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Organization Isomorphism and the Search for Knowledge and its Influence on Innovative Performance: A Study at APL Taquaral Goiás, Brazil

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Abstract

This research sought to analyze the occurrence of organizational isomorphism and search for knowledge among the companies participating in the Local Productive Arrangement of Confections of Taquaral - GO, observing the effects of these elements on the innovative performance of the arrangement. As a methodological path, the exploratory and descriptive nature is recognized. As for the research design, it is understood as a survey, using the scale created by Zhang & Hu (2017). The practice of imitation (organizational isomorphism) by companies was observed, taking into account the two types of knowledge: exploratory and exploitative. It was found that there are institutional practices and strategic actions by the cluster organizations that have isomorphic characteristics, both for coercive and normative nature and for mimetics, in individual and also integrated formats. A framework was developed that demonstrated how organizational isomorphism influences the search for knowledge (Exploratory and Exploitative) in which it was seen that companies are able to innovate in models and materials through imitation, but innovation of processes and new technologies is quite incipient, due to technical and financial incapacity.

Keywords: Local Productive Arrangement (APL). Innovation. Organizational isomorphism. Management and Regionality.

1. Introduction

Local productive arrangements (APLs) are the subject of different academic studies in Brazil (Cassiolato & Lastres, 2003; Brasil, 2010; Machado, 2003; Amato Neto, 2009), in which issues such as regional economic development are raised due to the creation of these structures, as well as job and income generation analysis. These studies observe issues such as dissemination of knowledge and learning among APL member companies and their business partners, with the objective of demonstrating how these agglomerations develop and have access to new markets, starting with the supply of services and products.

According to Poletto (2009), recent reports show that local development models should be based on the concept that the basic factor for development and competitiveness of a given territory is directly supported by the capacity to act in an integrated manner, with the effort of the members of the agglomeration themselves,

based on the resources available in their territory. The capacity to generate, disseminate, and use new knowledge goes beyond the individual firm, becoming continuously dependent on the interaction between firms and those with different institutions in different fields.

Lastres and Cassiolato (2003) consider that the main advantages of studies on the APLs is the fact that they represent a somewhat traditional unit of analysis, based on individual organization, sector, or production chain. Within these, it is possible to make a relationship between the territory and its economic activities, so groups of agents and activities associated with production and innovation are focused. Such activities include spaces where learning takes place and productive and innovative training actions and the development of tacit knowledge are conceived, as well as representing levels related to the policies of access to learning and the conception of training.

Zhang and Hu (2017) consider that normative and mimetic isomorphism exert opposite or negative effects on innovation performance, where as industrial *clusters* develop, the influence of the institutional environment on companies is highly significant. At such a juncture, organizations move toward gradual isomorphism through constant interactions, imitation, and learning. In this process, the close cooperation among *cluster* companies can hinder innovation because it will have more *exploitation* than *exploration*. As isomorphism increases among *cluster* companies, the more organizations may suffer learning obstacles due to inertia and may eventually lose their differentiation.

In relation to the subject of isomorphism, some authors consider that it can have a negative impact on organizations simply because they are involved exclusively with copies of models, which over the years will significantly affect their competitiveness, taking away any kind of advantage they may have in the face of competition, which may lead the organization to cease to exist (Scott, 1987; Kondra & Hinings, 1998; Oliver, 1991).

However, in an uncertain industrial environment, organizations adopt obedient, adaptive attitudes to mediate the stress caused by the environment to achieve legitimacy of survival. In the gradual process resulting from organizational isomorphism, uncertainty decreases, which can lead to a decrease in the risk of failure in the company's objectives, allowing companies to study and accumulate knowledge and technology quickly, which can increase their own innovation capabilities (Mathews, 2002; Hausman, 2005; Shiller, 2005; Hargrave & Van De Ven, 2006; Salmeron & Bueno, 2006). Based on studies that demonstrate the presence of isomorphism in its various forms in the development and institutional survival, the current study examines this phenomenon in the APL of Taquaral clusters in Goiás.

Institutional theory starts from the acceptance and legitimacy of certain practices in organizations, which are therefore adopted to face the competitive pressures of the environment (Cardona et al., 2020).

In this sense, organizations tend to imitate behavioral norms of other actors in the organizational field, which according to DiMaggio and Powell (1983), is very important since, as they belong to the same field, they produce similar services or products and have structural equivalence and connectivity. This ends up generating an increase in the flow of information and development of mutual knowledge among the participants of the organizations.

By associating relevant stakeholders to institutional theory, DiMaggio and Powell (1983) proposed the

idea of dividing predominant sources of institutional pressure on decision makers into three dimensions: coercive, normative, and mimetic pressure.

Institutional coercive pressure stems from organizations facing cultural and social expectations. After all, the company operates in society and therefore inevitably experiences both formal and informal pressure from other organizations, such as government agencies and regulatory standards (DiMaggio & Powell, 1983). Government agencies perfectly illustrate how powerful groups can influence the actions of an organization (Rivera, 2004).

Second, normative pressure occurs due to professional codes, which assume that professionals will follow specific guidelines aligned with formal education conventions and the professional community (DiMaggio & Powell, 1983). Due to social legitimacy, each company is expected to consider or follow standards, norms, and expectations of its external *stakeholders* (McFarland et al., 2008; Lai et al., 2006). In general cases, customer demand shapes a central normative pressure (Zhu & Sarkis, 2007; Hall, 2000).

Finally, mimetic pressure arises when an organization copies other successful competitors on the market. As organizations are inserted in social networks (McFarland et al., 2008), companies in these networks tend to imitate the behaviors of other network members (Henisz & Delios, 2001). In particular, when the organization does not have clarity in establishing its organizational objective or in understanding the technology, there is a greater chance of imitating other companies (DiMaggio & Powell, 1983; Liang et al., 2007).

Based on this discussion, this study brings a relevant contribution to the academic area, and the results expand the knowledge of the dynamics of APLs. By identifying and verifying the occurrence of organizational isomorphism and the search for innovative knowledge in the APL of Taquaral, Goiás, identifying its influence on the innovative performance of the arrangement, and also building a *framework of* how these processes occur, this study can contribute to the implementation of policies for the development of this type of cluster and also open doors for new research on this theme.

2. Theoretical Reference

This study addresses the concepts and theoretical bases of institutional theory, local productive arrangement, isomorphism, and innovation.

2.1 Institutional Theory

The process of homogenization in organizations is known in the literature as institutional isomorphism, in which one unit (organization) in a given population is forced to resemble other units facing the same environmental conditions. In this sense, organizational characteristics are modified to increase compatibility with environmental characteristics (DiMaggio & Powell, 1983).

