
Absorptive capacity as a strategy for innovation in service microenterprises under crisis environment

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Abstract

Objective: This article aims to study the process of innovation in national microenterprises of services in crisis environments.

Literary Reference: Absorptive capacity is a mechanism that enables companies from different industry sectors, such as services, to develop innovative services through the recognition of the value of identified opportunities and assimilation of external knowledge by the company. It was observed the lack of literature on innovation in service microenterprises, both national and foreign enterprises.

Methodological procedures: The research method adopted is exploratory qualitative research through multiple case studies, which allowed to deepen the understanding of the innovation process in microenterprises. Semi-structured interviews were conducted with four microenterprises chosen based on the dimensions prior knowledge (antecedents) and external knowledge according to the maximum variation criterion.

Result: The result suggests that the domestic laundry microenterprises can develop absorptive capacity concentrating their efforts in the interorganizational relationships focused on suppliers and clients and in the intraorganizational ones centered on previous knowledge and sharing knowledge.

Keywords: absorptive capacity, innovation processes, microenterprises.

Capacidade absorptiva como estratégia de inovação em microentregadores de serviços em ambiente de crise

Resumo

Objetivo: Este artigo tem como objetivo estudar o processo de inovação em microempresas nacionais de serviços em ambientes de crise.

Referência literária: A capacidade de absorção é um mecanismo que permite que empresas de diferentes setores da indústria, como serviços, desenvolvam serviços inovadores por meio do reconhecimento do valor das oportunidades identificadas e da assimilação de conhecimentos externos pela empresa. Observou-se a falta de literatura sobre inovação em microempresas de serviços, tanto nacionais quanto estrangeiras.

Procedimentos metodológicos: O método de pesquisa adotado é a pesquisa qualitativa exploratória, por meio de múltiplos estudos de caso, o que permitiu aprofundar o entendimento do processo de inovação em microempresas. Foram realizadas entrevistas semiestruturadas com quatro microempresas escolhidas com base nas dimensões conhecimento prévio (antecedentes) e conhecimento externo de acordo com o critério de variação máxima.

Resultados: O resultado sugere que as microempresas domésticas de lavanderia podem desenvolver capacidade de absorção concentrando seus esforços nas relações interorganizacionais voltadas para fornecedores e clientes e nas intraorganizacionais centradas no conhecimento anterior e no compartilhamento de conhecimento.

Palavras-chave: capacidade de absorção, processos de inovação, microempresas

Absorción de la capacidad como estrategia para la innovación en los servicios de micro entrega de crisis.

Resumen

Objetivo: Este artículo tiene como objetivo estudiar el proceso de innovación en microempresas nacionales de servicios en entornos de crisis.

Referencia literaria: la capacidad de absorción es un mecanismo que permite a las empresas de diferentes sectores industriales, como los servicios, desarrollar servicios innovadores al reconocer el valor de las oportunidades identificadas y asimilar el conocimiento externo de la empresa. Faltaba literatura sobre innovación en microempresas de servicios, tanto nacionales como extranjeros.

Procedimientos metodológicos: El método de investigación adoptado es la investigación exploratoria cualitativa a través de múltiples estudios de casos, lo que permitió profundizar la comprensión del proceso de innovación en microempresas. Se realizaron entrevistas semiestructuradas con cuatro microempresas elegidas en función de las dimensiones de conocimiento previo (antecedentes) y conocimiento externo de acuerdo con el criterio de máxima variación.

Resultado: El resultado sugiere que las microempresas de lavandería en el hogar pueden desarrollar capacidad de absorción al enfocar sus esfuerzos en relaciones interorganizacionales enfocadas en proveedores y clientes y en relaciones intraorganizacionales centradas en el conocimiento previo y el intercambio de conocimientos.

Palabra clave: capacidad de absorción, procesos de innovación, microempresas.

1 - Introduction

The innovative capacity is usually built from sources of external knowledge (Laursen & Salter, 2006). However, external knowledge is not always effortlessly available (Argote, Ingram, Levine, & Moreland, 2000), which led some companies to innovate through a systemized development of internal knowledge (Zhou & Li, 2012; Nonaka, 1994). Cohen & Levinthal (1989, 1990) argue that learning and knowledge are related to the organization's capacity to innovate. However, innovative processes are associated with the company's ability to identify relevant knowledge, recognize its value, assimilate it (Cohen & Levinthal, 1990), and transform it in new knowledge (Liao, Fei, & Chen, 2007; Zahra & George, 2002; Teece, 2007). The new knowledge when commercially exploited in innovative products or services (Lane, Salk, & Lyles, 2001) is called of learning capacity or absorptive capacity (Cohen & Levinthal, 1989, p 569).

Micro e small enterprises (MSEs) are more open to innovation and the literature on innovation shows that innovative firms tend to have superior financial performance, gaining

competitive advantage and greater market value (Zou, Ertug, & George, 2018; Czarnitzki & Kraft, 2004). However, the global crisis has significantly reduced microenterprise access to critical external resources to innovate, such as technology and financial credit (Geng, Lin, & Whinston, 2009; Petticrew & Roberts, 2008). Small enterprises are more vulnerable to crisis effects than large ones (OECD, 2009) because they have more difficulty adjusting the workforce; are less diversified; are financially fragile and dependent on credit, and have limitations on access to external knowledge (Geng, Lin, & Whinston, 2009).

