XXIII SEMEAD
Seminários em Administração

novembro de 2020
ISSN 2177-3866

Influences of Intermediation of Support Institutions on Innovativeness and Organizational Performance: A Systematic Review

PEDRO HENRIQUE RODRIGUES DE SOUSA
UNIVERSIDADE DE BRASÍLIA (UNB)

EDGAR REYES JUNIOR
UNIVERSIDADE DE BRASÍLIA (UNB)

VICTOR DEL-CORTE-LORA
UNIVERSITAT JAUME I

Agradecimento à orgão de fomento:
O presente trabalho foi realizado com apoio da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – Código de Financiamento 001

INFLUENCES OF INTERMEDIATION OF SUPPORT INSTITUTIONS ON INNOVATIVENESS AND ORGANIZATIONAL PERFORMANCE: A SYSTEMATIC REVIEW

1. INTRODUCTION

Organizational performance is one of the emphases of the studies in the field of strategy and management (Navimipour, et al., 2018; Damke, et al., 2018; Chavez, et al., 2017; Lo & Fu, 2016), and a variable with significant interest for the researchers in this area (Richard, et al., 2009), in addition to it, its definition involves ideas related to monetary and non-monetary aspects such as corporate growth (Muthuveloo, et al., 2017), operational and marketing objectives (Li et al., 2005), financial performance (Gupta, et al., 2019; Martin-Rojas, et al., 2019), turnover (Chavez, et al., 2017), market share (Martin-Rojas, et al., 2019; Chavez, et al., 2017), customer services (Jin, et al., 2019), reputation (Reverte, et al., 2016), customer and stakeholders satisfaction (Yunis, et al., 2018; Reverte, et al., 2016), operational efficiency (Gupta, et al., 2019; Yunis, et al., 2018), productivity (Jin, et al., 2019; Oyemomi, et al., 2018), and socio-environmental results (Wijethilake, 2017; André, Cho, & Laine, 2018).

Thus, researchers have analyzed different variables and contexts with the purpose of identifying aspects that may explain the variation of organizational performance (Hu, Chang, & Hsu, 2017; Chavez, et al., 2017; Subramony, et al., 2018; Soltani, et al., 2018). However, this multidimensionality may make it hard to establish a definition of organizational performance, especially for the operationalization of its measurement.

To address this, this paper, based on a previous research by Richard, et al. (2009), characterizes the organizational performance in three different branches of the organization results: i) financial performance (including profits, ROI, and others), ii) market performance (including sales, market share, etc.), and iii) shareholders return (it includes the economic added value, returns obtained by shareholders, etc.).

The promotion of innovation has been one of the relevant concerns of organizations, which consider it as a variable that can contribute substantially to organizational performance (Ali, et al., 2016; Sulistyo & Siyamtinah, 2016; Dhanora, et al., 2018). Based on this understanding, it is noted that innovative organizations behave differently from others in the face of risks, uncertainties, volatilities and in the different organizational capacities (Ravichandran, 2017; Tajeddini, et al., 2017; Lancker, et al., 2015). Thus, the innovative capacity– linked to the intra-organizational capacity - is considered one of the main determinants of performance and organizational survival (Lintukangas, et al., 2019; Hult, et al., 2004).

It should be noted that the innovation capacity refers to the capacity of one organization to produce innovations, as well as its openness to new ideas as a way to exercise influence to markets (Lintukangas, et al., 2019). In this sense, this innovation capacity, its related to the capacities that guide an organization in the search for innovation (Rubera & Kirca, 2012). Lawson e Samson (2001) posit that this capacity is related to the skill to manage different resources and fundamental competences to promote the development of innovation.

In this perspective, research has sought to identify capabilities in organizations that promote innovation (Sheng, 2017; Urueña, et al., 2016; Wang et al., 2018). Studies on governance (Helmers, Patnam, & Rau, 2017), managerial skills (Aarikka-Stenroos, et al., 2017), technological capabilities (Sears, 2017), R&D - Research and Development (Homburg, et al., 2017) and political-governmental aspects (Zhang & Guan, 2018; Wang, 2018) aim to understand the specificities linked to the capacity of organizations to innovate and, therefore, to maximize their organizational performance. However, there is a gap regarding the interactions of different actors in the innovation system (Reynolds & Uygun, 2018) and the contributions of

links with institutions to organizational processes and results (Ormazabal, et al., 2018; Giannopoulou et al., 2018)

It should be emphasized that, in the present study, the term "supporting institutions" is not to be confused with the aspect of institutional sociology or institutional economics, widely studied by Dimaggio and Powell, Meyer and Rowan, North, among others, which specify "institutions" as norms, rules, beliefs and shared values. The term "support institutions" is linked to those organizations that are expressly institutionalized, such as universities, research institutes, government agencies, business associations, etc. Therefore, the terms "support institutions" and "support organizations" are used in the present study referring to organizations that offer a series of real services that directly or indirectly support organizational activities, such as improving technical conditions, certification support, information provision, etc. (Brusco, 1993).

Based on these considerations, the present study aims to identify the influence of relations with support institutions on innovativeness and organizational performance.

Although an extensive number of studies has highlighted the importance of inter-organizational relationships for organizational innovation (Hung, 2017; Radziwon & Bogers, 2018; Xie, et al., 2018) and for corporate results (Rungsithong, et al., 2017; Alaaraj, Mohamed, & Bustamam, 2018) and a large number of researches have emphasized the relevance of interactions with universities (Chen & Lin, 2017), scientific parks (Díez-Vial & Montoro-Sánchez, 2015), financial institutions (Beck, et al., 2018), suppliers (Chen, Su, & Ro, 2017) and competitors (Pun & Ghamat, 2016), few studies have focused on the analysis of the role of intermediation of support institutions and the systematization of attributes that allow the influence of this intermediation on organizational performance.

The realization of this study contributes, first and foremost, to a better understanding of the role of supporting institutions in the innovativeness of organizations; secondly, it helps to advance understanding about aspects that influence access to valuable information by organizations; and, thirdly, it contributes to the expansion of the understanding of variables that measure organizational performance.

The question that this study sought to answer is: what is the influence of relationships with supporting institutions on the innovativeness and performance of organizations? To answer this question, a systematic review of the literature was carried out, covering the period from 2010 to 2020. In addition, there is a discussion of the results, with presentation of proposals and a theoretical model that illustrates the research findings, which have as emphasis the relevance of support institutions to expand access to non-redundant contacts, which significantly influence the innovation capacity of organizations, resulting in the maximization of financial and non-financial performance.

Thus, this article is composed, in addition to this introduction, by the chapters of methods for data collection and analysis, bibliometric results, discussion and, finally, the conclusion of the study.

2. METHODS

In order to identify how the relationships between support institutions, innovativeness and organizational performance are studied, scientific articles published between 2010 and 2020 were analyzed. As a source of academic production, the following databases were used: Web of Science, Scopus and ProQuest. Figure 1 shows the keywords used to search the databases.

Keywords
("support institutions" OR "supporting institutions" OR "supporting organizations" OR "support organizations") AND ("innovative capacity" OR "innovation capacities" OR “innovativeness” OR innovation) AND (“organizational performance”)

Figure 1. Keywords used

In the initial search of these databases, 186 articles were found. As a way to specifically select articles with empirical research, scientific relevance and that are linked to the objective of the present study, four filters were sequenced, namely:

1st Filter: Elimination of duplicate articles, published in annals of events, bibliometric studies and without impact factor (the Scientific Journal Rankings was considered as an impact factor index).

2nd Filter: Scientific Relevance: the Methodi Ordinatio Index (Pagani, et al., 2015) was used as a protocol to qualify articles as to their relevance (based on the journal's impact factor, year of publication and number of citations).

