledge,

assimilating it and applying it (Cohen and Levinthal, 1990). This capacity is related to the ability to absorb knowledge from the recipient in a sharing process, which is facilitated by the existence of a common language between the transmitter and receiver (Grant, 1996).

## **2.2 Knowledge sharing**

Knowledge sharing is the process by which a unit is affected by the knowledge or experience of another unit (Argote and Ingram, 2000), which may result in the joint creation, by those individuals, of new knowledge, through sharing in both the tacit and explicit dimensions (Hooff and Ridder, 2004). This process is characterized by formal and informal collaboration, involving the dissemination of knowledge between people, groups or organizations (Ford and Staples, 2010). Organizational knowledge sharing occurs when members of the organization share information related to organizational activities (Tohidinia and Mosakhani, 2010), including the dissemination of knowledge among team members as well as the incorporation of that coming from the external environment (Velmurugan, Kogilah and Devinaga, 2010). This definition of knowledge sharing implies the existence of two distinct processes that are different in nature and are influenced by different factors (Hooff and Ridder, 2004). Thus, knowledge sharing is composed of two processes, knowledge donation and knowledge collection (Luu, 2012; Lin, 2007; Vries, Hooff and Ridder, 2006; Hooff and Ridder, 2004). Knowledge donation is the communication of knowledge, based on an individual's desire to transfer their intellectual capital, while knowledge collection can be represented by the attempt to persuade others to share what they know (Hooff and Ridder, 2004). Knowledge sharing can also enable the transformation of collective individual knowledge into organizational knowledge. Knowledge sharing in organizations involves sharing between individuals, teams and organizations, driving the process of expanding knowledge, which moves from the individual to the group, and between intra and inter-organizational levels (Nonaka and Takeuchi, 2008). Intra-organizational knowledge sharing is the voluntary release of the acquired skills and experiences of an individual to the rest of the organization (Davenport, Long and Beers, 1998), and consists of the beliefs and routines for this disclosure between the units of an organization (Cavusgil, Calantone and Zhao, 2003). Organizational knowledge can be seen from different perspectives (that of the individual, the team and the organization) (Lin, 2007). Knowledge sharing between individuals can be measured through the knowledge donation and collection processes. Donation is the communication of intellectual capital from one individual to another, while collection is defined as consulting the intellectual capital of another individual, leading that person to share their intellectual capital (Hooff and Ridder, 2004; Vries, Hooff and Ridder, 2006, Lin, 2007; Tohidinia and Mosakhani, 2010; Luu, 2012). Organizational knowledge is created not only within an organization, but can also be acquired externally (Lee, 2001). Inter-organizational knowledge sharing is the process of mutual learning between organizations. This process can be considered as being composed of learning between individuals from different companies and of the conversion of individual learning into organizational learning through the internal mechanisms of the organization (Chen et al., 2006). Measuring the process of knowledge sharing requires measuring the activities related to this process, including the tacit and explicit forms. These activities are represented by the sharing of knowledge in its explicit form, such as through models, documents and procedures, in addition to the knowledge gained from sources outside the inter-organizational relationship in question, such as newspapers, magazines and other media sources. The sharing of tacit knowledge, such as know-how, personal interactions and participation in group training sessions is also mapped (Lee, 2001). According to Lee (2001), inter-organizational knowledge sharing also refers to sharing activities or knowledge dissemination between the provider and receiver. Thus, the differentiation between the collection and dissemination processes proposed by Hooff and Ridder (2004) and by Vries, Hooff and Ridder (2006) will be applied to the questions proposed by Lee (2001) and validated by Chen et al. (2006) and Cheng (2011). Hence, the questions contained in the survey instrument have been adapted to take into consideration the donation and collection processes in intra and inter-organizational knowledge sharing.

## **2.3 Organizational Performance**

Several types of knowledge contribute directly to the achievement of competitive advantage and improved financial performance, for example, knowledge about the products and customers. The knowledge base of a company is also the basis of its performance. Thus, one can assume that companies that have capabilities associated with knowledge will succeed in terms of their corporate performance. Therefore, there is a strong relationship between the skills related to knowledge and corporate performance (Tseng, 2010). Due to the diversity of knowledge-related skills, most companies will have different levels and combinations of the features that make up these capabilities. The contribution that each resource makes to organizational performance is therefore variable among companies, and it is this combination that allows benefits such as competitive advantage and, consequently, enhanced organizational performance to be obtained (Mills and Smith, 2011). Choi and Lee (2003), in their study into the effect of corporate styles of knowledge management on organizational performance, adopt the measure developed by Drew (1993) and validated by Deshpande, Farley and Webster (1997). This consists of assessing the items related to the production output of an organization, such as overall success, market share, growth rate, profitability, innovation and firm size, in comparison with its main competitors. These measures have been shown to be effective when comparing business units and industries (Choi and Lee, 2003), with the importance of each measure being relative to each sector surveyed (Drew, 1993). In the present study, the model proposed by Drew (1993) will be used in order to enable comparison of business units and industries (Choi and Lee, 2003).