In this way, we ask “*How do service microenterprises create innovative services in crisis environments?*” This article aims to identify the mechanisms to innovate used by Brazilian domestic laundry microenterprises. This paper defends that microenterprises can develop absorptive capacity, create innovative services (Zou, Ertug, & George, 2018; Cohen & Levinthal, 1990), because absorptive capacity can be used as a strategy that allows microenterprises, in changing environments, to establish new routines, develop new capacities, and instruct their managers to innovate. The paper investigates the enterprise capacity to be proactive and efficient in the recognition, assimilation, and exploitation of external knowledge (Kickul & Gundry, 2002; Cohen & Levinthal, 1990), and the capacity to develop interorganizational partnerships (Freel, 2003) as source of external knowledge that allows reducing the perception of uncertainty (Sawyer, McGee, & Peterson, 2003). To create an innovative company (Cohen & Levinthal, 1990; Zahra & George, 2002), it is suggested to develop managerial routines that allow the managers to create organizational mechanisms to implement intraorganizational and interorganizational relationships to manage the new knowledge and services.

In order to deepen the understanding of the phenomenon and to analyze the constructs and their dimensions with greater influence in the capacity of the microenterprise to innovate, it was conducted qualitative-exploratory research based on multiple cases a directed sampling was adopted. The Eisenhardt proposal (1989) and the maximum variation criterion (Flick, 1998) were used as the microenterprise choice parameter. Four companies were chosen and semi-structured interviews were applied to their executives held by well-cited questionnaires (Jansen, Van den Bosch, & Volberda, 2005; Ordanini & Parasuraman, 2011). Brazil context was choice in reason of the huge crisis between 2014 to 2016.

From the above literature, arguments were conducted a systematic review (Petticrew & Roberts, 2008), on absorptive capacity and innovation in organizational processes, focusing on

service enterprises, in particular, small and microenterprises. The review of literature shows three aspects as follow: *i*) the global crisis has significantly reduced microenterprise access to critical external resources to innovate, such as technology and financial credit (Geng, Lin, & Whinston, 2009); *ii*) the literature on absorptive capacity focuses primarily on large and medium-sized companies (Shefer & Frenkel, 2005), and not often in small ones, which reveals a gap in the literature related to innovative capacity in microenterprises, and *iii*) recent literature is contradictory about the influence of age and organization size on the capacity to innovate, and need additional empirical studies to clarify the contradictions (Kotha, Zheng, & George, 2011; Ahuja & Lampert, 2001).

This article contributes both theoretically and managerially. Theoretically, the article extending the absorptive capacity theory and their applicability in MSE. It is important note that the literature on absorptive capacity focuses primarily on large and medium-sized companies (Shefer & Frenkel, 2005), and not often in small ones, which reveals a gap in the literature related to innovative capacity in microenterprises. Also, recent literature is contradictory about the influence of organization size on the capacity to innovate, and need additional studies to clarify the contradictions (Kotha, Zheng, & George, 2011; Ahuja & Lampert, 2001). Managerially, the article contributes suggesting that innovative services can be developed, even in crisis environments, using strategies that lead to a successful combination of organizational capacities in the implementation of innovative services, such as, building internal and external relationships, motivating employees to participate in creating new knowledge and sharing it internally.

2 – Literature review

The literature review is presented in six sections that develop the recent theory that supports the constructs and propositions shown in the conceptual framework (Figure 1). It starts with a review of innovative processes followed by external sources of knowledge, interorganizational relationships, crisis environment, intraorganizational relationships, and absorptive capacity.

2.1 Innovation and the Development of Organizational Capabilities

Innovation in a broad sense is defined as the creation of novelties that offer economic value through goods and services (Baunsgaard & Clegg, 2015). Recently, the Oslo OECD

manual defines innovation as: “a new or improved product or process (or combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)” (OECD, 2018, p. 20). Additionally, the Oslo manual (2018) also distinguishes innovation and innovation activities to give an accurate understanding of use with business. In a microfoundation approach, innovation involves individuals and group innovation. The first includes studies on how individuals (entrepreneurs, leaders, and specialists) can improve the innovation process in the organization, whether by imitation, adoption or adaptation. While, in the second, research focuses on aspects of inter-relational processes, mechanisms of adaptation and organizational structure (Wolfe, 1994). Innovation creates value and competitive advantage for the company (Ferreira, & Ferreira, 2017), where economic value is obtained by integrating intangible resources with different organizational capacities that involve knowledge, group work, internal cooperation and develop relationships with clients (Agarwal & Selen, 2009, 2014; Pitelis, 2009).