3rd Filter: Reading of abstracts: elimination of articles that do not investigate, in parallel, the following aspects: i) support institution (such as organizations that offer services that directly or indirectly support organizational activities); ii) organizational performance; and iii) innovation.

4th Filter: Reading of the full texts: elimination of articles that do not investigate the aspects previously presented (from the full reading).

Figure 2 illustrates the process for the selection of articles, based on searches in the databases and the specified filters.

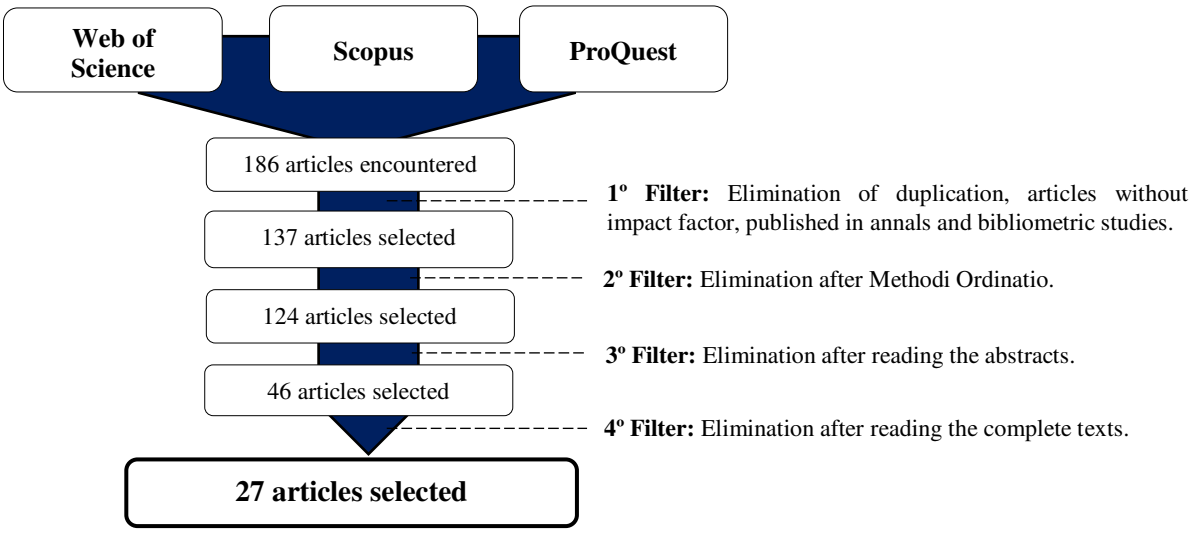

Figure 2. Article selection filter

For bibliometric investigation of the selected studies, the main theoretical approaches underlying the research were analyzed, in addition, the different support institutions investigated and, considering that different indicators are used to measure organizational performance, the types of performance metrics used in the studies. For these analyzes, descriptive statistics were used.

In order to identify the most central theoretical approaches in the studies, as well as to map the interactions between these approaches, the Social Network Analysis – SNA technique (with support from UCINET and NetDraw software) was used, which makes it possible to analyze elements of centrality, structures of the network, intermediation between actors, in

addition to the possible representation and visualization of existing relationships (Dai, Duan, & Zhang, 2020). In the present study, *nDegree* and *nBetweenness* were used; the first indicates how central the different theoretical approaches are in the analyzed context, taking into account the direct connections with the other approaches; and the second expresses the intermediation exercised by the theoretical approach in relation to the others.

Thus, from the analyzes, it was possible to identify the evolution of the studies, as well as to verify on which theoretical and operational perspectives they are investigated.

3. RESULTS

This section presents the main results of the systematic review, including the main theoretical approaches that underpinned the studies, the supporting institutions investigated, and the types of performance analyzed.

Theoretical Approaches

The following figure shows the network formed with the theories and theoretical approaches that underpinned the research.

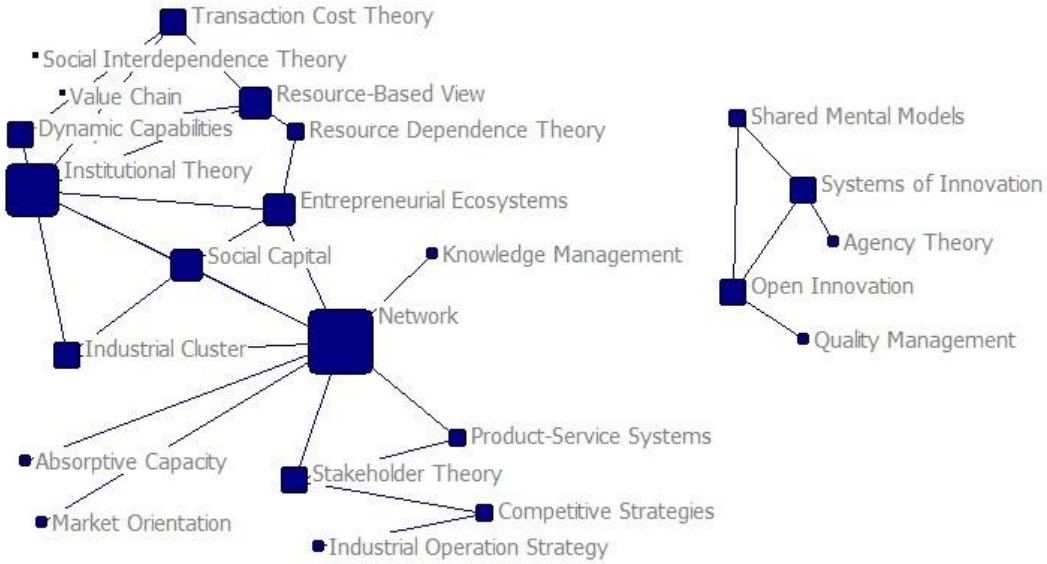

Figure 3. Theoretical Approaches - Formed Network

It is observed that there is an expressiveness of theoretical lenses on which the studies are based. Note that the network formed is fragmented into two independent subnets.

The first subnet (larger subnet) consists of theoretical approaches linked to the fields of strategy and sociology (Resource-Based View, Resource Dependence Theory, Stakeholder Theory, Dynamic Capabilities, Transaction Cost Theory, Entrepreneurial Ecosystems, Network, Institutional Theory, Social Capital). Therefore, it is worth emphasizing the existing connections between these two dimensions of scientific knowledge (Strategy and Sociology), demonstrating the complementarity of these theoretical fields for investigating the role of supporting institutions in innovativeness and organizational performance.

In addition, the smaller subnet is centered on theoretical approaches from the economic side of the field of innovation management (Systems of Innovation, Open Innovation). Therefore, the emphasis of these investigations is on the influences existing in the innovation processes based on the participation of different actors from the public and / or private sectors whose activities can influence the production and diffusion of knowledge and resources useful

for the development of innovation (Kafetzopoulos, et al., 2019; Freeman, 1987; Hameed, et al., 2018).

As a way of objectively identifying the main theoretical approaches, the centrality measures (*nDegree* and *nBetweeness*) are presented in the table below for the approaches that presented the most expressive results.

Main Theoretical Approaches	nDegree	nBetweeness
Network	0.435	0.283
Institutional Theory	0.348	0.132
Entrepreneurial Ecosystems	0.217	0.041
Resource-Based View	0.217	0.011
Social Capital	0.217	0.002
Systems of Innovation	0.174	0.012
Open Innovation	0.174	0.012
Stakeholder Theory	0.174	0.103
Dynamic Capabilities	0.174	0.000
Transaction Cost Theory	0.174	0.000

Table 1. Theoretical Approaches - Centrality Measures

The relevance of the Network approach to the analyzed context stands out, being this considered the main theoretical lens on which the analyzed studies were based.