## **3 Research model and hypotheses**

The process of knowledge sharing has been studied in the intra and inter-organizational contexts (Nonaka and Takeuchi, 2008; Lee, 2001; Ford and Staples, 2010; Teng and Song, 2011). For Nonaka and Takeuchi (2008), Lee (2001) and Lin (2007), inter-organizational knowledge sharing is facilitated by the development of a culture of sharing among individuals within the organization. Thus, we propose the following hypothesis: **H1** - Intra-organizational knowledge sharing is positively related to inter-organizational knowledge sharing.

Intra-organizational knowledge sharing is measured using two variables representing the processes of donating and collecting knowledge (Hooff and Ridder, 2004; Vries, Hooff and Ridder, 2006; Lin, 2007; Tohidinia and Mosakhani, 2010; Luu, 2012). Inter-organizational knowledge sharing is measured through the activities related to sharing between organizations (Lee, 2001; Chen et.al., 2006; Cheng, 2011). According to Lee (2001), the concepts of knowledge donation and collection (Hooff and Ridder, 2004) may also be applicable to this dimension.

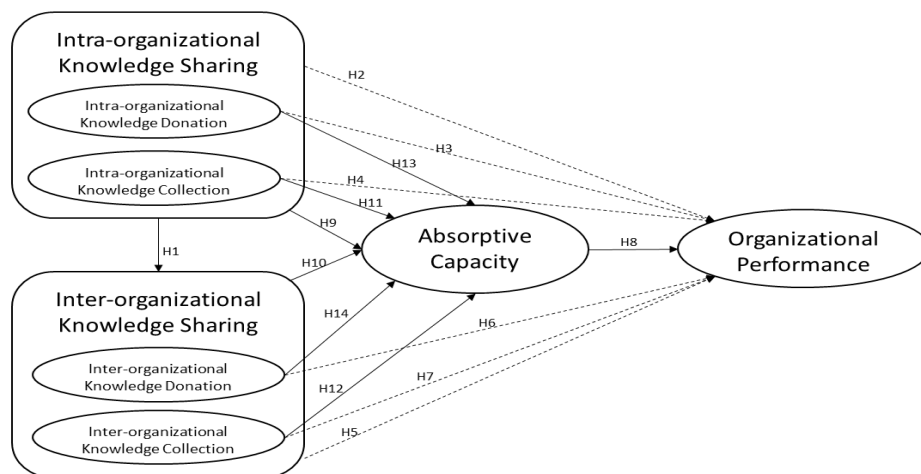
Alavi and Leidner (2001) argue that knowledge-based resources are usually difficult to imitate, and so constitute a source of long-term competitive advantage. However, the advantage would not be a result of the company's existing knowledge alone, but of the company's ability to apply and share that knowledge to create new knowledge. Kumar and Ganesh (2011) show the impact of knowledge sharing on organizational performance, due to its impact on the efficiency of product development. Mills and Smith (2011) indicate the relationship between the knowledge acquisition processes, including sharing, and organizational performance. Thus, in relation to intra-organizational knowledge sharing, the following hypotheses are formulated: **H2** - The process of intra-organizational knowledge sharing is positively related to organizational performance; **H3** - The existence of intra-organizational knowledge donation processes is positively related to organizational performance; **H4** - The existence of intra-organizational knowledge collection processes is positively related to organizational performance.

The sharing of knowledge between organizations, associated with a long-term relationship, contributes to increased survival of the participating companies, by reducing the costs of coordinating activities,

facilitating the refinement of existing products and services and improving the performance of routine tasks (Im and Rai, 2008). The purpose of knowledge sharing is to promote interorganizational competitive advantage by sharing benefits with other companies (Lin, 2008). The following hypotheses are proposed: **H5** - The process of inter-organizational knowledge sharing is positively related to organizational performance; **H6** - The existence of inter-organizational knowledge donation processes is positively related to organizational performance; **H7** - The existence of inter-organizational knowledge collection processes is positively related to organizational performance. The specific characteristics of an organization, among which can be listed absorptive capacity (Grant, 1996), are relevant to the propensity of the knowledge to generate value in that organization and so impact on performance.