The creation of distinctive organizational capacities requires the development of high-order capabilities (Winter, 2003), which allow the company to modify and transform existing capabilities and resources in order to respond and adapt rapidly to environmental changes (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997). Three recent theories stand out in the field of strategy research and organizational theory aimed at the creation of high order organizational capacities (Winter, 2003). They are based on the organization's ability to create, in changing environments, such as crisis environment, unique capacities that can lead to competitive advantage (Barney, 2001) as dynamic capabilities (Teece, 2007), ambidexterity (O'Reilly & Tushman, 2013) and absorptive capacity (Cohen & Levinthal, 1990). Particularly, this study focuses on the development of the absorptive capacity by service microenterprises.

2.2 Absorptive Capacity (ACAP) and Interorganizational Relationships as Source of Knowledge

Innovation is essential for sustainable competitive advantage (Zou, Ertug, & George, 2018; Geroski & Geroski, 1995; Lengnick-Hall, 1992); nonetheless, to innovate it is necessary to acquire external knowledge (Cohen & Levinthal, 1990). Transform and integrate external knowledge with existing resources is an efficient method to create new knowledge and innovative processes, particularly, when based on collaborative exchange and share of

knowledge. The formation of business networks such as alliances, acquisitions and joint ventures (Ding, Akoorie, & Pavlovich, 2009, Powell, Koput, & Smith-Doerr, 1996) help accessing new knowledge. For example, Kandampully (2002) identified in the formation of business networks, a significant organizational strategy to innovate. For Kandampully (2002), technological capacity, cooperation between organization and customers, and knowledge management are essential activities for innovation. Several researchers (Pavlou & El Sawy, 2011; Agarwal & Selen, 2009, 2014; Tsekouras, Poulis, & Poulis, 2011; Ding, Akoorie, & Pavlovich, 2009) argue that interorganizational relationships are relevant in innovation processes. They suggest that collaborative mechanisms, knowledge sharing (Liao, Fei, & Chen, 2007) and the management of interorganizational relationships have a significant influence on service innovation, improvement and developing of services offered.

In other words, the creation of innovative services is related to the building of three specific capabilities: (i) intraorganizational relationships, which allows access to internal diversified knowledge and share knowledge through group works; (ii) interorganizational relationships, which facilitate access and acquisition of external knowledge, (iii) interorganizational and intraorganizational relationships may be based on collaborative mechanisms. However, developing interorganizational and intraorganizational relationships to acquire external knowledge and create internal knowledge may be insufficient to innovate. Micro and small enterprises must develop capabilities that allow them to recognize the economic value of the knowledge to internalize, assimilate and exploit it commercially (Cohen & Levinthal, 1990). This adaptive managerial skill to perceive and recognize the economic value of new knowledge can reduce the complexity of information and facilitates its transfer and dissemination within the organization (Lenox & King, 2004), which means that the organization by creating absorptive capacity (Cohen & Levinthal, 1989, 1990) gain competitive advantage (Zahra & George, 2002) and can implement innovative services (Lichtenthaler & Lichtenthaler, 2009). Indeed, the absorptive capacity effectiveness is contingent on available external knowledge and manager's cognition skill (Van den Bosch & Van Wijk, & Volberda, 2003), as well as the organizational capacity to build collaborative networks such as strategic partnerships and alliances. Furthermore, Lane & Lubatkin (1998) argue that partnerships with similar knowledge show a higher level of absorptive capacity in relation to partnerships whose knowledge is diverse.

Other factors such as size and organization age have an influence on ACAP, however, the empirical results are contradictory (Kotha, Zheng, & George, 2011; Ahuja & Lampert, 2001).

For example, several authors argue that large firms have access to more resources and greater capacity to invest in R & D than smaller ones (Shefer & Frenkel, 2005), which gives them a competitive advantage and superior performance. While others (Gavetti & Levinthal, 2000) defend that large firms are often slow and tied to routines, which can evolve into organizational inertia (Leonard-Barton, 1992), avoiding the organization from making the strategic decision in time to exploit the identified opportunities. On the contrary, recent empirical studies suggest that small firms are proactive, fast and efficient in acquiring and internalizing external knowledge (Kickul & Gundry, 2002; Acs, Audretsch, & Feldman, 1994) and can be agile in developing and implementing interorganizational networks, central to access privileged knowledge (Freel, 2003).

The effect of organizational age on ACAP also has conflicting results. Researches suggest that ACAP increases in young organizations because they are not affected by organizational inertia and by rigid routines (Huergo & Jaumandreu, 2004). Other studies indicate that ACAP increases in mature organizations since they are path dependent on the accumulated organizational and individual knowledge (Cohen & Levinthal, 1990). This paper argues that microenterprises can develop their knowledge sources and implement innovative services by taking the following proposition:

P1: Cooperative interorganizational relationships facilitate access to knowledge and allow the development of the absorptive capacity.

2.3 Crisis Environments and their effect on the Organization

Crisis environments are dynamic and turbulent environments associated with unpredictable changes (Koerich, Cancellier, & Tezza, 2015; Eisenhardt & Martin, 2000) that can lead to uncertainty in the organization's strategic decision-making process (Herremans, Isaac, Kline, & Nazari, 2010). Uncertainty may come from different sources such as rapid technological changes (Eisenhardt & Bourgeois, 1988; Eisenhardt, 1989), institutional regulations (DiMaggio & Powell, 1983; Zucker, 1987), market instability (Podolny, 1994) and economic crises such as the financial crisis of 2008 (Nelson & Katzenstein, 2014). Crisis forces the organization to develop mechanisms to respond rapidly to these changes (Teece, 2007; Teece, Pisano, & Shuen, 1997).