Therefore, this approach (Network), which emphasizes relational arrangements, interactions and configurations of existing ties, seeks to explain the performance of organizations based on multilateral behavior, as well as the position of actors in the network, in direct and indirect ties , in the engagement to achieve relationships that provide access to resources, and in the set of integrating actors that can influence the existing connections (Burt, 1992; Granovetter, 1985; Gulati, 1998; Lavie, 2006; Rivera, et al., 2010; Uzzi, 1997).

Thus, it is understood that organizations can maximize their capacity for innovation, as well as improve their performance through networks, making use of the possibility of accessing the knowledge and resources held by the interrelated actors directly or indirectly (Belso-Martínez, et al., 2017; Rehman, 2016). In this sense, the support institutions play an important role, acting in the intermediation between the actors of the network, connecting parts that would not relate without their performance as a broker (Hameed, et al., 2018; Cooper, et al., 2012).

Furthermore, it is worth noting the wide diversification of Institutional Theory, Stakeholder Theory and Entrepreneurial Ecosystems in focal studies. As the *nBetweeness* measure expresses the intermediation exercised by theoretical approaches, it appears that these approaches that presented the greatest results in *nBetweeness* are related in a widely diversified way with other theoretical approaches.

It is inferred, therefore, that studies focus on the network approach and are investigated in a diversified way from Institutional Theory, Stakeholder Theory and Entrepreneurial Ecosystems.

Supporting Institutions

From the bibliometric analysis, it was possible to identify the support institutions studied in the focal context, and it is possible to observe that there is a broad set of institutions that were the object of analysis.

It is worth mentioning the expressiveness of studies (44%) that observed the role of universities in the analyzed context, highlighting the important role of this type of support institution in the transfer of knowledge and technology, in access to resources, in capital

development in stimulating innovation, and expanding the likelihood of related organizations to maximize their performance (Hameed, et al., 2019; Rehman, 2016).

In addition, the range of investigations by public organizations (such as government agencies, ministries, etc.) is highlighted, analyzed in 41% of the studies; in addition, they include incubators and business development centers (investigated in 22% of surveys), accelerators (in 15%), research institutes, science parks, financial and consulting organizations (11%), certification organizations (7%), associations and venture capital groups (4%).

It is noteworthy that these support institutions influence the capacity for innovation and organizational performance, both acting in intermediation between interested parties, in the provision of services, and in supporting the development of the competitiveness of organizations (Yu, et al., 2019 ; Roundy, 2017; Cooper, et al., 2012; Chung, 2019).

Types of Organizational Performance

There are a multitude of variables that are used as a measure of organizational performance, which involves financial and non-financial elements. Thus, for a specific analysis of the dimension of organizational performance, the metrics used in the focal studies to assess this component were identified.

It was observed that a significant proportion of studies (63%) used financial indicators (such as profitability, revenue, profit, etc.) as a measure of organizational performance; however, it is noteworthy that there is a wide range of non-financial measures that were used by researchers as performance indicators, involving commercial aspects: sales (26%), new products (19%), customer satisfaction (15%) , customer portfolio (4%); operational aspects: productivity and operational development (15%), quality and new processes (11%), efficiency (7%); aspects of people: learning (7%), team satisfaction (4%); and corporate aspects: achievement of goals (19%), market share (15%), business growth, number of projects, environmental and social performance (11%).

Therefore, the analysis of organizational performance analyzed in the present study is not limited to financial variables, but can also be categorized into commercial, operational, people and corporate performance.

Taking bibliometric findings into consideration, the following will discuss, from the perspective of the network approach, the influence of different support institutions (which include universities, research institutes, associations, public organizations, incubators, science parks, among others), innovativeness and financial and non-financial performance of organizations.

4. DISCUSSION

Relationship with support institutions, innovativeness and organizational performance

Studies concerning inter-organizational relationships show that the development of associations between organizations is often a response to environmental uncertainties (Pennings, 1981). In addition, resource scarcity can foster different organizational relationships (Pfeffer & Salancik, 1978; Schermerhorn, 1981). In this way, relations with support institutions can aim at integrated goals, with mutual benefits arising from these relationships (Kshetri & Dholakia, 2009; Oliver, 1990).

The connection with educational and research institutions enables organizations to access important scientific knowledge, which can be applied to the optimization of organizational processes (Rubin, Aas, & Stead, 2015). Also, these institutions can act as intermediaries in the sharing of scientific knowledge (Decarolis & Deeds, 1999).

The relationship with associative institutions allows access to relevant statistical information and knowledge of the most cost-effective source of supply (Staber, 1987). Moreover, it facilitates the minimization of uncertainties in relation to political-legal adequacy and access to trends that may influence organizational activities (Oliver, 1990). Based on this relational context, support institutions can mediate relationships among actors in organizational networks (McEvily & Zaheer, 1999), where many organizations form or merge to achieve competitive advantageous positions in the market context (Jarillo, 1988). Through networking activities, organizations develop inter-organizational connections that enable access to critical resources and different marketing channels (Johanson & Mattsson, 1987), and gain legitimacy, optimization of customer service, and attention to high complexity problems (Provan & Kenis, 2007).

Most studies of inter-organizational relationships recognize that organizations are emerged in an interconnected environment and that their performance is often linked to their connections with other organizations (Oliver, 1990). Thus, as suggested by Granovetter, (1985), Burt (1992) and Portes (1998), the different actors can have access to important resources and knowledge through direct or indirect contacts or connections, thus enhancing their condition to reach their goals.

In this sense, support institutions can facilitate the exchange of knowledge, mediate inter-organizational relationships (Watkins et al., 2015), provide technical support (Esparcia, 2014), facilitate access to critical resources (Peng & Luo, 2000; Vakharia, et al., 2018), and allow obtaining valuable information (Cui, et al., 2018). Therefore, companies that establish links in networks with universities, research organizations, government agencies, incubators, among other institutions, are more likely to obtain superior performance (Rehman, 2016; Kharuddin, et al., 2015; Roundy & Bayer , 2019).

Given the above, the first proposition of the study is presented:

Proposition 1: Relationship with support institutions enhances organizational performance.

The scope of the markets and the increasingly specific characteristics of assets have led organizations to demand external resources and invest more expressively, based on this need, on inter-organizational relationships (Johanson & Mattsson, 1987), given that technical advances have prevented organizations from completely dominating wide market fronts (Orsenigo, Pammolli, & Riccaboni, 2001). This encourages different external relationships in order to enhance learning in the competitive environment (Zahra, Ireland, & Hitt, 2000).

Given the broad market characteristics and resource specificities, it is important for organizations to invest in innovativeness (Rathore, et al., 2018; Battor & Battor, 2010) this being the result of data collection and processing (Ahuja, 2000) and the integration of new and different knowledge (Kogut & Zander, 1992).

Through the diversity of knowledge, the scope and speed of organizational learning is intensified, resulting in the introduction of new products in the market and in the optimization of fundamental competencies and processes (Zahra et al., 2000). It should be noted that organizations that use different collective knowledge have a greater possibility of innovation (Laursen & Salter, 2006). Thus, support institutions play an important role in obtaining valuable information (Watkins et al., 2015).

In this context, teaching and research institutions can provide specific and innovative knowledge (Ritala, et al., 2015), enabling the integration between available knowledge and new knowledge obtained through the established relationship (Colombo & Delmastro, 2002).

In addition, this relationship extends access to broad perspectives and experiences (Stam

& Elfring, 2008), as well as the intermediation of different sources of knowledge (Hameed, et al., 2019; Colombo & Delmastro, 2002). Thus, connections between organizations and research institutions with substantial advances in basic science are emphasized (Orsenigo et al., 2001), given that the direction of basic research to applied research and its application to organizational processes allows the integration of research with organizational innovations (Lofsten & Lindelof, 2005).