Institutional theory has proven to be a powerful and popular explanatory tool for analyzing organizational change and behavior. While classic approaches emphasize the idea that organizations are dominated by the role of individuals, rational actors, and their personal preferences and interests, the new institutionalism places great emphasis on the formative role of institutions. The central hypothesis is that

organizational actors always pursue their interests within certain institutional constraints (Greenwood et al. 2008). From this viewpoint, the patterns of organizational actions are shaped more by institutional forces, such as cultural itineraries and norms, than by instrumental calculations (DiMaggio & Powell, 1983; Meyer & Rowan, 1977).

For institutional theory, companies are not only profit-seeking entities, but they also recognize the importance of achieving social legitimacy. Such legitimacy can be understood as the widespread perception or assumption that the actions of an entity are appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995).

Institutions can be understood as regulatory, normative, and cultural cognitive elements that, grouped with activities and resources, provide stability and meaning to social life (Scott, 2008; Li & Cai, 2014).

Institutions regulate economic activities, defining the rules of the game as the basis for production, exchange, and distribution. Thus, it is essential that companies follow the established rules, norms, and belief systems to gain legitimacy and mobilize their political, social, and economic resources to adapt to specific institutional environments to strengthen the company's performance and its acceptance before *stakeholders*. Thus, a process of institutionalization is necessary for the success of such adaptation (Yang & Su, 2014).

Zhang and Hu (2017) consider that, according to institutional theory, an institutional environment has the power to make organizations within it perceive similar rules, norms, and cognitive and cultural pressures, allowing them to act in a similar way to gain recognition and approval, and thus increase their legitimacy. In turn, they can receive support and resource homogeneity is gradually formed.

Companies operating in the same segment that are in the same area and face similar circumstances try to change their state of resource occupation for survival. To compete, small companies tend to imitate larger ones, new companies learn from old companies, and cluster companies share technical and professional innovations. Therefore, to gain legitimacy and survive in a cluster, companies gradually become isomorphic through coercive, mimetic, and regulatory institutional mechanisms. Finally, it can be said that isomorphism can be a process of strategic choice necessary for cluster companies (Zhang & Hu, 2017).

To meet the requirements of regulators, consumers, and the public, an increasing number of companies have integrated products and services for consumers (Hoejmose et al., 2012; Vezzoli et al., 2012). Government policies, laws, and regulations can have positive impacts on the productive chains of agglomerate companies (Linton et al., 2007; Zhu et al., 2005). In addition, policy documents issued by non-governmental organizations such as trade unions, trade associations, club of legal executives, and so on may also encourage companies to adapt institutionally to the pressures they face (Ahi & Searcy, 2013; Phan & Baird, 2015). Gualandris & Kalchschmidt (2014) and Dubey et al. (2015) also show that institutional pressure is an important factor shaping business management strategy in Italy, India, and other regions.

2.2 Organizational Isomorphism

Organizational isomorphism is a coercive process that forces an organization in a given population to resemble other units facing the same set of environmental conditions (DiMaggio & Powell, 1983). Many scholars discuss this phenomenon (Messner et al., 2008; Carolan, 2008; DiMaggio & Powell, 1983; Scott, 1987; Fuentes, 2014; Menkes and Aluchna, 2018).

According to institutional theory, isomorphism among organizations is beneficial, not as a primary means of increasing competitiveness or increasing operational efficiency, but as a legitimate form of survival by consolidating opportunities to survive in a hostile and often also unknown environment (Scott, 1987; Xinxian, 2000).

DiMaggio and Powell (1983) propose three types of isomorphism caused by a powerful institutional environment: coercive, mimetic, and normative.

- Coercive isomorphism occurs due to the influence exerted by norms, laws, and government agencies (DiMaggio & Powell, 1983; Kilbourne et al., 2002; Zhu et al., 2010). These exercise pressures that are mainly linked to issues of political influence and legitimacy problems arising from the results of formal or informal pressures (Quinello, 2007). Hence these pressures are powerful inducers for the inclusion of management practices in organizations. Government demands are everyday examples that can influence the actions of an organization in terms of its practices (Rivera, 2004).
- Mimetic isomorphism occurs when an organization imitates the actions of successful competitors in the market by performing a *benchmarking* of organizational practices (Aerts et al., 2006; DiMaggio & Powell, 1983; Zhu et al., 2010). When a company realizes that another adopts a practice that allows it to improve its managerial capacity or reduce costs, then these organizations tend to act in a similar way to be successful in this aspect (Henisz & Delios, 2001). Thus, mimetic pressures are mainly linked to the patterns of certain social groups as a response to environmental uncertainties and often represent a powerful force in the imitation process (Quinello, 2007).
- Normative isomorphism is normally exercised by the parties interested in the organization, whether internal or external, taking the fact that this search aims at full efficiency and professionalization into account (DiMaggio & Powell, 1983; Zhu et al., 2010). Basically originating from professionalization due to normative pressures, it arises from a collective effort of members of a given occupation to define methods and conditions for their work, in which they establish and create controls on cognitive bases and legitimacy for their occupational autonomies (Quinello, 2007).

Thus, institutional isomorphism is perceived as a way to understand the competition of organizations from a perspective of political power and institutional legitimization, social adequacy, and economic adequacy, which permeate part of modern organizations.

2.2.1 Organizational isomorphism and institutional pressures

Organizational isomorphism is the phenomenon of effective transfer of organizations to the process of institutionalization. Such phenomenon is directed to a homogeneous characteristic of the use of practices, processes, and management by organizations (DiMaggio & Powell, 1983; Pollach, 2015). According to these authors, there are three mechanisms that exert pressure on organizations and promote this isomorphic transfer: normative, coercive and mimetic.

In this context, it is reinforced that normative pressures are usually exercised by internal and external

stakeholders who have an interest in the organization, in which full efficiency and professionalism are sought (DiMaggio & Powell, 1983; Zhu et al., 2010).

Coercive pressures occur through the influence exerted by norms, laws, and government agencies (DiMaggio & Powell, 1983; Kilbourne et al., 2002; Zhu et al., 2010). These pressures are linked, above all, to issues of political influence and legitimacy problems arising from the results of formal or informal pressures (Quinello, 2007). Such pressures are a powerful *driver* for the inclusion of management practices in organizations. Government demands are everyday examples that can influence an organization's actions in terms of its practices (Rivera, 2004).