Depending on the uncertainty level, organizations tend to structure themselves in different ways by looking for the best arrangement of knowledge or learning cycles that can cope with

changing environments (Argyris & Schön, 1997). Crisis environments can make products and services obsolete, which encourages companies to innovate rapidly (Sorensen & Stuart, 2000), for example by applying innovative processes (Zahra, 1996) in the current product and service base (Jansen, Van den Bosch, & Volberda, 2005). Changing environment is the driving force that pushes the creation of new organizational capabilities as absorptive capacity (Albers & Miller, 2010; Van den Bosch, Volberda, & de Boer, 1999). The agility, proactivity of small and micro-enterprises enable the development of cooperative interorganizational relationships (Freel, 2003) and the fast identification of opportunities (Kickul and Gundry, 2002). This body of literature leads to the proposition.

P2: Crisis environments stimulate microenterprises to innovate, and influence (moderate) the relationship between interorganizational relationships and the development of absorptive capacity.

2.4 Intraorganizational Relationships and Absorptive Capacity

Three factors influence the acquisition of knowledge related to micro and small enterprises. In the first, one can defend that microenterprises have difficulty acquiring external knowledge, either by size or by lack of external connections (Lichtenthaler & Muethel, 2012). This context may lead microenterprises to focus on the development of internal knowledge and intraorganizational relationships (Lichtenthaler & Muethel, 2012). The second is associated with the financial crisis that may restrict credit, thus organization may have curtailed the access to resources due to greater selectivity of suppliers (OECD, 2009). The third is related to the lack of internal skill to absorb specialized knowledge, which hampers the management of new knowledge and the implementation of new technologies (Welsh & White, 1981).

Cohen & Levinthal (1990) emphasize the individual as the agent of capacity development and learning within the organization, and they highlight two factors that influence the effectiveness of the absorptive capacity: intraorganizational relationships (Agarwal & Selen, 2014, 2009) and the existing internal knowledge (Pavlou & El Sawy, 2011). Jansen, Van den Bosch, & Volberda, (2005) and Lane, Koka, & Pathak (2006) suggest that absorptive capacity depends on the accumulated internal knowledge to increase its capacity to absorb and exploit new knowledge. In other words, organizations with relevant prior knowledge tend to have a better understanding of how to acquire and assimilate external knowledge from network partners, especially when transferred knowledge overlaps (Cohen & Levinthal, 1990) leading to high level of absorptive capacity. Therefore, intraorganizational relationships and the

knowledge accumulated by them enable the successful transfer of external knowledge into the organization.

P3: Intraorganizational relationships help (mediate) the assimilation and transfer of external knowledge within the company.

2.5 Absorptive Capacity (ACAP) and Innovative Services

Cohen and Levinthal (1990, p. 128) define absorptive capacity as the organization's ability to recognize the value of new information from the external environment, to assimilate it, and to apply it for commercial purposes. The authors propose a model with three dimensions: recognition of the value of information or knowledge; the assimilation of this knowledge; and the application of it to create innovation. Cohen & Levinthal (1990) suggest that the ability to absorb knowledge will depend on the level of prior knowledge related to both basic skills and accumulated learning experiences (Minbaeva & Michailova, 2003), which facilitate recognition of the economic value of new knowledge (Cohen & Levinthal, 1990; Zahra & George, 2002). In a managerial and social network approach, Volberda, Foss, & Lyles (2010) suggest that absorptive capacity involves three types of organizational capabilities: managerial skills, intraorganizational relationships, and interorganizational relationships. While, in a management perspective, Zahra & George (2002) understand that the definition of absorptive capacity is related to the creation of four capacities: acquisition, assimilation, transformation, and exploitation of new knowledge. The model of Zahra & George (2002) distinguishes the potential absorptive capacity - PACAP (acquisition and assimilation) of the realized absorptive capacity - RACAP (transformation and exploration) since they are two subsets of independent capacities. Potential capacity is associated with the processes of identifying, assessing and recognizing the value in external knowledge and assimilating it (Jansen, Van den Bosch, & Volberda, 2005). The access to unique knowledge can be powered through the development of external collaborative relationships as a source of privileged knowledge (Malhotra, Gosain, & El Sawy, 2005; Van Wijk, Van den Bosch, & Volberda, 2003). The realized capacity is related to the process of modifying and transforming the external knowledge (acquired and assimilated) with the internal knowledge (prior and/or internal network), creating new knowledge and capacities to innovate (Cohen & Levinthal, 1990).