It is also worth noting that associative institutions play a central role in the innovation process, since these institutions act as innovation intermediaries, encouraging and potentiating the innovative arrangement (Watkins et al., 2015). The so-called innovation intermediaries are organizations that act as a link between those involved in the innovation process and whose purpose is to develop the innovative aspects of organizations (Howells, 2006). Thus, these institutions work in the dissemination of information to organizations and in representation and political ties, promoting negotiations of conditions and incentives for innovation (Watkins et al., 2015).

In addition, support institutions influence the innovative capacity of organizations through the development of technical capabilities (Joo, Eom, & Shin, 2017). Thus, it is understood that the experiences and training promoted by these institutions promote qualification of the workforce (Campos, 2006), which is necessary for organizations to obtain the necessary skills for the generation and absorption of organizational innovations. (Minh, et al., 2017; Hameed, et al., 2012).

Therefore, supporting institutions, in addition to directly contributing to the development of innovation capacity, can facilitate the transfer of knowledge, information and resources that influence innovativeness (Wu et al., 2015; Roundy & Bayer, 2019; Watkins, et al., 2015; Chung, 2019; Cooper, et al., 2012; Cui et al., 2018).

Based on these considerations, the second proposal of the study follows:

Proposition 2: The relationship with support institutions maximizes innovativeness.

The institutional relationship can integrate network structures (McEvily & Zaheer, 1999), which are important for the management of organizations and the formation of innovations (Provan & Kenis, 2007). These organizational networks, which represent long-term relationships between two or more organizations (Thorelli, 1986), are a valuable source of knowledge, generated from organizational interactions (Johanson & Mattsson, 1987). It should be noted, therefore, that organizations do not relate only in a dyad way, but there are also innumerable indirect links with third parties (Jones, Hesterly, & Borgatti, 1997), and there is a positive association between the collaborative relationships formed among them and the development of innovation (Shan, Walter, & Kogut, 1994).

Studies have demonstrated the importance of integrating networks of inter-organizational relationships to foster innovation (Díez-Vial & Montoro-Sánchez, 2015; Gilsing, et al., 2008; Ahuja, 2000), given that the external sources of new knowledge and ideas often can have more express value than the ones obtained from internal sources (Sakkab, 2002). Hence, a broad number of external knowledge sources makes possible that the organizations obtain ideas and resources to increase the conditions of the diversified exploration innovative opportunities (Laursen & Salter, 2006).

In this sense, the interrelationships and position of the organization in the network consist of aspects that affect the innovative development (Shu, Ren, & Zheng, 2018; Aarikka-Stenroos et al., 2017). However, increasing the number of connections, disregarding the diversity of the actors involved, can create inefficient arrangements, which generate information and resources with high redundancy, minimal diversity, and expressive costs

(Baum, Calabrese, & Silverman, 2000). Thus, Laursen e Salter (2006) noticed that the breadth of players's set – that is, the number of external knowledge sources that the firms use to execute their innovative activities – influence significantly the innovation performance.

Hence, studies show that non-redundant contacts[1] and the expressiveness of structural holes[2] (Burt, 1992; Ahuja, 2000; Gilsing et al., 2008) may influence the innovative development of organizations; bearing in mind that the highly redundant contacts are important for the information absorption (Gilsing et al., 2008), the expressively redundant arrangements can hinder the reach of information essential for adequate organizational adaptation, consequently limiting the number of connections with those organizations attuned to emerging innovations (Uzzi, 1997). Therefore, it is important for organizations to maintain new contacts to access new and diverse information (Levin & Cross, 2004), since network density may limit the possibility of innovative development (Gilsing et al., 2008), once the accessed information is reiterated and do not give access to new broad ideas and knowledge to foster innovation.

Thus, an organization integrated with a diffused network can benefit from relations through non-redundant information (Burt, 1992), which are considered important to the development of innovation (Bergé, Scherngell, & Wanzenböck, 2017; Gilsing et al., 2008, Ahuja, 2000).

It is important to note that networks that have expressive structural holes provide access to a variety of information sources (Hargadon & Sutton, 1997; Ahuja, 2000), since they connect non-redundant contacts (Burt, 1992; Hargadon & Sutton, 1997; Gao, Xie, & Zhou, 2015), promoting the generation of new ideas and increasing innovative potential (Ahuja, 2000). However, in this context, the bonding of non-directly related parties is essential, what can be fostered by the performance of intermediaries, who are actors that promote the connection between parties that are not directly related (Howells, 2006). Therefore, the intermediary can act in brokegage between two or more actors (Küçüksayraç, et al., 2015; McEvily & Zaheer, 1999), promoting, this way, the transfer of knowledge and resources necessary for the development of innovation (Kanda , et al., 2019).

In this sense, studies have identified the role of intermediaries performed by different institutions, which include associative organizations (Küçüksayraç et al., 2015; Watkins et al., 2015), regional institutions (McEvily & Zaheer, 1999), universities (Molina-Morales & Martínez-Cháfer, 2014), research organizations (Giannopoulou et al., 2019), incubation centers (Shih and Aaboen, 2017; Su and Wu, 2015), among others.

Thus, support institutions play an important role in structural holes, which can act as intermediation between different actors (Howells, 2006), which makes it possible to reach external sources of new knowledge (Molina-Morales & Martínez-Fernández, 2004), as well as expanding access to resources (Doloreux & Melançon, 2009) and support for technology transfer between organizations (Howells, 2006). Thus, these institutions promote links between actors that would not be related due to the lack of direct connections between them.

Given this consideration, the intermediation in the structural holes allows the diffusion of the information among the actors of the network and the access to non-redundant information (Carnovale, Rogers, & Yeniyurt, 2016). Thus, middlemen fill a gap in the network, connecting actors with common interests, sharing information, and enabling linkages between non-interrelated actors directly (Aldrich & Zimmer, 1986).

It is clear that support institutions act as intermediaries of inter-organizational relationships (Watkins, et al., 2015; Hameed, Staden, & Kwon, 2018; Roundy & Bayer, 2019; Cooper et al., 2012), facilitating the mediation between indirect contacts and the expansion of the set of non-redundant contacts (Cui, Fan, Guo, & Fan, 2018; Gilsing et al., 2008; Levin & Cross, 2004) which are important towards reaching a diversity of valuable information and

contributing to the innovative potential of organizations (Gilsing et al., 2008; Levin & Cross, 2004).

In this sense, the following propositions are presented:

Proposition 3: The relationship with support institutions increases access to non-redundant contacts.

Proposition 4: Non-redundant contacts influence innovativeness.

Due to the dynamicity of organizational environments, several studies emphasize organizations' capabilities and resources as ways of dealing with environmental uncertainties (Teece, Peteraf, & Leih, 2016; Meinhardt, Junge, & Weiss, 2018). In view of this, there is the understanding that organizations must be innovative in a highly volatile environment.

It is observed that the dizzying change in the market allows organizations to position themselves based on innovativeness (Hooley, Broderick, & Möller, 1998). This, in turn, makes it possible to transform the intangibility of opportunities into tangible performances (Wang et al., 2018). In this way, it can be said that innovativeness is a necessary aspect of the organization that seeks to maximize its performance and maintain advantages in the market context (Sulistyo & Siyamtinah, 2016).

Based on this logic, the level of dependence of organizational resources, as well as their criticality, can affect organizational performance (Rehme, et al, 2016; Ulrich & Barney, 1984). Therefore, it is important that the organizations maximize their innovative capacity, so they can extend their alternatives of access and usage of their organizational resources, and, this way, reduce their dependence level from a specific ser of resources. (Li & Atuahene-Gima, 2001; Jean, Sinkovics, & Kim, 2017). In addition to it, the possibility to introduce new products and entering new markets minimize the conditions imposed by the effect of the cyclic fluctuations and the seasonal current demand of the products offered by the organization. Thus, product innovation becomes an important driver to face environmental uncertainties, due to the fact that the different kind of products hold the risks (Penrose, 1959).