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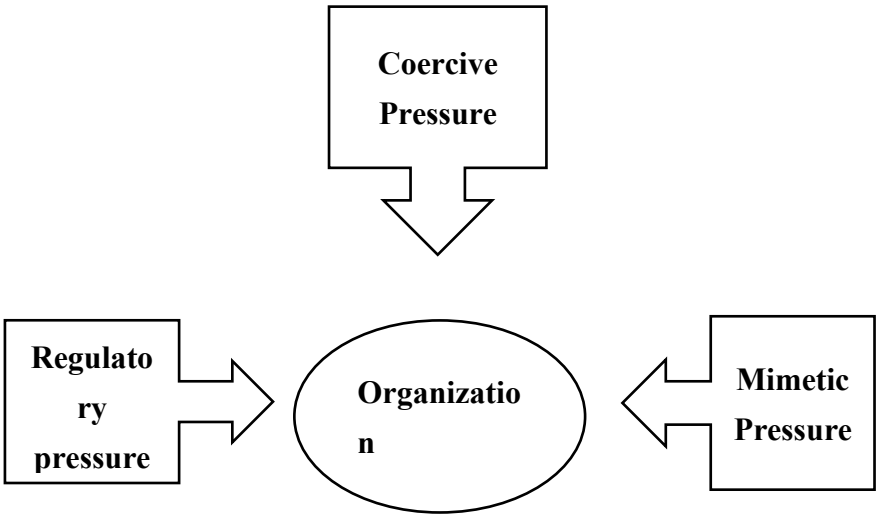
Figure 1 - Isomorphic Pressures of Institutional Theory



Source: Adapted from DiMaggio and Powell (1983).

2.2.2 Organizational Isomorphism and the Search for *Exploratory* Knowledge

For an entity to operate in an active and uncertain environment, knowledge about innovation inside and outside the company can help the organization to perform special tasks or non-structural events, adapting to the impositions and restrictions of the market (Jackson, 1992; Hambrick & Chen, 1996). *Cluster* companies are then more willing to seek *exploratory* knowledge, and if some central members with dominant power in the industrial network accept heterogeneous knowledge from outside the industry, they may require partners to cooperate (Abrahamson & Rosenkopf, 1993).

Thus, the integrated effect of internal and external forces can lead to a high degree of dissemination of *exploratory* knowledge in the organizational system of an APL, whether on the part of government policies or

on the initiative of the members themselves.

2.2.3 Organizational Isomorphism and the Search for *Exploitative* Knowledge

Organizational isomorphism results from imitating other organizations in adapting to the environment and learning from such imitation depends mainly on communication and transmission of information and knowledge (Haunschild & Miner, 1997). When company members in an industrial network recognize their own poor operating performance or are unable to maintain cooperation with other members, they may decide to use their existing relationships in the network system to consult and learn from members of the same or similar companies rather than seeking help from other heterogeneous organizations (Brown & Eisenhardt, 1997).

To reduce the risk created by new strategic orientations, companies seek homogeneous knowledge, which can be more beneficial for their future performance (McDonald & Westphal, 2003). As the result of this organizational isomorphism shows, in the search for *exploitative knowledge*, companies may be more prepared and willing to acquire homogeneous knowledge within the system of which they are part.

2.2.4 Mediating Effect of Isomorphism in the Quest for Knowledge

Organizational isomorphism has strong influences on the acquisition of knowledge by companies and on external learning activities, but the innovation performance will depend mainly on the behaviors of conscious knowledge search during the interaction processes by the organization (Singh, 2005).

As they develop, organizations collect professional knowledge regarding norms and institutional rules, which can improve their performance in innovation. Because they are aware of the normative framework, organizations are able to set their objectives and goals, in addition to knowing the limitations imposed on them, thus being able to clearly define their objectives in pursuit of innovative knowledge (Singh, 2005; Kee-Hung et al., 2006).

2.3 Innovation

From a historical perspective, innovative processes have accompanied the social development of humanity. First, as an informal process, based on empiricism (present in the 17th century). From the industrial evolution of the 18th century, with the use of scientific knowledge as a source of problem solving, innovation has gained autonomy and is no longer related to execution activity (Zawislak, 1995).

Innovation is more than simply designing a new idea, it involves a process of developing its practical use (Tidd et al., 2008). There has been an increase in studies on innovation in recent decades. Although research has highlighted many accumulated certainties, several doubts are still to be addressed, for example, regarding its concept (Moreira & Queiroz, 2007).

Since Schumpeter's studies, companies treat innovations as a way to achieve additional gains by means of competitive advantages resulting from the development of new products or by innovating processes that add value for the client, having the economic approach at the center of activities (Dariot & Nascimento, 1990).

Schumpeter (1997) characterizes innovation as responsible for the dynamic impulse of the capitalist

economy, in which these innovations reflect the essence of capitalism, composing its organization and internal performance. Since innovation is creation, which when placed in the market is capable of changing the existing order, an innovation can be understood as a new product, a change in the quality of an existing product, or a new method of production, for example.

Cassiolato et al. (2007) characterize innovation as an interactive phenomenon, endogenous to competitive processes and inherent to specific technological regimes. "Its introduction accelerates the obsolescence of the means of production and of consumer goods themselves" (TIGRE, 2006, p. 29), transforms technological standards, the productive process, and generates competitiveness for companies (Tidd et al., 2008). Cassiolato et al. (2007) suggest that innovation goes beyond radical changes in products and processes, also relating to incremental and organizational changes. In this respect, it is worth mentioning that Schumpeter did not see innovation only in terms of product and process, but also in terms of opening new markets, acquiring a new source of raw material supply and in terms of the emergence of a new company in a given industry (Isidro & Guimarães, 2010).

For Setyanti and Troena (2013), to innovate is to successfully implement a new idea through the mobilization of knowledge, technological skills, and experience to create products, processes, and services. In this sense, innovation is the opening and use of new knowledge, technology, and creative processes to create a product/service according to the wishes of customers.

Giroletti et al. (2012, p. 617) understand innovation as "[...] the creation of new knowledge or the combination of existing knowledge that can be transformed into new products or processes that have economic value." Furthermore, "innovation is perceived as an active process in which knowledge is accumulated through learning and interaction" (OECD, 2005, p. 96). Anjo et al. (2012) view innovation as essentially about identifying opportunities that others do not see or do not realize their real potential.

Most of the time, the definition of innovation is associated with novelty (Johannessen et al., 2001; Damanpour & Wiscnevsky, 2006; Cillo et al., 2010; Wen-Cheng et al., 2011, IBGE-PINTEC, 2016). In this way, innovation is related to the innovative degree of the new product or service compared to the previous ones and can be considered new for an individual, an institution, or even the world. It can also be associated with the clothing industry, since the use of new materials, combined with the fact that new machines are incorporated into production, whether for cutting, stamping, or sewing, would enter within the context acceptable for innovation.

2.3.1 Imitation as a Form of Innovation in the Clothing Industry

Innovation is a key factor in supporting economic growth, as companies can achieve considerable competitive advantages through it, even if they are surrounded by risks and uncertainties in the mix of information, knowledge, and creativity (Brum & Scherer, 2006; Damanpour & Wiscnevsky, 2006).

Imitation is one of several means of disseminating innovation, so it is possible to obtain skills to innovate and develop innovations by adopting imitative strategies (Niosi, 2012). From this perspective, Macedo and Bataglia (2012) argue that innovation and imitation are complementary phenomena and the search for competitive advantage is responsible for what is being put on the market.