Extending the understanding of absorptive capacity Todorova & Durisin (2007) propose a refinement of the construct, retaking Cohen & Levinthal concept (1990) defining absorptive

capacity as the ability to recognize the value of new information and knowledge, to assimilate, transform and exploit it. Thus, the organization can gain competitive advantage, flexibility, and the capacity to innovate and obtain superior performance. In the same vein, Camisón & Forés (2010) follow and extend the concept proposed by Zahra & George (2002). They define absorptive capacity as a systematic and dynamic capability divided into two subsets, potential and realized involving four capacities:

- (1) Acquisition - the ability to identify and acquire external knowledge;
- (2) Assimilation – skills to understand and interpret new knowledge from the internal cognitive structure;
- (3) Transformation - knowledge is modified according to the individual cognition and organizational structure; and
- (4) Exploration – knowledge is applied in internal processes to obtain superior performance outcome in innovative services. Therefore, we have the following propositions:

P4: Integrating potential and realized capacities allow the microenterprise to create new knowledge and innovative services.

2.6 Conceptual Framework and Propositions

Figure 1 shows the conceptual framework based on the models of Zahra & George (2002) and Volberda, Foss & Lyles (2010). It presents the relationship between the absorptive capacity constructs: interorganizational relationships as an external source of external knowledge, intraorganizational relationships as a source of internal knowledge, crisis environment, and the associated propositions. It is proposed that the crisis environment influences (moderates) the relationship between the external source of knowledge and the absorptive capacity. It is also suggested that intraorganizational relationships affects (mediate) the relationship between the potential absorptive capacity (PACAP) and realized absorptive capacity realized (RACAP).

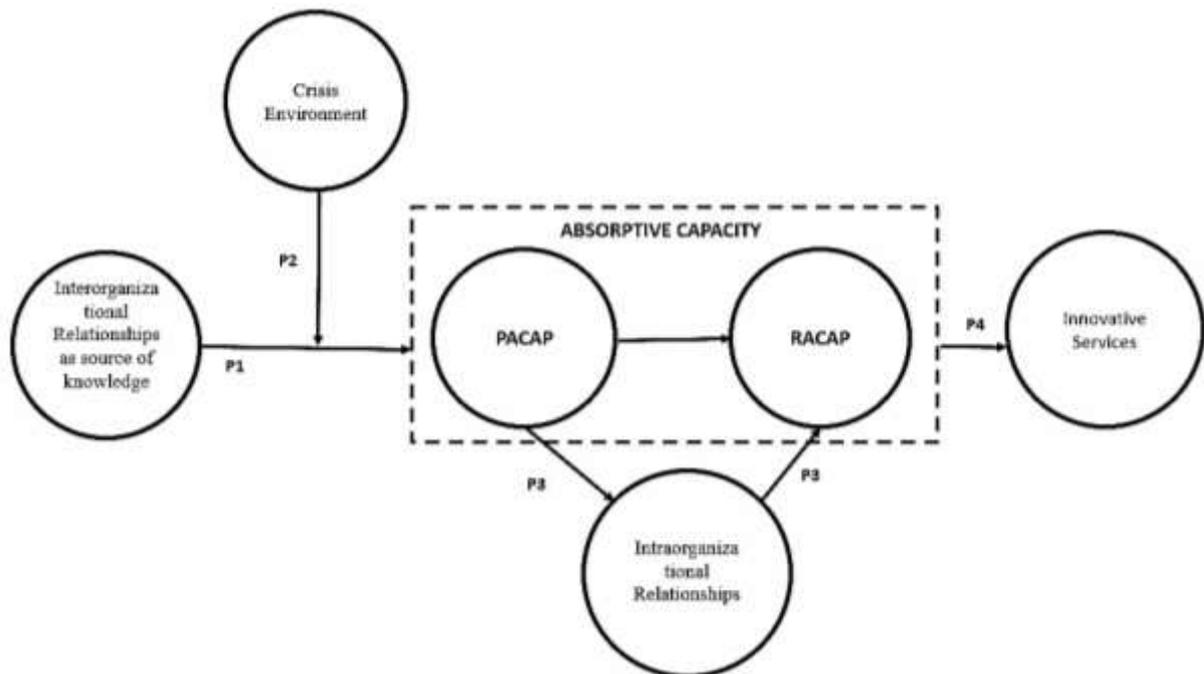


Figure 1 - Conceptual model

Source: Adapted from Zahra & George (2002) and Volberda, Foss, & Lyles (2010).

3 - Methodological procedures

This research adopts a qualitative-exploratory approach (Yin, 2015; Eisenhardt, 1989) within the post-positivist paradigm. The used method was the multiple case study, which allows to deepen the knowledge and understanding about the phenomenon under study (Yin, 2015). The data were collected through semi-structured interviews, based on the questionnaires of Jansen, Van den Bosch, & Volberda (2005) and Ordanini & Parasuraman (2011) as shown by the questions in Appendix A. The questions that oriented the four interviews included six issues: *i*) information acquisition and interorganizational relationships; *ii*) assimilation and intraorganizational relationships; *iii*) transformation and intraorganizational relationships; *iv*) exploration; *v*) intraorganizational relationships, and *vi*) innovative services (absorptive capacity). Field documents and observations helped to triangulate the evidence and revealed some important aspects not covered by the interviews (YIN, 2015).