It should be noted that innovativeness is an important organizational capacity, since it widens the list of goods and services, influencing the maximization of sales and competitiveness (Battor & Battor, 2010). Besides, it also allows the optimization of current organizational procedures, allowing the reduction of costs and the supply of products or services with better quality (Dhanora, Sharma, & Khachoo, 2018). Furthermore, it favors the inclusion of new organizational mechanisms, improving internal and external relations (Ali, Kan, & Sarstedt, 2016). In this sense, it is important to highlight the importance of the development of appropriate innovative capacities (Rajapathirana & Hui, 2017; Wang et al., 2018).

Hence, organizations can develop changes in their processes and in the usage of their resources and, this way, the innovations of products, processes, organizational and marketing, can represent the set of changes of the firm’s activities (OECD, 2005). In this vein, innovativeness makes it possible for organizations to provide for market needs (Adler & Shenbar, 1990), to optimize processes (Rajapathirana & Hui, 2017), and to strengthen organizational resource management (Lawson & Samson, 2001), thus generating higher growth rates (Geroski, Machin, & Reenen, 1993) and influencing organizational performance (Hult, Hurley, & Knight, 2004; Ali et al., 2016).

Some studies point to the existence of a positive relationship between the development of innovativeness and the organizational performance (Sulistyo & Siyamtinah, 2016; Rehman, 2016; Ali et al., 2016). Additionally, it is emphasized that innovation capacity has a positive

impact on different innovations and exerts influence on organizational performance (Rajapathirana & Hui, 2017).

Based on these assertions, the last proposition is presented:

Proposition 5: Innovativeness enhances organizational performance.

The set of propositions and their relations are represented in Figure 3.

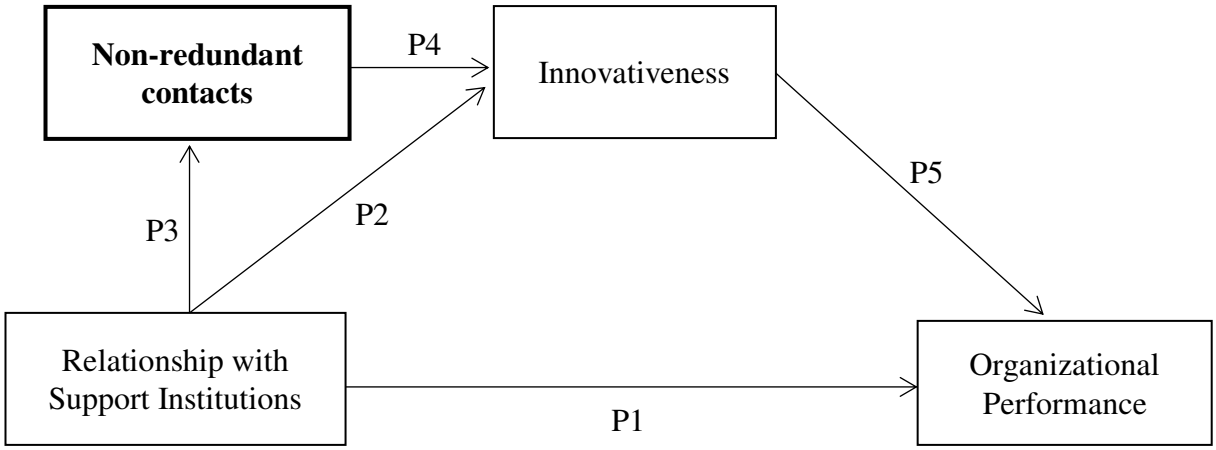

Figure 3. Theoretical model based on the propositions

It is important to highlight the mediation performed by the non-redundant contacts in the effect of the relation with support institutions to foster innovativeness. In this sense, it is observed that one of the main roles that the support institutions can perform is to allow to the organizations the access to players those players that would not be accessed without the activities of these institutions. Thus, the development of innovation, that is linked to the access of diversified information and resources, is highly related to the contact with different and diversified players. In this vein, it could be inferred that the role of the supporting institutions is significantly relevant for the innovation activities, favoring the widening of the sources of information and resources through the mediation performed between the players that are not directly related; in line with the research by Laursen e Salter (2006) who identified that a central aspect of the innovation process is linked to how organizations seek new ideas. Thus, support institutions can enhance the ability of organizations to access new and diverse ideas in order to maximize their capacity for innovation.

5. CONCLUSIONS

Based on the theoretical analysis, it was identified that the network approach is the main theoretical basis that underlies the analyzed context; in addition, universities, public organizations, incubators, and business development centers are the main support institutions studied; and organizational performance measures involve four categories: financial, commercial, operational, people and corporate performance.

In order to analyze the influence of organizational variables on organizational innovativeness and performance, the following assertions were proposed: the relationship with support institutions enhances organizational performance, maximizes innovativeness and access to non-redundant contacts; the non-redundant contacts exert an influence on innovativeness, boosted by organizational performance.

It can be argued that the relationship with support institutions maximizes organizational performance due to the facilitation of access to important information, as well as intermediation

among organizations, knowledge exchange, organizational representation and access to essential resources. Furthermore, this relationship maximizes the organizations' innovativeness by facilitating the acquisition of specific and diversified information and knowledge, as well as access to comprehensive organizational experiences.

In addition, the relationship with support institutions enhances the access to non-redundant contacts, due to the intermediation of these institutions in the different inter-organizational relationships. These contacts influence innovativeness because of access to new and diversified information and reach to unique and valuable information with the opportunity to get hold of new organizational perspectives.

Finally, it is argued that innovativeness boosts organizational performance due to the possibility of improving products and services and the development of new products, according to market needs, positively impacting commercial results. Also, the innovativeness allows for the optimization of the organizational processes; consequently, minimizing costs. In addition, it facilitates the improvement of the organizational management and its resources.

In the light of what has been presented, this literature review identified the influence of support institutions on the innovativeness and performance of organizations and presented theoretical propositions that can be empirically tested in future studies on inter-organizational relations, innovation and strategy; thus providing valuable contribution to both to the academic and professional contexts.

It is suggested that the theoretical model presented in the present study be tested in the context of the organizations involved in cooperativism, given that creation of innovative products and processes is an essential aspect of cooperatives (Gallego-Bono & Chaves-Avila, 2016). Thus, it is understood that innovativeness can impact results in this organizational context (Ali, Seny, & Sarstedt, 2016; Camisón & Villar-López, 2012). And as a consequence of the results of cooperativism, a greater local development is expected, both in the economic and social aspects (Guirado et al., 2017; Stattman & Mol, 2014).

Finally, the importance of investigating the different actions of the support institutions in promoting the dissemination of non-redundant information is herein emphasized. Thus, it is suggested that new studies analyze the relationship of partnerships with technical training institutions with organizational performance, investigate the influence of relations with supporting institutions on cost of supply, and the influence of intermediation of the associative institutions on political actions and the relation of this intermediation with the performance of the linked organizations.

Notes

[1] Contacts are considered as non-redundant assuming the access to diverse players; on the contrary, redundant contacts consider the same players in the net and, this so, the same information (Pitt, Merwe, & Berthon, 2006).

[2] Structural holes are empty spaces among players in the net with absence of direct relationship. These holes exist when two players are not connected directly, but through a third player to make the connection (Balestrin & Verschoore, 2016).

REFERENCES

Aarikka-Stenroos, L., Jaakkola, E., Harrison, D., & Mäkitalo-Keinonen, T. (2017). How to manage innovation processes in extensive networks: A longitudinal study. *Industrial Marketing Management*, *67*, 88–105.

Adler, P. S., & Shenbar, A. (1990). Adapting Your Technological Base : The Organizational Challenge. *Sloan Management Review*, *32*(1), 25–37.

Ahuja, G. (2000). Collaboration Networks , Structural Holes , and Innovation: Longitudinal Study. *Administrative Science Quarterly*, *45*(3), 425–455.