Innovation in the clothing industry is characterized by differentiating what is new based on recent models (Caulkins et al., 2007). However, due to the transience and versatility of fashion, as well as the need to meet consumer demands, the fashion industry faces innovation challenges in the following areas: aesthetics, in minimal details that involve colors, designs, lengths, and competitors' prices. This implies a constant search for productive quality to meet the market that is characterized by high power of adaptation and flexibility (MDIC & IEL, 2005; Pinheiro & Araújo, 2006; Rüthschilling, 2009).

Fashion is inseparable from innovation, since its transience allied to its short life cycle imposes constant transformation, which can be in mere details, such as in the modeling of clothing, hence the importance of always having novelties for the consumer. In this industry, many authors defend the predominant existence of strategic imitation because it accompanies a simpler strategy and lower costs through the adaptation of products to conform to the main names in fashion at the time (Caulkins et al., 2007). Imitation is the great diffuser of innovation (Niosi, 2012). Moreover, through the imitation strategy, it is possible to acquire knowledge to innovate and also to develop innovations. Macedo and Bataglia (2012) consider that the phenomena of innovation and imitation are complementary and that the caution regarding what is being inserted in the market is caused by the search for competitive advantage.

To define the types of imitation, Niosi (2012) lists forgeries, clones, creative adaptations, *design* copying, technology adaptation for another industry, simplification of the original product, and repositioning of the original product to another segment. Valdani and Arbore (2007) propose other forms: clone, and marginal, incremental, and creative imitations.

Carvalho and Serra (1999) and Garcia et al. (2005) highlight the fact that in the Brazilian industry, the presentation of new collections and models is insignificant and is generally chosen to imitate models from the major international fashion broadcasters, in the case of Europe and/or the United States, but adapting these models to local individualities of climate and availability of raw materials.

In a survey conducted by Calíope and Da Silva filho (2016) at a clothing fair in the state of Ceará, it was found that clothing industries use pieces and models from the media (television and internet) and other stores (fairs, exhibitions, and malls), which they imitate to create their models, making only minimal adjustments. Companies possibly have this structure to be able to guarantee competitive prices in the face of a market as momentary and volatile as fashion, which demands speed and innovation as a way to survive or win new markets.

Hence, it can be seen that the imitative strategy adopted by clothing companies is acceptable, because it can promote learning and contribute to the emergence and dissemination of innovations among companies of this type. Besides being able to provide imitating companies with competitive advantages, they have the possibility to offer a product similar to the innovative company, with lower costs and, in some cases, even improvements in relation to the original product.

2.3.2 The Pursuit of *Exploratory* Knowledge and Innovative Performance

The search for *exploratory* knowledge has a fundamental influence on the generation of innovative ideas and the discovery of innovative solutions (Ahuja & Lampert, 2001; Kim & Park, 2013). At such a

juncture, diversified knowledge is conducive to the success of business innovation and also increases its competitive advantage (Leiponen & Helfat, 2010).

Empirical research has shown that the search for *exploratory* knowledge has a positive influence on the company's innovation performance (Rosenkopf & Nerkar, 2001; Wei-Long et al., 2012; Katila & Ahuja, 2002). However, by excessively expanding the scope of research, one can increase the costs of knowledge integration, decentralize the company's attention, or even reduce its innovative performance (Patel & Have, 2010).

Some empirical studies conducted in different countries and industries also state that exploratory searches for innovative knowledge by *cluster* companies have U-shaped effects on innovation performance (Laursen & Salter, 2006; Ahuja & Lampert, 2001; Patel & Have, 2010).

2.3.3 The Pursuit of *Exploitative* Knowledge and Innovative Performance

The search for *exploitative* knowledge causes companies to expand and optimize their original knowledge, which leads them to study extensively and develop new skills (Makadok & Walker, 1996). Other studies also indicate that this search for knowledge allows them to better adapt to environmental changes (Katila, 2002; Laursen & Salter, 2004).

In this scenario, the search for *exploitative* knowledge offers the advantages of being low risk and low cost, and repeated research on all existing knowledge can make the company more professional and also promote incremental innovation (Rosenkopf & Nerkar, 2001).

Some empirical studies have suggested that the search for *exploitative* knowledge has a positive influence on innovation performance (Phene et al., 2006; Nerkar, 2003), but others have observed that this cannot lead to knowledge diversity (Rosenkopf & Nerkar, 2001).

Chesbrough (2003) considers that most of the knowledge essential to support innovation should be obtained outside the organization or other technical fields. Therefore, an excessive dependence on *exploitative* knowledge can result in *core rigidity* (Leonard-Barton, 1992) and competence traps (Levinthal & March, 1993), which can result in the failure of the organization, even contributing to its death. March (1991) already described that these results prevent innovation and can even be fatal for the company.

2.3.4 Analysis of innovative performance through exploratory and exploitative knowledge search

The understanding of the additional benefits of the search for *exploratory* and *exploitative* knowledge is through studies that suggest that an appropriate balance between these searches may be of fundamental importance for the survival and prosperity of the enterprise (March, 1991; Rivkin & Siggelkow, 2003; Lavie et al., 2010). This corroborates March (1991), who argues how these two forms should compete for scarce resources and that, therefore, if there is not a certain amount, the survival and development of the organization may be threatened.

Organizations seeking innovation excluding *exploitative* knowledge suffer the costs of experimentation without obtaining the benefits associated with exploiting existing opportunities (March, 1991). Studies indicate that, to ensure their innovative performance, organizations must balance conflicting demands for

short-term efficiency and long-term effectiveness (March, 1991; Smith & Tushman, 2005; Tushman & O'Reilly, 1996; Venkatraman et al., 2007).

2.4 Local Productive Arrangement - APL

According to Cassiolato and Lastres (2003), productive arrangements are agglomerations in which interdependence, articulation, and consistent bonds result in interaction, cooperation, and learning, with the potential to generate increased endogenous innovative capacity, competitiveness, and local development. Cunha (2008) suggests that foreign literature does not conceptualize the term local productive arrangement. This terminology was proposed by the researchers of the Research Network on Local Productive and Innovative Systems and Arrangements (REDESIST), and there is no specific translation or conceptualization in other countries.

Cassiolato and Lastres (2003, p. 27) define APL as:

Territorial agglomerations of economic, political, and social agents focusing on a specific set of economic activities that may even have emerging links. They usually involve the participation and interaction of companies and their various forms of representation and association. They also include public and private institutions focused on the formation and training of human resources, research, development, and engineering, politics, promotion, and financing.

From this perspective, Brazil (2010) states that when studying APL, it is necessary to consider actors, activities, and regions that are generally excluded from the policy agenda. Following the advance of the understanding that productive and innovative development depends on the articulation between actors of a given productive chain and between these and the other economic, political, and social actors that are part of different systems and arrangements, including those responsible for knowledge production, financing, and support, specific and unisectoral policies can be overcome.