The sampling technique followed the intentional type and it was applied to the microenterprises of domestic laundries in Brazil (São Paulo – State) according to the maximum variation criterion. Flick (1998, p.70) states that this criterion allows investigating the research problem with the study of a few cases because they highlight the significant differences between the extremes of the selected dimensions. According to Eisenhardt (1989), four to ten cases are

enough to represent the phenomenon. To meet the maximum variation criterion, a matrix (2x2) shown in figure 2 was elaborated, with two axes, as follow:

- (i) With familiar antecedents - no familiar antecedents (in domestic laundries), and
- (ii) Searching external sources of technology and information – development of internal technology.

The horizontal axis “familiar antecedents-no familiar antecedents” in domestic laundries measures both the influence of accumulated prior knowledge (Lane, Koka, & Pathak, 2006) and indirectly the effect of organization age (Huergo & Jaumandreu, 2004; Cohen & Levinthal, 1990) against the lack of familiar antecedents. The vertical axis “search for external sources-development of internal knowledge” measures the microenterprise effort in the search of external knowledge (Kickul & Gundry, 2002). The development of interorganizational relationships (Freel, 2003) helps the microenterprise to access new technologies for innovation (Cohen & Levinthal, 1990), and reduce the uncertainty perception in a crisis environment (Sawyer, McGee, & Peterson, 2003).

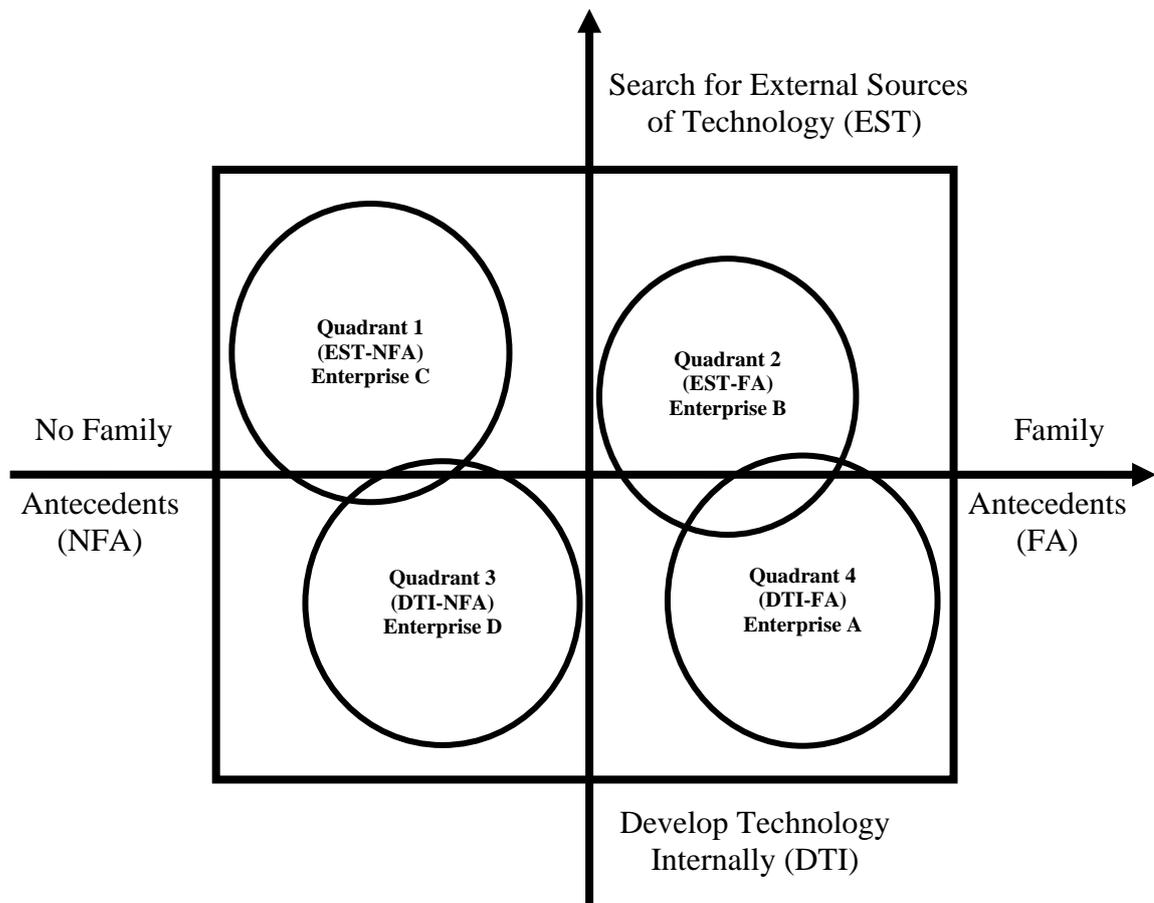


Figure 2 – Sampling criterion to choose microenterprises - matrix of maximum variation.
Source: Prepared by the authors.