Alaaraj, S., Mohamed, Z. A., & Ahmad Bustamam, U. S. (2018). External growth strategies and organizational performance in emerging markets: The mediating role of inter-organizational trust. *Review of International*

Business and Strategy, *28*(2), 206–222. https://doi.org/10.1108/RIBS-09-2017-0079
Ali, M., Seny Kan, K. A., & Sarstedt, M. (2016). Direct and configurational paths of absorptive capacity and organizational innovation to successful organizational performance. *Journal Business Research*, 5317–5323
André, K., Cho, C. H., & Laine, M. (2018). Reference points for measuring social performance: Case study of a social business venture. *Journal of Business Venturing*, *33*(5), 660–678.
Balestrin, A., & Verschoore, J. (2016). *Redes de Cooperação Empresarial: Estratégias de Gestão da Nova Economia.* (2nd ed.). Porto Alegre: Bookman.
Battor, M., & Battor, M. (2010). The impact of customer relationship management capability on innovation and performance advantages: Testing a mediated model. *Journal of Marketing Management*, *26*(9–10), 842–857.
Baum, J. A. C., Calabrese, T., & Silverman, B. S. (2000). Don't Go It Alone: Alliance Network Composition and Startups' Performance in Canadian Biotechnology. *Strategic Management Journal*, *21*(3), 267–294.
Beck, T., Degryse, H., De Haas, R., & van Horen, N. (2018). When arm's length is too far: Relationship banking over the credit cycle. *Journal of Financial Economics*, *127*(1), 174–196.
Belso-Martínez, J. é. A., Expósito-Langa, M., Mas-Verdú, F., & Molina-Morales, F. X. (2017). Dynamics of brokerage positions in clusters: Evidence from the Spanish foodstuffs industry. *Sustainability*, *9*(2).
Bergé, L., Scherngell, T., & Wanzenböck, I. (2017). Bridging centrality as an indicator to measure the 'bridging role' of actors in networks: An application to the European Nanotechnology co-publication network. *Journal of Informetrics*, *11*(4), 1031–1042. https://doi.org/10.1016/j.joi.2017.09.004
Brusco, S. (1993). Pequeñas empresas y prestación de servicios reales. In F. Pyke & W. Sergenberger (Eds.), *Los Distritos Industriales y las Pequeñas Empresas: Distritos Industriales y Regeneración Económica Local* (pp. 235–254). 235-254: MTSS.
Burt, R. S. (1992). *Structural Holes*. Cambridge (Mass.): Harvard University Press.
Camisón, C., & Villar-López, A. (2012). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, *67*(1), 2891–2902.
Carnovale, S., Rogers, D. S., & Yeniyurt, S. (2016). Bridging structural holes in global manufacturing equity based partnerships: A network analysis of domestic vs. international joint venture formations. *Journal of Purchasing and Supply Management*, *22*(1), 7–17. https://doi.org/10.1016/j.pursup.2015.08.002
Chavez, R., Yu, W., Jacobs, M. A., & Feng, M. (2017). Manufacturing capability and organizational performance: The role of entrepreneurial orientation. *International Journal of Production Economics*, *184*, 33–46.
Chen, S. H., & Lin, W. T. (2017). The dynamic role of universities in developing an emerging sector: a case study of the biotechnology sector. *Technological Forecasting and Social Change*, *123*, 283–297.
Chen, Y. S., Su, H. C., & Ro, Y. K. (2017). The co-evolution of supplier relationship quality and product quality in the U.S. auto industry: A cultural perspective. *International Journal of Production Economics*, *184*(February 2016), 245–255. https://doi.org/10.1016/j.ijpe.2016.12.020
Chung, H. F. L. (2019). How guanxi networking matters in the relation between market orientation and innovation in Asian emerging economies – the case of Markor. *Journal of Business and Industrial Marketing*, *34*(4), 836–849. https://doi.org/10.1108/JBIM-05-2017-0115
Colombo, M. G., & Delmastro, M. (2002). How effective are technology incubators? *Research Policy*, 1103–1122.
Cooper, C. E., Hamel, S. A., & Connaughton, S. L. (2012). Motivations and obstacles to networking in a university business incubator. *Journal of Technology Transfer*, *37*(4), 433–453.
Cui, L., Fan, D., Guo, F., & Fan, Y. (2018). Explicating the relationship of entrepreneurial orientation and firm performance: Underlying mechanisms in the context of an emerging market. *Industrial Marketing Management*, *71*(September), 27–40. https://doi.org/10.1016/j.indmarman.2017.11.003
Damke, E. J., Gimenez, F. A. P., & Damke, J. F. W. (2018). Strategic configurations and performance: a study in micro and small business retailers. *RAUSP Management Journal*, *53*(1), 11–22.
Decarolis, D. M., & Deeds, D. L. (1999). The Impact of Stocks and Flows of Organizational Knowledge on Firm Performance: An Empirical Investigation of the Biotechnology Industry. *Strategic Management Journal*, *20*(10), 953–968.
Dhanora, M., Sharma, R., & Khachoo, Q. (2017). Non-linear impact of product and process innovations on market power: A theoretical and empirical investigation. *Economic Modelling*, *70*(February), 67–77.
Díez-Vial, I., & Montoro-Sánchez, Á. (2015). How knowledge links with universities may foster innovation: The case of a science park. *Technovation*, *50–51*, 41–52. https://doi.org/10.1016/j.technovation.2015.09.001
Esparcia, J. (2014). Innovation and networks in rural areas. An analysis from European innovative projects. *Journal of Rural Studies*, *34*, 1–14.
Gallego-Bono, J. R., & Chaves-Avila, R. (2016). Innovation cooperative systems and structural change: An evolutionary analysis of Anecoop and Mondragon cases. *Journal of Business Research*, *69*(11), 4907–4911.
Gao, G. Y., Xie, E., & Zhou, K. Z. (2015). How does technological diversity in supplier network drive buyer innovation? Relational process and contingencies. *Journal of Operations Management*, *36*, 165–177.
Geroski, P., Machin, S., & Reenen, J. Van. (1993). The Profitability of Innovating Firms. *The RAND Journal of*