According to Balogun and Jenkins (2003), an organization with greater absorptive capacity has a greater ability to use the knowledge collected. For Yoo, Vonderembse and Ragu-Nathan (2011), absorptive capacity enables the identification of relevant knowledge, the flexibility to integrate a wide variety of knowledge and the creation of innovative ways of thinking. Externally generated knowledge does not benefit all firms equally, and these benefits are determined, in part by the absorptive capacity of the firm (Wang and Han, 2011). Thus, the following proposed hypotheses are: H8 - Absorptive capacity is positively related to organizational performance; H9 - The process of intra-organizational knowledge sharing is positively related to absorptive capacity; H10 - The process of inter-organizational knowledge sharing is positively related to absorptive capacity; H11 - the process of collecting intra-organizational knowledge is positively related to absorptive capacity; H12 - the process of collecting inter-organizational knowledge is positively related to absorptive capacity; H13 - the process of donating intra-organizational knowledge is positively related to absorptive capacity; H14 - the process of donating inter-organizational knowledge is positively related to absorptive capacity.

For Tanriverdi (2005), larger firms have a greater potential to exploit knowledge-based strategies. With regard to knowledge sharing, larger firms are more likely to maintain a greater number of knowledge sharing interfaces, and also to share a greater diversity of knowledge, besides the fact that this process requires a significant amount of resources (Wagner and Bukó, 2005). Thus, the sector and the size of the organization are proposed as control variables. The proposed research model is shown in Figure 1.



*Figure 1. Research model.*

In the next step of this research, the hypotheses identified in this model will be tested, considering the context of Brazilian companies.

## **4 Conclusion**

In this study, based on a review of the literature, a research model was developed that relates the intra-organizational and inter-organizational knowledge sharing processes to absorptive capacity and organizational performance. The aim of this research was to elucidate the variables that have an impact on organizational performance and also develop an instrument that can be used to measure the relationship between those variables, thus providing both an academic and managerial contribution. By completing the proposed research, it is hoped to contribute towards empirically demonstrating the relationship between knowledge sharing, absorptive capacity and organizational performance.

The survey method will be adopted in the following stages of this research. In the data analysis, Structural Equation Modeling (SEM), in which the main function is the specification and estimation of linear models of the relationships between variables (KLINE, 1998), will be used. A scale developed by Hoof and Ridder (2004) will be used for the intra-organizational knowledge sharing. For the inter-organizational knowledge sharing, the questions proposed by Lee (2001) will be adapted in order to contemplate the concepts of collection and donation within knowledge sharing. For absorptive capacity, the scale proposed by Szulanski (1996) will be used, while the instrument developed by Drew (1993) will be employed to measure organizational performance. The sample will consist of 240 randomly selected Brazilian companies, of varying sizes, access to local and international markets, and from sectors of industry, commerce and services, so as to ensure the representativeness of the population.

## **Acknowledgements**

The authors are grateful for the support received from CNPq (*Conselho Nacional de Desenvolvimento Científico e Tecnológico*) and CAPES (*Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*).

## **References**

- Alavi, M. and Leidner, D. (2001). Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly*, 25, (1), 107-136.
- Argote, L. and Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behavior and Human Decision Processes*, 82 (1), 150-169.
- Balogun, J. and Jenkins, M. (2003). Re-conceiving change management: A knowledge-based perspective. *European Management Journal*, London, United States, 21 (2), 247-257.
- Bain & Company, Management Tools & Trends, 2011. [cited 2013 March 15]; Available from: <http://www.bain.com/publications/business-insights/management-tools-and-trends-2011.aspx>.
- Cavusgil, S.T., Calantone, R.J. and Zhao, Y. (2003). Tacit knowledge transfer and firm innovation capability. *The Journal of Business & Industrial Marketing*, 18 (1), 6-21.
- Chen, S., Duan, Y., Edwards, J. S. and Lehaney, B. (2006). Toward understanding inter-organizational knowledge transfer needs in SMEs: insight from a UK investigation. *Journal of Knowledge Management*, 10 (3), 6-23.
- Cheng, J. (2011). Inter-organizational relationships and knowledge sharing in green supply chains- Moderating by relational benefits and guanxi. *Transportation Review. Part E: Logistics and Transportation Review*, 47 (6), 837-849.
- Choi, B. and Lee, H. (2003). An empirical investigation of KM styles and their effect on corporate performance. *Information & Management*, 40 (5), 403-417.
- Chou, S. (2005) Knowledge creation: absorptive capacity, organizational mechanisms, and knowledge storage/retrieval capabilities. *Journal of Information Science*, 31 (6), 453-465.
- Cohen, W.M. and Levinthal, D.A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35 (1), 128-152.