From the Eisenhardt's proposition (1989), and the maximum variation criterion (Flick, 1998), four microenterprises (A, B, C, D) were chosen, in which semi-structured interviews were applied to company executives grounded on the well-cited (Gatignon, Gotteland, & Haon, 2016; Schlickel, 2013) questionnaires of Jansen, Van den Bosch, & Volberda (2005) and Ordanini & Parasuraman (2011). Figure 2 shows the chosen microenterprises distributed in the four quadrants according to the maximum variation criterion. Notice that the companies are not limited to one quadrant. For example, the company C is predominantly in quadrant 1 (EST-NFA), and due to it had developed technology internally belongs partially to quadrant 3. In contrast to enterprise C, company D is mainly in quadrant 3 (DTI-NFA), however, it has been searching for external technology. Company B is mostly in quadrant 2 (EST-FA), therefore, it has been developing technology internally. Unlike to enterprise B, company A falls predominantly in quadrant 4, although it has been searching for external knowledge through customer that allow capturing trends and opportunities from the laundry market. After the interviews, the collected material was transcribed and examined by the content analysis technique (Bardin, 2011; Olabuenaga & Ispizúa, 1989).

4 - Results

4.1 Brazilian laundry services industry

Brazil has approximately 9,500 laundries, of which 7,400 are from the domestic segment, which provides services to the final customer. Of these 7400 domestic laundries, 4,900 are located in the State of São Paulo. According to the National Association of Laundries, 80% of them are small and microenterprises, of which 90% have up to 10 employees. In the same vein, Caetano (2013) observed that the Brazilian laundry industry is predominantly composed of micro and small enterprises, which create, according to SEBRAE (2014), about 58,000 direct jobs. Mendonça (2003) highlights that after the entrance of the international laundry networks there was a profound change in the business model. Mendonça (2003) stands out the arrival of fast laundry projects, with the incorporation of new washing technologies and new visual patterns. Mendonça (2003) also emphasizes the change in the pricing strategy, which reduced the segment profits.

Compelled to face new competitors and technological innovations traditional domestic laundry enterprises were forced to rethink their business models developing innovative services to adapt to the challenges of global competition. However, to innovate in a crisis environment

and tough competition involve several factors such as access to external sources of knowledge, the transformation of external and internal knowledge into new knowledge and the ability to exploit it commercially. These elements represent the concept of absorptive capacity, which makes it an appropriate mechanism for companies to develop innovative processes (Volberda, Foss & Lyles, 2010; Zahra & George, 2002; Cohen & Levinthal, 1990).

4.2 Intra Case Analysis

Microenterprise A invests in the qualification and training of its employees and obtains comparatively better economic performance than the other three enterprises. The enterprise stimulates its employees to participate in the innovation process through ideas or suggestion plans for improvements and knowledge sharing. The organization exploits its previous knowledge of the domestic laundry business since it is a company with a family history in this industry segment and its contacts with customers. The microenterprise A innovates using two dimensions of absorptive capacity. The first integrates the knowledge created by the employee's collaborative networks with its prior knowledge accumulated over time due to the family background. The second is its perception of the external environment supported by customer's contacts; although relatively shallow when compared with enterprises B and C. That means microenterprise A developed a plain intraorganizational relationship nevertheless a shallow monitoring of the external environment that enables company A to create new knowledge and quickly meet the demand for new services (Tsekouras et al., 2011; Lane, Koka, & Pathak, 2006), as represented in quadrant 4 of figure 2.

Microenterprise B focuses its efforts on managing the relationship with its closer stakeholders, such as customers, suppliers, and community. Similarly, to Company A, Company B has prior knowledge of the business, due to family history in the domestic laundry segment. Comparatively, enterprise B presents superior financial results than enterprises C and D but inferior to enterprise A. The respondent indicates that company B monitors the external environment in search of opportunities captured through customers, suppliers, and community. Furthermore, company B seeks to contract from the laundry market specialized workforce. The phrase: "The focus is to identify potentialities and attract a workforce that has differentiated skills" shows its strategic goals. Company B innovates through two dimensions of absorptive capacity. The first is to obtain external information through the formation of interorganizational relationships (Cohen & Levinthal, 1990; Zahra & George, 2002) with customers, suppliers, and community. The second is to develop intraorganizational relationships creating knowledge

through the prior knowledge from the family background and hiring skilled labor force (Lane, Koka, & Pathak, 2006), as represented in quadrant 2 of figure 2.

Company C is a market and customer oriented base of its strategic plan. Enterprise C presents a lack of family background in the domestic laundry segment, which can probably explain its inferior economic performance compared to companies A and B with a familiar background. Company's respondent declared that the company's focus is - "We have identified that our customer attendance is differentiated seeking customer loyalty, which is what helps us achieve customers' goals". Company C seeks to innovate acquiring information from customers and market developing interorganizational relationships (Cohen & Levinthal, 1990; Zahra & George, 2002) positioned in quadrant 1.