For Cassiolato and Lastres (2003), in the APL's approach, the focus of the analysis is now on the relationships between companies and between them and the institutions, and not on the individual actions of the company. In other words, it is suggested that the focus should be on all agents and not on one agent alone.

Amato Neto (2009) highlights the fact that externalities can have benefits to be achieved by the companies that make up the APL, taking their geographic location, infrastructure, road network, labor, easily accessible raw materials, and good location to consumer markets into account. These factors decrease costs, increase profitability, and provide greater competitiveness.

However, in addition to the externalities, APL also generate internal economies, which are translated into increasing returns to scale (Machado, 2003).

3. Methods

Aligned with the theoretical bases of the research, the methodological approach characterizes the steps taken to achieve the proposed objectives, and provides more information about the research environment and the process of delimiting the *corpus* for the analysis of observed data.

3.1 Characterization and Type of Survey

This research can be characterized as exploratory and descriptive since it clarifies the problem, enhancing the knowledge of the researcher, serving as a starting point for future studies (Collis & Hussey, 2005) Furthermore, it establishes relationships between the variables (GIL, 2010), and sheds further light on a given phenomenon or problem (TRIVINÖS, 1990).

This study adopted the mixed design strategy, in which the researcher collects and analyzes the data, integrates the findings, and extracts inferences using quantitative and qualitative methods (Creswell & Tashakkori, 2007).

3.2 Population and Sample

This study is based on the population of clothing companies belonging to APL Taquaral in Goiás. The sample was selected for the following reasons. First, because apparel companies present characteristics of organizational isomorphism, those of this APL belong to endogenous industrial clusters, where the scale of most companies is the same, with a small degree of product differentiation and a relatively clear degree of homogeneity (Zaccarelli et al., 2008).

The study population is comprised of companies that make up the APL Taquaral in Goiás cluster. As this is a relatively small geographical region and with the companies grouped together, the questionnaire was expected to be applied to the entire population or as large a number as possible. However, of a total of 144 companies, it was applied to 109 companies that can be considered representative of the sample.

This study employed a *survey* classified using the scale created by Zhang and Hu (2017). Their model was considered adequate to the study proposal, but the original scale (1 “nothing” to 7 “in great measure”) was adjusted to 1 “no way” to 7 “in great measure.” The questions were also adjusted to ensure interviewees understood that these were clusters/agglomerations, because it was feared that the term “industry” may cause confusion. With this procedure, direct questioning was employed with the companies that make up APL.

4. Results and Discussion

To validate the model, it is important to validate the data through statistical tests. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) tests were performed, with the elaboration of a structural model, using the statistical programs SPSS 21 and SmartPLS 3.

4.1 Outcome and Discussion of Exploratory Factorial Analysis (EFA)

The reliability and validity were estimated following the guidelines suggested by Anderson and Gerbing (1988). First, we performed EFA using R software. The results revealed Cronbach’s alpha $\alpha_C = 0.9$ (Freitas & Rodrigues, 2005; Landis et al., 1977). An analysis of main components also tests the validity of the measurement scales; these results showed that the values of all KMO variables were higher than 0.70. Bartlett’s sphericity test was significant ($p < 0.0001$), indicating that the correlation between the questions is statistically significant (Kaiser & Rice, 1974). Therefore, the data are adequate for factor analysis. The load factors of all indicators were above 0.5, the cumulative variance explained by all indicators exceeds 74%. The

sample suitability measures (MAS) were above 0.5 for all variables. The communalities above 0.57 demonstrate that the total variance of each variable is explained by all the analyzed factors. These results demonstrate the consistency of the data.

Using the analysis of main components to form linear combinations of the questions, we obtained five combinations that maintain the response variability of the information of the 5 *scores,* with a proportion of the variance of 70.45%, summarizing the 5 *scores* in 2 new variables (Johnson, 1992) (see Table 1).

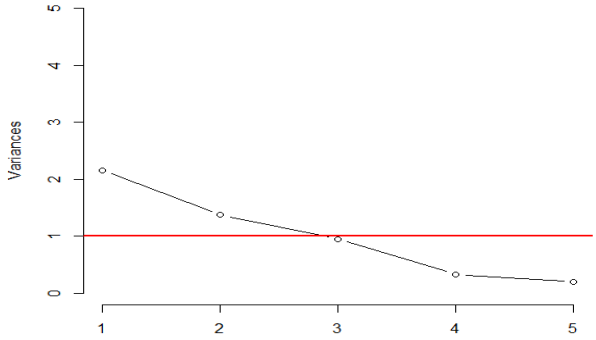
Table 1. Summary of main component analysis - Exploratory variables

Importance of components:					
	PC1	PC2	PC3	PC4	PC5
Standard deviation	1,4667	1,1709	0,9752	0,5735	0,4440
Proportion of Variance	0,4303	0,2742	0,1902	0,0658	0,0396
Cumulative Proportion	0,4303	0,7045	0,8947	0,9605	1,0001

Source: Prepared by the author

Figure 2 visualizes the application of Kaiser's criterion in the selection of the number of main components to be maintained in the analyses, that is, main components whose eigenvalues are higher than 1, indicating that the first five components should be maintained (Johnson, 1992). By this criterion, the number of factors that will be extracted from the EFA is also defined. That is, two factors that account for 70.45% of the variance of the whole set of explanatory variables.

Figure 2 Scree plot - Main component analysis



Source: Prepared by the author

Table 2 presents the two factor loads estimated through the main component model and the communalities of the issues. The communalities represent the proportion of the variance for each variable included in the analysis and that is explained by the extracted factors. To illustrate, the *score* for "Search for *Exploratory* Knowledge" presents the highest communalities of the set, this means that the two extracted factors explain 86.9% of the variance of this factor.

Table 2. Initial loads of factors extracted by the principal component method

	Fator 1	Fator 2	Comunalidades (h^2)
	Método de Componente Principal		
Coercive Isomorphism	0,466	0,679	0,677
Normative Isomorphism	0,537	-0,374	0,427
Mimetic Isomorphism	0,430	0,792	0,812
	0,869	-0,299	0,844
Busca do Conhecimento *Exploitative*	0,841	-0,233	0,762

Source: Prepared by the author.

4.2 Outcome and Discussion of Confirmatory Factor Analysis (CFA)

Second, CFA was performed to evaluate convergent and discriminant validity using SmartSPLS 3. Table 3 reports the results of measurement analysis.

Table 3. Results of Confirmatory Factorial Analysis

VARIABLE	AVE	COMPOUND RELIABILITY	T VALUE	CRONBACH'S ALPHA
Exploitative Knowledge	0,728	0,914	5,711	0,875
Exploratory Knowledge	0,656	0,883	8,629	0,823
Innovative Performance	0,731	0,916	6,486	0,877
Coercive Isomorphism	0,655	0,850	1,829	0,761
Mimetic Isomorphism	0,576	0,800	1,175	0,722
Normative Isomorphism	0,647	0,834	3,279	0,707

Source: Prepared by the author.