Economics, *24*(2), 198–211.
Giannopoulou, E., Barlatier, P. J., & Pénin, J. (2019). Same but different? Research and technology organizations, universities and the innovation activities of firms. *Research Policy*, *48*(1), 223–233.
Gilsing, V., Nooteboom, B., Vanhaverbeke, W., Duysters, G., & Oord, A. Van Den. (2008). Network embeddedness and the exploration of novel technologies: Technological distance , betweenness centrality and density. *Research Policy*, *37*, 1717–1731. https://doi.org/10.1016/j.respol.2008.08.010
Granovetter, M. (1985). Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology*, *91*(3), 481–510.
Guirado, C., Valldeperas, N., Tulla, A. F., Sendra, L., Badia, A., Evard, C., … Vera, A. (2017). Social farming in Catalonia: Rural local development, employment opportunities and empowerment for people at risk of social exclusion. *Journal of Rural Studies*, *56*, 180–197. https://doi.org/10.1016/j.jrurstud.2017.09.015
Gulati, R. (1998). Alliances and Networks. *Strategic Management Journal*, *19*(4), 293–317.
Hameed, M. A., Counsell, S., & Swift, S. (2012). A meta-analysis of relationships between organizational characteristics and IT innovation adoption in organizations. *Information and Management*, *49*(5), 218–232.
Hameed, T., von Staden, P., & Kwon, K.-S. (2019). Impediments to sustaining South Korea's economic development: Pathologies of cooperation in intra-teamdynamics of technology commercialization. *Sustainability (Switzerland)*, *11*(11). https://doi.org/10.3390/su11113040
Hameed, Tahir, von Staden, P., & Kwon, K. S. (2018). Sustainable economic growth and the adaptability of a national system of innovation: A socio-cognitive explanation for South Korea's mired technology transfer and commercialization process. *Sustainability (Switzerland)*, *10*(5). https://doi.org/10.3390/su10051397
Hargadon, A., & Sutton, R. (1997). Technology Brokering and Innovation in a Product Development Firm. *Administrative Science Quarterly*, *42*(4), 716–749.
Helmers, C., Patnam, M., & Rau, P. R. (2017). Do board interlocks increase innovation? Evidence from a corporate governance reform in India. *Journal of Banking and Finance*, *80*, 51–70.
Homburg, C., Alavi, S., Rajab, T., & Wieseke, J. (2017). The contingent roles of R&D–sales versus R&D–marketing cooperation in new-product development of business-to-business firms. *International Journal of Research in Marketing*, *34*(1), 212–230. https://doi.org/10.1016/j.ijresmar.2016.05.008
Hooley, G., Broderick, A., & Möller, K. (1998). Competitive positioning and the resource-based view of the firm. *Journal of Strategic Marketing*, *6*(2), 97–115. https://doi.org/10.1080/09652549800000003
Howells, J. (2006). Intermediation and the role of intermediaries in innovation. *Research Policy*, *35*, 715–728.
Hult, G. T. M., Hurley, R. F., & Knight, G. A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management*, *33*, 429–438. https://doi.org/10.1016/j.indmarman.2003.08.015
Jarillo, J. C. (1988). On strategic networks. *Strategic Management Journal*, *9*, 31–41.
Jean, B. R. J., Sinkovics, R. R., & Kim, D. (2017). Antecedents and Outcomes of Supplier Innovativeness in International Customer–Supplier Relationships: The Role of Knowledge Distance. *Management International Review*, *57*(1), 121–151. https://doi.org/10.1007/s11575-016-0291-x
Johanson, J., & Mattsson, L. (1987). Interorganizational Relations in Industrial Systems: A Network Approach Compared with the Transaction-Cost Approach. *International Studies of Management & Organization*, *XVII*(1), 34–48. https://doi.org/10.1080/00208825.1987.11656444
Jones, C., Hesterly, W. S., & Borgatti, S. P. (1997). A General Theory of Network Governance: Exchange Conditions and Social Mechanisms. *Academy of Management Review*, *22*(4), 911–945.
Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*.
Lancker, V. J., Mondelaers, K., Wauters, E., & Van Huylenbroeck, G. (2015). The Organizational Innovation System: A systemic framework for radical innovation at the organizational level. *Technovation*, 40–50.
Laursen, K., & Salter, A. (2006). Open for innovation: The role of openness in explaining innovation performance among U.K. manufacturing firms. *Strategic Management Journal*, *27*(2), 131–150.
Lavie, D. (2006). The Competitive Advantage of Interconnected Firms: An Extension of The Resource-Based View. *Academy of Management Review*, *31*(3), 638–658. https://doi.org/10.1145/2611286.2611321
Lawson, B., & Samson, D. (2001). Developing Innovation Capability in Organizations a Dynamic Capabilities Approach. *International Journal of Innovation Management*, *5*(3), 377–400.
Levin, D. Z., & Cross, R. (2004). The Strength of Weak Ties You Can Trust : The Mediating Role of Trust in Effective Knowledge Transfer. *Management Science Publication*, *50*(11), 1477–1490.
Li, H., & Atuahene-Gima, K. (2001). Product innovation strategy and the performance of new technology ventures in China. *Academy of Management Journal*, *44*(6), 1123–1134. https://doi.org/10.2307/3069392
Li, S., Rao, S. S., Ragu-Nathan, T. S., & Ragu-Nathan, B. (2005). Development and validation of a measurement instrument for studying supply chain management practices. *Journal of Operations Management*, 18–641.
Lo, F. Y., & Fu, P. H. (2016). The interaction of chief executive officer and top management team on organization

performance. *Journal of Business Research*, *69*(6), 2182–2186. https://doi.org/10.1016/j.jbusres.2015.12.027
Lofsten, H., & Lindelof, P. (2005). R & D networks and product innovation patterns — academic and non-academic new technology-based firms on Science Parks. *Technovation*, *25*, 1025–1037.
Martin-Rojas, R., Garcia-Morales, V. J., & Gonzalez-Alvarez, N. (2019). Technological antecedents of entrepreneurship and its consequences for organizational performance. *Technological Forecasting and Social Change*, *147*, 22–35. https://doi.org/10.1016/j.techfore.2019.06.018
McEvily, B., & Zaheer, A. (1999). Bridging Ties : A Source of Firm Heterogeneity in Competitive Capabilities. *Strategic Management Journal*, *20*, 1133–1156.
Meinhardt, R., Junge, S., & Weiss, M. (2018). The organizational environment with its measures, antecedents, and consequences: a review and research agenda. *Management Review Quarterly*, *68*(2), 195–235.
Molina-Morales, F. X., & Martínez-Fernández, M. T. (2004). How much difference is there between industrial district firms? A net value creation approach. *Research Policy*, *33*(3), 473–476.
Muthuveloo, R., Shanmugam, N., & Teoh, A. P. (2017). The impact of tacit knowledge management on organizational performance: Evidence from Malaysia. *Asia Pacific Management Review*, *22*(4), 192–201.
Navarrete-Hernandez, P., & Navarrete-Hernandez, N. (2018). Unleashing Waste-Pickers' Potential: Supporting Recycling Cooperatives in Santiago de Chile. *World Development*, *101*, 293–310.
Navimipour, N. J., Milani, F. S., & Hossenzadeh, M. (2018). A model for examining the role of effective factors on the performance of organizations. *Technology in Society*. https://doi.org/10.1016/j.techsoc.2018.06.003
OECD. (2005). *Oslo Manual. Proposed Guidelines for Collecting and Interpreting Technological Innovation Data* (Third Edit). Paris: OECD-European Communities.
Oliver, C. (1990). Determinants Interorganizational Relationships : Integration and Future Directions. *Academy of Management Review*, *15*(2), 241–265.
Orsenigo, L., Pammolli, F., & Riccaboni, M. (2001). Technological change and network dynamics Lessons from the pharmaceutical industry.
Oyemomi, O., Liu, S., Neaga, I., Chen, H., & Nakpodia, F. (2018). How cultural impact on knowledge sharing contributes to organizational performance: Using the fsQCA approach. *Journal Business Res 94*, 313–319.
Pagani, R. N., Kovaleski, J. L., & Resende, L. M. (2015). Methodi Ordinatio: a proposed methodology to select and rank relevant scientific papers encompassing the impact factor, number of citation, and year of publication. *Scientometrics*, *105*(3), 2109–2135. https://doi.org/10.1007/s11192-015-1744-x
Pennings, J. M. (1981). Strategically interdependent organizations. In P. C. Nystrom & W. H. Starbuck (Eds.), *Handbook of organizational design* (1st ed.). New York: Oxford University Press.
Penrose, E. (1959). *The Theory ofthe Growth ofthe Firm*. Oxford: Oxford University Press.
Pfeffer, J., & Salancik, G. R. (1978). *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper & Row.
Pitt, L., Merwe, R. Van Der, & Berthon, P. (2006). Swedish BioTech SMEs : The veiled values in online networks. *Technovation*, *26*, 553–560. https://doi.org/10.1016/j.technovation.2005.09.009
Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review Sociology*, 1–24.
Provan, K. G., & Kenis, P. (2007). Modes of Network Governance: Structure , Management , and Effectiveness. *Journal of Public Administration Research and Theory*, 229–252. https://doi.org/10.1093/jopart/mum015
Radziwon, A., & Bogers, M. (2018). Open innovation in SMEs: Exploring inter-organizational relationships in an ecosystem. *Technological Forecasting and Social Change*, *146*, 573–587.
Rajapathirana, R. P. J., & Hui, Y. (2017). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge*, *3*(1), 44–55. https://doi.org/10.1016/j.jik.2017.06.002
Ravichandran, T. (2017). Exploring the relationships between IT competence, innovation capacity and organizational agility. *Journal of Strategic Information Systems*. https://doi.org/10.1016/j.jsis.2017.07.002
Rehman, N.U. (2016). Network alliances and firms' performance: a panel data analysis of Pakistani SMEs. *Eurasian Business Review*, *6*(1), 37–52. https://doi.org/10.1007/s40821-015-0033-1
Rehman, Naqeeb Ur. (2016). Network alliances and firms' performance: a panel data analysis of Pakistani SMEs. *Eurasian Business Review*, *6*(1), 37–52. https://doi.org/10.1007/s40821-015-0033-1
Rehme, J., Nordigården, D., Ellström, D., & Chicksand, D. (2016). Power in distribution channels - Supplier assortment strategy for balancing power. *Industrial Marketing Management*, *54*, 176–187.
Reverte, C., Gómez-Melero, E., & Cegarra-Navarro, J. G. (2016). The influence of corporate social responsibility practices on organizational performance: Evidence from Eco-Responsible Spanish firms. *Journal of Cleaner Production*, *112*, 2870–2884. https://doi.org/10.1016/j.jclepro.2015.09.128
Reynolds, E. B., & Uygun, Y. (2018). Strengthening advanced manufacturing innovation ecosystems: The case of Massachusetts. *Technological Forecasting and Social Change*, *136*, 178–191.
Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of Management*, *35*(3), 718–804.
Ritala, P., Olander, H., Michailova, S., & Husted, K. (2015). Knowledge sharing, knowledge leaking and relative