Company D presents different behavior by centralizing the processes of management and innovation in the owner. Although the owner shows some characteristics of entrepreneurial leadership, no leadership behavior have been identified either to involve employees in the processes of improvement and creation of new ideas, or developing new organizational capacities. Like company C, company D has no family background in the laundry segment. Company D is the most vulnerable to environmental changes because it has not developed sources of external knowledge, nor internal sources of knowledge due to lack of involvement and training of employees, and lack of prior knowledge. Company D has inferior economic performance compared to companies A, B, and C. The lack of interorganizational relationships, intraorganizational relationships, and prior knowledge is not compensated by the leader's performance, and it is represented in quadrant 3.

4.3 Inter Case Analysis

Proposition 1 related to the development of strategic interorganizational relationships as a relevant source of knowledge is observed in enterprises B and C, positioned in quadrants 1 and 2 respectively. Enterprises A and D, positioned in quadrants 3 and 4, present an informal relationship with customers and market sufficient to innovate.

Proposition 2 associated with innovation in crisis environments is observed in the four enterprises since they changed their business model searching external information to introduce new services and maintain competitive in the laundry segment.

Proposition 3 related to the development of internal relationships is perceived in the four enterprises. The four companies create internal knowledge through different paths and

intensities. For example, company A integrates the qualification, training of employees, the incentive to share information and previous knowledge to innovate and leverage superior economic performance. Company B uses prior knowledge of the laundry industry to innovate. Company C develop internal knowledge based on hiring skilled labor force. Company D depends on leader behavior to innovate.

Proposition 4 associated with absorptive capacity and innovative services is observed in the A, B, and C enterprises, although in different levels. Companies A, B, and C developed external and internal networks using diverse strategies. Companies A and B supported by familiar background chose to concentrate on opposite strategies as interorganizational and intraorganizational relationships respectively. While enterprise C with a lack of familiar background chose interorganizational relationships. It is not clear the strategy of company D since there are no effective mechanisms to develop inter and intraorganizational relationships, and innovation is driven only by the leader.

5 -- Discussion

This multiple case study extends the theoretical understanding of absorptive capacity in service microenterprise, confirming the mechanisms by which microenterprises innovate in crisis environments. The interviews showed that different strategies are adopted by the four microenterprises such as the formation of interorganizational relationships with clients (A, B, C and D), suppliers and community (B), the development of intraorganizational relationships through internal knowledge accumulated by the family background in the sector (A and B) and sharing, training (B) and hiring skilled labor force (C).

Three of the four microenterprises studied (A, B and C) show innovative capacity with the development of intraorganizational and interorganizational relationships associated with the capacity to transform the new knowledge into innovative services and economic performance. The lack of external and internal networks reduces the company's capacity to innovate, create new services, and profit, as observed in company D. The analysis of the interviews suggests that the "antecedents in the segment" has a significant influence on economic performance, as shown in the case of companies A and B.

This qualitative-exploratory study through multiple case study responses the research question when verifying that microenterprises in the domestic laundry sector in São Paulo can create innovative services based on the formation of external and internal relationships to create

new knowledge. From the analysis of the interviews, it was possible to explain several contradictory points in the literature. For example, microenterprises have shown that they are agile and proactive in identifying opportunities and their internalization (Kickul & Gundry, 2002; Cohen & Levinthal, 1990), as they do not follow rigidly existing routines (Huergo & Jaumandreu, 2004; Gavetti & Levinthal, 2000) and they are not affected by organizational inertia (Leonard-Barton, 1992). The superior economic performance is related to the companies with prior knowledge (Agarwal & Selen, 2014) associated with the knowledge accumulated by the family history in the domestic laundry segment, independently of developing strategies to create intraorganizational relationships (company A) as suggested by Nonaka (1994) and Zhou & Li (2012); or interorganizational relationships (companies B and C) as proposed by Van den Bosch & Van Wijk, & Volberda (2003). Other mechanisms were used by microenterprises to increase or enhance their strategic actions, among them, the qualification and training of employees and the sharing of information (company B), and hiring of the skilled labor force in the formation of the internal network (Cohen & Levinthal, 1990).

Finally, it is suggested to managers that the microenterprise under pressure of crisis or turbulent environments should develop: (i) Strategic partnership to better monitor the external environment and identify opportunities to acquire knowledge to be commercially exploited; and (ii) Metaroutines that allow the company to create continuously new capacities that enable acquiring, assimilating and transforming new knowledge into innovative services.

6 – Final considerations

The results of this study found that microenterprises can develop innovative services using even partially the potential and realized capacities (absorptive capacity). Thus, it is suggested the continuity of this research using the conceptual model of figure 1 and based on a survey with the questions of appendix A (Jansen, Van den Bosch, & Volberda, 2005; Ordanini & Parasuraman, 2011) and applied at LAVTECH 2019, 3rd International Laundry Fair. As limitations, it should be emphasized that it is an exploratory study of four multiple cases restricted to the city of São Paulo that do not necessarily represent the state of São Paulo and Brazil. The sampling is deterministic to allow analyzing the propositions and validity of the construct relationships of the conceptual model. However, the sample size may be not adequate

for an analysis of the mechanisms used by companies to innovate, even considering the sample size suggested by Eisenhardt & Bourgeois (1988) and Eisenhardt (1989).

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