The values of Cronbach's internal consistency (AC) and composite reliability (CC) are observed. The traditional indicator is Cronbach's alpha, but CC is more suitable for PLS-PM because it treats and prioritizes the variables according to their reliability, while CA is very sensitive to the number of variables in each construct. In both cases, the samples are evaluated to measure if there is systematic error or if the answers together are reliable. CA values above 0.60 and 0.70 are considered reliable, and CC values of 0.70 and 0.90 are considered satisfactory (Hair et al., 2014). The table shows that the values found in CA and CC are in accordance with the literature. The convergent validity evaluates the degree to which two measures of the same concept are correlated. To check the convergent validity, the criteria proposed by Fornell and Larcker (1981) is used, which indicates convergent validity when the mean extracted variance (AVE) is higher than 50% (or 40% in the case of exploratory surveys). (Nunnally & Bernstein, 1994).

As can be seen in Table 4, the AVEs quadratic values of all latent constructions are higher than the values of the correlations, and one can conclude that there is discriminant validity.

Table 4. Result of discriminant validity

	Conh. *Exploitative*	Conh. *Exploratory*	Des. Innovative	Isom. Coercitivo	Isom. Mimetic	Isom. Normative
***Exploitative* Knowledge**	**0,853**					
***Exploratory* Knowledge**	0,784	**0,810**				
Innovative Performance	0,727	0,708	**0,855**			
Coercive Isomorphism	0,153	0,163	0,220	**0,809**		
Mimetic Isomorphism	0,334	0,266	0,156	0,438	**0,759**	
Normative Isomorphisms	0,328	0,410	0,391	0,238	-0,044	**0,804**

Source: Prepared by the Author

In the evaluation of the structural model, it is important to report and discuss the determination coefficients (R^2) and predictive relevance (Q^2), the size and significance of the path coefficients, the effect size (F^2), and the effect size (q^2) (Hair et al., 2014). In Figure 3, the values presented inside the circles represent how much the variance of the latent variable is explained by the other latent variables contained in the structural model. The values presented over arrows (path coefficients) explain the strength of the effect of a construct on the others.

For the area of social and behavioral sciences, $R^2 = 0.25$ is suggested as a weak effect, $R^2 = 0.50$ as a moderate effect, and $R^2 = 0.75$ as a substantial effect (Henseler et al., 2009; Hair et al., 2011).

The degree of explanation of the variable *Innovative Performance* is verified as 0.611, since it allows the conclusion that the five latent variables explain 61.1% of the variance of this construct in a moderate way. The variables *Coercive Isomorphism*, *Normative Isomorphism*, and *Mimetic Isomorphism* weakly explain *Exploratory Knowledge* (25.4%) and *Exploitative Knowledge* (23.8%).

Regarding the size and meanings path coefficients of the internal model: *Exploitative Knowledge* (0.486), *Exploratory Knowledge* (0.319), *Coercive Isomorphism* (0.147) and *Normative Isomorphism* (0.060), and *Innovative Performance*.

These analyses provide input for the development of a *framework* of the influence of organizational isomorphism and knowledge search in the innovative performance of the APL.

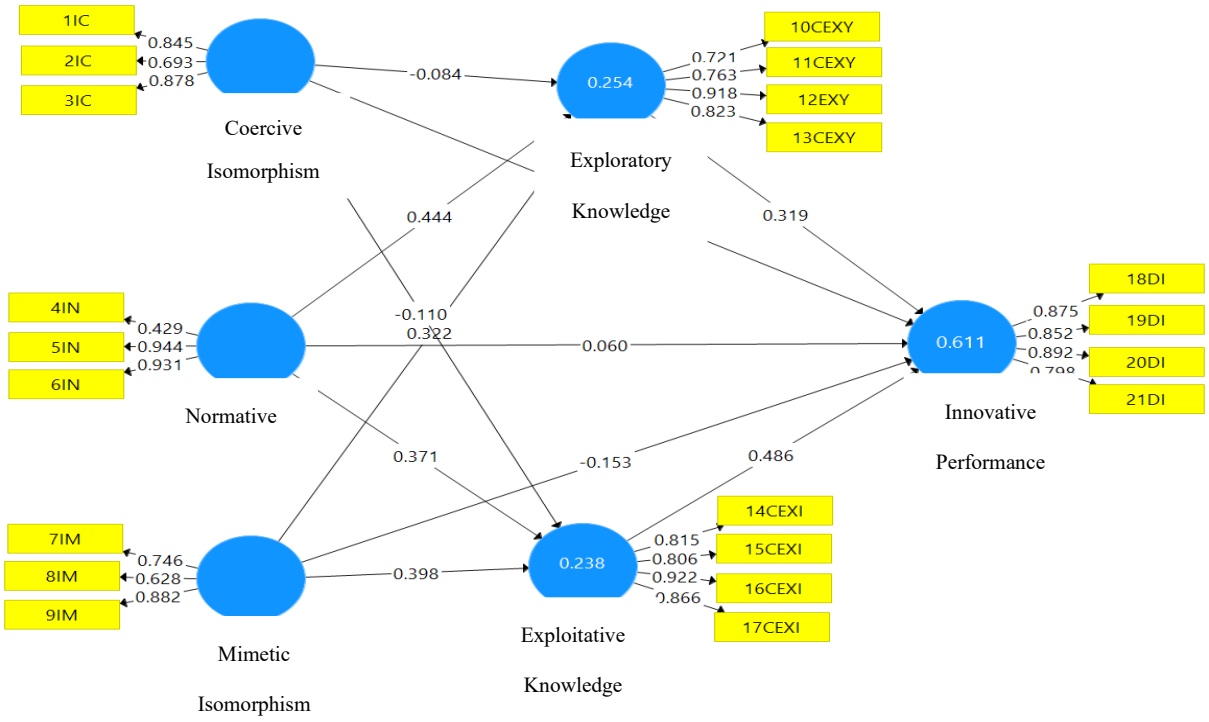


Figure 3. Structural model

Legend: IC= Coercive Isomorphism, IN= Normative Isomorphism, IM= Mimetic Isomorphism, CEXY= Exploratory Knowledge, CEXI= Exploitative Knowledge, DI= Innovative Performance.

Source: Prepared by the author.

The significance of the pointed relationships was tested through the Bootstrapping module (re-sampling technique) available in SmartPLS. This test allows us to evaluate if the correlations and regression coefficients are significant, different from zero, rejecting the null hypothesis. These relationships are significant when $p \leq 0.05$ (Ringle et al., 2014). The test was performed with 5,000 subsamples and the results are reported in Figure 4 and Table 5.

After Bootstrapping, relationships between the variables that were negative or with little significance were adjusted, as can be seen in Figure 4. However, this adjustment has not yet allowed the level of significance to reach the values recommended by the literature (Ringle et al., 2014).