- Davenport, T., De Long, D. and Beers, M. (1998). Successful knowledge management projects. *MIT Sloan Management Review*, 39 (2), 43-57.
- Deshpande, R., Farley, J.U. and Webster, F.E. (1993). Corporate culture, customer orientation, and innovativeness. *Journal of Marketing*, 57 (1), 23-23.
- Drew, S.A.W. (1997). From knowledge to action: The impact of benchmarking on organizational performance. *Long range planning*, 30 (3), 427-441.
- Ford, D. P. and Staples, (2010). S. Are full and partial knowledge sharing the same? *Journal of Knowledge Management*, 14 (3), 394-409.
- Grant, R.M. (1996). Toward a Knowledge-Based Theory of the Firm. *Strategic Management Journal* (1986-1998), 17 (Winter Special Issue), 109-122.
- Hooff, B.V.D. and Ridder, J.D. (2004). Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of Knowledge Management*, 8 (6), 117-130.
- Im, G. and Rai, A. (2008). Knowledge sharing ambidexterity in long-term interorganizational relationships. *Management Science*, 54 (7), 1281-1296.
- Kline, R. B. (1998) *Principles and practice of structural equation modeling*. New York: Guilford.
- Kumar, A. and Ganesh, L.S. (2011). Inter-individual knowledge transfer and performance in product development. *The Learning Organization*, 18 (3), 224-238.
- Lee, J.N. (2001). The impact of knowledge sharing, organizational capability and partnership quality on IS outsourcing success. *Information & Management*, 38 (5), 323-335.
- Lin, H. (2007). Knowledge sharing and firm innovation capability: an empirical study. *International Journal of Manpower*, 28 (3), 315-332.
- Lin, W. (2008). The effect of knowledge sharing model. *Expert Systems with Applications*, 34 (2), 1508-1521.
- Luu, T.T. (2012). Behind knowledge transfer. *Management Decision*, 50 (3), 459-478.
- Mills, A.M.; Smith, T.A. (2011) Knowledge management and organizational performance: a decomposed view. *Journal of Knowledge Management*, 15 (1), 156-171.
- Nonaka, I. and Takeuchi, I. (2008). Teoria da criação do conhecimento organizacional. In: Takeuchi, H. and Nonaka, I. (Org.). *Gestão do conhecimento*. Porto Alegre: Bookman, 54-90.
- Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal*, 17 (Winter Special Issue), 27-43.
- Tanriverdi, H. (2005). Information technology relatedness, knowledge management capability, and performance of multibusiness firms. *MIS Quarterly*, 29 (2), 311-334.
- Teng, J.T.C. and Song, S. (2011). An exploratory examination of knowledge-sharing behaviors: solicited and voluntary. *Journal of Knowledge Management*, 15 (1), 104-117.
- Tseng, S.M. (2010). The correlation between organizational culture and knowledge conversion on corporate performance. *Journal of Knowledge Management*, 14 (2), 269-284.
- Tohidinia, Z. and Mosakhani, M. (2010). Knowledge sharing behaviour and its predictors. *Industrial Management + Data Systems*, 110 (4), 611-631.
- Velmurugan, M., Kogilah, N. and Devinaga, R. (2010). Knowledge sharing in virtual teams in malaysia: Its benefits and barriers. *Journal of Information & Knowledge Management*, 9 (2), 145-159.
- Vries, R.E., Hooff, B.V.D. and Ridder, J.A. (2006). Explaining knowledge sharing. The role of team communication styles, job satisfaction, and performance beliefs. *Communication Research*, 33 (2), 115-135.
- Wang, C. and Han, Y. (2011). Linking properties of knowledge with innovation performance: the moderate role of absorptive capacity. *Journal of Knowledge Management*, 15 (2), 802-819.
- Wagner, S.M. and Bukó, C. (2005). An empirical investigation of knowledge-sharing in networks. *Journal of Supply Chain Management*, 41 (4), 17-31.
- Yoo, D.K., Vonderembse, M.A. and Ragu-Nathan, T. (2011). Knowledge quality: antecedents and consequence in project teams. *Journal of Knowledge Management*, 15 (2), 329-343.