innovation performance : An empirical study. *Technovation*, *35*, 22–31.
Rivera, M. T., Soderstrom, S. B., & Uzzi, B. (2010). Dynamics of Dyads in Social Networks: Assortative, Relational, and Proximity Mechanisms. *Annual Review of Sociology*, *36*(1), 91–115.
Roundy, P. T., & Bayer, M. A. (2019). To bridge or buffer? A resource dependence theory of nascent entrepreneurial ecosystems. *Journal of Entrepreneurship in Emerging Economies*, *11*(4), 550–575.
Rubera, G., & Kirca, A. H. (2012). Firm Innovativeness and Its Performance Outcomes : A Meta-Analytic Review and. *Journal of Marketing*, *76*, 130–147. https://doi.org/10.1509/jm.10.0494
Rubin, T. H., Aas, T. H., & Stead, A. (2015). Knowledge flow in Technological Business Incubators: Evidence from Australia and Israel. *Technovation*, *41–42*, 11–24. https://doi.org/10.1016/j.technovation.2015.03.002
Rungsithong, R., Meyer, K. E., & Roath, A. S. (2017). Relational capabilities in Thai buyer-supplier relationships. *Journal of Business and Industrial Marketing*, *32*(8), 1228–1244.
Sakkab, N. Y. (2002). Connect & Develop Complements Research & Develop at P&G. *Research-Technology Management*, *45*(2), 38–45.
Schermerhorn, J. R. (1981). Open Questions Limiting the Interorganizational Development. *Group & Organization Studies*, *6*(1), 83–95.
Sears, J. B. (2017). When are acquired technological capabilities complements rather than substitutes? A study on value creation. *Journal of Business Research*, *78*(May 2016), 33–42.
Shu, R., Ren, S., & Zheng, Y. (2018). Building networks into discovery: The link between entrepreneur network capability and entrepreneurial opportunity discovery. *Journal of Business Research*, *85*(71372064), 197–208.
Staber, U. (1987). Structural Constraints on Associative Action in Business: An Empirical Investigation. *Canadian Journal of Administrative Sciences*, *4*(3), 252–265. https://doi.org/10.1111/j.1936-4490.1987.tb00455.x
Stam, W., & Elfring, T. (2008). Entrepreneurial Orientation and New Venture Performance: The Moderating Role of Intra- and Extraindustry Social Capital. *The Academy of Management Journal*, *51*(1), 97–111.
Stattman, S. L., & Mol, A. P. J. (2014). Social sustainability of Brazilian biodiesel: The role of agricultural cooperatives. *Geoforum*, *54*, 282–294. https://doi.org/10.1016/j.geoforum.2014.04.001
Subramony, M., Segers, J., Chadwick, C., & Shyamsunder, A. (2018). Leadership development practice bundles and organizational performance: The mediating role of human capital and social capital. *Journal of Business Research*, *83*(September 2017), 120–129. https://doi.org/10.1016/j.jbusres.2017.09.044
Sulistyo, H., & Siyamtinah. (2016). Innovation capability of SMEs through entrepreneurship, marketing capability, relational capital and empowerment. *Asia Pacific Management Review*, *21*(4), 196–203.
Tajeddini, K., Altinay, L., & Ratten, V. (2017). Service innovativeness and the structuring of organizations: The moderating roles of learning orientation and inter-functional coordination. *International Journal of Hospitality Management*, *65*, 100–114. https://doi.org/10.1016/j.ijhm.2017.06.010
Teece, D., Peteraf, M., & Leih, S. (2016). Dynamic Capabilities and Organizational Agility: Risk, Uncertainty, and Strategy in the Innovation Ecnonomy. *California Management Review*, *58*(4), 13–35.
Thorelli, H. B. (1986). Networks: Between Markets and Hierarchies. *Strategic Management Journal*, *51*, 37–51.
Ulrich, D., & Barney, J. B. (1984). Perspectives in Organizations: Resource Dependence, Efficiency, and Population. *Acoriemy of Management Review*, *9*(3), 471–481.
Urueña, A., Hidalgo, A., & Arenas, Á. E. (2016). Identifying capabilities in innovation projects: Evidences from eHealth. *Journal of Business Research*, *69*(11), 4843–4848. https://doi.org/10.1016/j.jbusres.2016.04.041
Uzzi, B. (1997). Social Structure and Competition in Interfirm Networks : The Paradox of Embeddedness. *Administrative Science Quarterly*, *42*(1), 35–67.
Wang, J. (2018). Innovation and government intervention: A comparison of Singapore and Hong Kong. *Research Policy*, *47*(2), 399–412. https://doi.org/10.1016/j.respol.2017.12.008
Wang, W., Cao, Q., Qin, L., Zhang, Y., Feng, T., & Feng, L. (2019). Uncertain environment, dynamic innovation capabilities and innovation strategies: A case study on Qihoo 360. *Computers in Human Behavior*, 284–294.
Watkins, A., Papaioannou, T., Mugwagwa, J., & Kale, D. (2015). National innovation systems and the intermediary role of industry associations in building institutional capacities for innovation in developing countries: A critical review of the literature. *Research Policy*, *44*(8), 1407–1418.
Wijethilake, C. (2017). Proactive sustainability strategy and corporate sustainability performance: The mediating effect of sustainability control systems. *Journal of Environmental Management*, *196*, 569–582.
Wu, J., Wu, Z., & Zhuo, S. (2015). The effects of institutional quality and diversity of foreign markets on exporting firms ' innovation. *International Business Review*, *24*(6), 1095–1106.
Xie, X., Wang, L., & Zeng, S. (2018). Inter-organizational knowledge acquisition and firms' radical innovation: A moderated mediation analysis. *Journal of Business Research*, *90*(May 2017), 295–306.
Yunis, M., Tarhini, A., & Kassar, A. (2018). The role of ICT and innovation in enhancing organizational performance: The catalysing effect of corporate entrepreneurship. *Journal of Business Research*, 344–356.
Zhang, J. J., & Guan, J. (2018). The time-varying impacts of government incentives on innovation. *Technological Forecasting and Social Change*, *135*(April), 132–144.