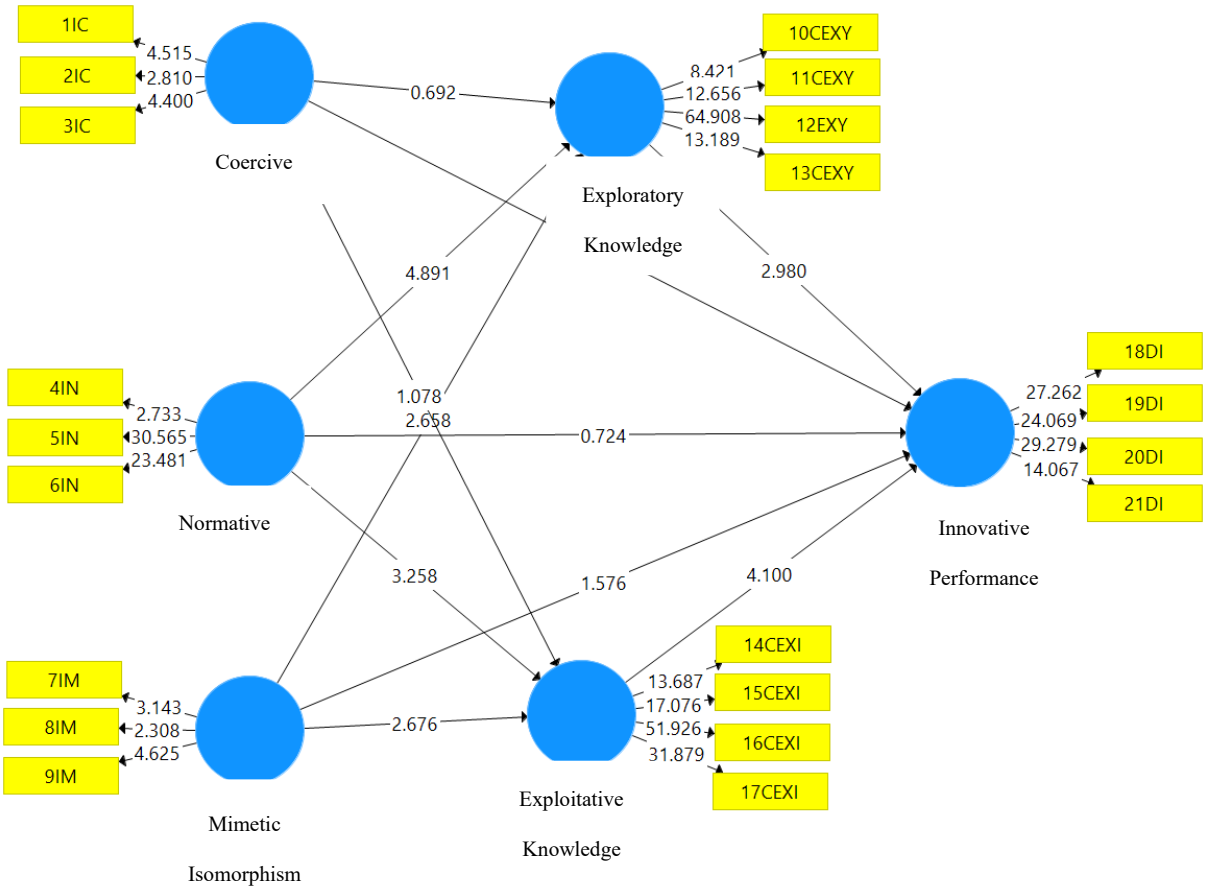


Figure 4. Significance of the pointed relationships

Legend: IC= Coercive Isomorphism, IN= Normative Isomorphism, IM= Mimetic Isomorphism, CEXY= Exploratory Knowledge, CEXI= Exploitative Knowledge, DI= Innovative Performance.

Source: Prepared by the author

In six of the values presented in Table 5 (in bold), the significance level was lower than 0.05, with t test higher than 1.96, the minimum recommended in a bicaudal significance test. It is concluded that, in these situations, there was a strong relationship between the independent and dependent latent variables. However, a strong relationship was not detected between five independent variables and the dependent latent variables, even after *Bootstrapping*. There was a significant improvement, but they did not reach the values recommended in the literature.

Table 5. Significance of correlations and regression coefficients

Correlation of variables	T Test	P Values
Exploitative Knowledge -> Innovative Performance	**4,100**	**0,000**
Exploratory Knowledge -> Innovative Performance	**2,927**	**0,003**
Coercive Isomorphism -> Exploitative Knowledge	1,067	0,286
Isomorphism Coercive -> *Exploratory* Knowledge	0,669	0,503
Coercive Isomorphism ->	1,342	0,180

Innovative Performance		
Mimetic Isomorphism -> Exploitative Knowledge	**2,662**	**0,008**
Mimetic Isomorphism -> *Exploratory* Knowledge	**2,591**	**0,010**
Mimetic Isomorphism -> Innovative Performance	1,554	0,120
Normative Isomorphism -> Exploitative Knowledge	**3,197**	**0,001**
Normative Isomorphism -> *Exploratory* Knowledge	**4,792**	**0,000**
Isomorphism Standard -> Innovative Performance	0,736	0,462

Source: Prepared by the author

Based on the results obtained in the previous steps, Figure 5 illustrates the *framework* for organizational isomorphism and the search for knowledge and its influence on the innovative performance in APL clusters.

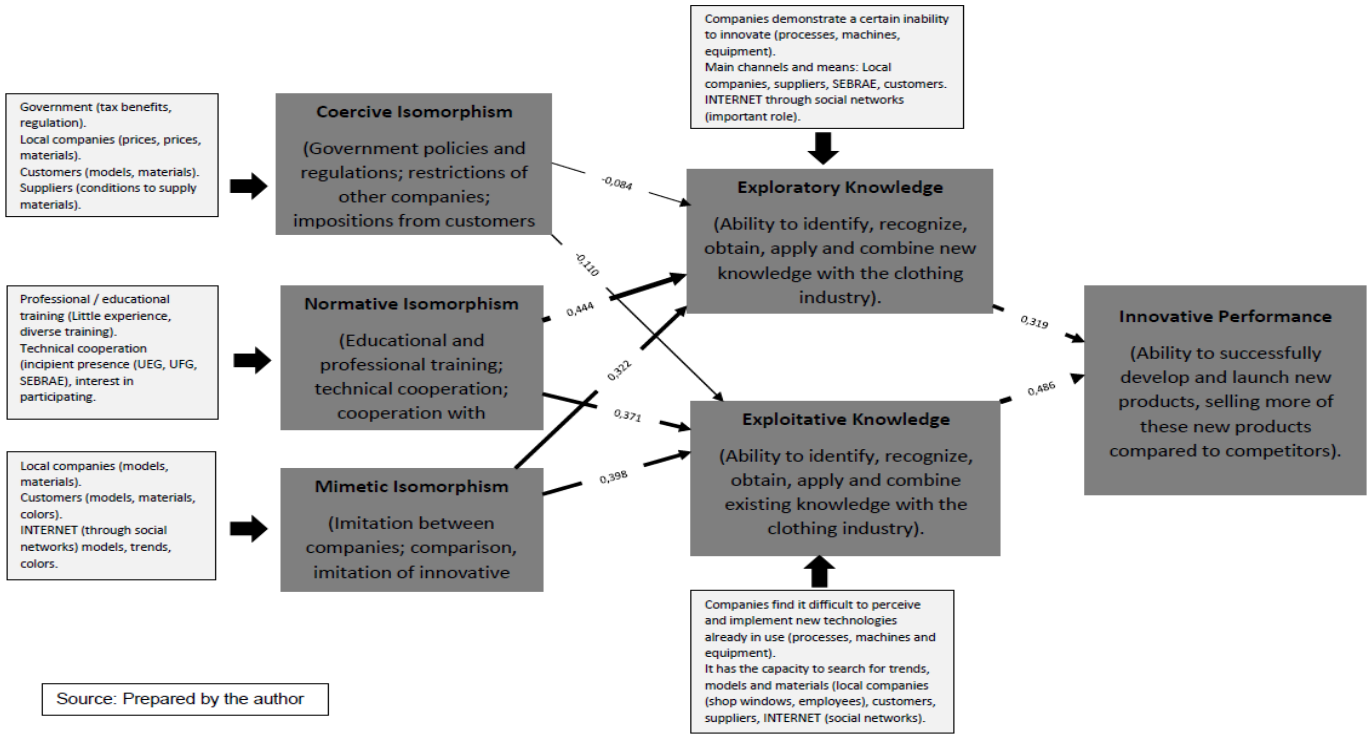


Figure 5. APL Taquaral innovative performance framework

Source: Prepared by the author

From the results, it was possible to elaborate the framework presented in Figure 10. This seeks to present how isomorphism occurs and the search for knowledge and eventual effects on performance, with the origin of the main actors for organizational isomorphism and the search for knowledge in the innovative performance of APL Taquaral. It demonstrates the situation that the normative isomorphism that arises from the search for technical training and participation in technical collaboration by companies influences the search for *Exploitative (0.371)* and *Exploratory* knowledge *(0.444)*. The coercive isomorphism that arises from pressure exerted by the government, other companies, customers, and suppliers, in turn, influences the search

for *Exploratory* (-0.084) and for *Exploitative* knowledge *(-0.110)* in both cases in a negative way. The mimetic isomorphism that arises through imitation between companies influences the search for *Exploitative (0.398)* and *Exploratory* knowledge *(0.322)*. The search for Exploratory (0.319) and *Exploitative* (0.486) knowledge influences the innovative performance with emphasis on the latter, which is more significant in the model. The model indicates that, to a greater or lesser extent, the organizational isomorphism influences the search for knowledge, which together affect the innovative performance of Taquaral companies.

5. Conclusion

This study examined APL Taquaral de Goiás to verify how organizational isomorphism occurred (coercive, normative, and mimetic) and search for knowledge *(exploratory and exploitative)* and constructed a model (*framework*) of such relationships.

In relation to the organizational isomorphism, it is found to manifest in its three forms (DiMaggio & Powell, 1983), but is in a certain way emerging, considering that the coercive isomorphism negatively influences the search for *exploratory* and *exploitative* knowledge. From the data and theories, normative isomorphism appears to directly influence the search for *exploratory* and *exploitative* knowledge and innovative performance, mimetic isomorphism directly influences the search for *exploratory* knowledge and the search for *exploitative* knowledge indirectly in innovative performance.

The results of the questionnaire indicated that mimetic isomorphism is present, with great intensity, in around 67% of the relationships of creation and production of garments within the APL. The mechanism that makes this happen apparently comes together on the internet, through social networks (Instagram, Facebook, WhatsApp), which allow companies to obtain information from competitors' products due to the ease of access and the lack of barriers. This mimetic behavior brings some advantage to companies in terms of human action economics (DiMaggio & Powell, 2005) since most of them are MSEs with a relatively small labor force.

According to the interviews, the companies see the government only as a regulator and tax collector, not seeing other benefits offered by the public administration and there is a certain pressure due to size of other companies, clients, and suppliers. Coercive isomorphism was present in 55% of responses, demonstrating the effective formal and informal pressures exerted on APL companies by other organizations on which they depend (DiMaggio & Powell, 2005).

The presence of effective public policies that can be essential in building localized competitive advantages was not perceived. The types of public policies aimed at promoting APLs are generally tax incentives, investments in urban infrastructure, and construction of public equipment (roads, airports, land concessions, paving, extension of power lines and telephone networks, etc.), which can be seen when companies talk about the government (Amato Neto, 2009; Pereira & Carvalho, 2008).

Entrepreneurs have different professional and educational backgrounds, they view the partnerships with research institutes and universities with optimism, which may show interest in professionalization (DiMaggio & Powell, 2005). This is confirmed by the fact that normative isomorphism was found to be present in 75% of the responses. However, it seems that these partnerships occur in a way that some companies do not perceive, which may indicate weak management by APLs managers, who should plan and execute innovative strategies

to help companies develop competitive products in the market where they operate or wish to operate.

When the search for knowledge was analyzed (*Exploratory* and *Exploitative)*, in the applied questionnaire, *exploratory* knowledge was mainly evaluated as the ability to seek new technologies (67.71%). The interviews indicate that there is no defined way to obtain new external knowledge, occurring in an almost imperceptible way, still linked to an inability to operate it. This is possibly because it is a micro and small business environment, with little or no resources to invest in R&D, which confirms Kachba and Kazuo (2013). Without capacity to obtain funding through development agencies, the situation may also indicate the absence of public policies in this sense, demonstrating the inability of APL companies to seek new technologies because they do not have technical-operational capacity and means to finance innovation. This confirms the observation that was made regarding the massive imitation that occurs in the cluster studied.

According to the questionnaire, 68.29% of the answers indicate a capacity of APL companies to seek and implement technologies. This relates to *exploitative knowledge* because in terms of *exploratory* knowledge, this capacity is not perceived due to the characteristics of the companies that make up the cluster (Kachba & Kazuo, 2013). The results suggest that respondents perceived that this information comes from the internet, suppliers, and close colleagues and some buyers who bring different models. This indicates that the internet (social networks) seems to play a leading role, and this use of new technologies occurs through the use of new equipment, with the acquisition of new knowledge in modeling and new materials. According to Zhang and Hu (2017), this is an acceptable practice that seeks to give legitimacy to companies in view of the fact that the agglomerate is relatively new. However, this practice over time could negatively influence APL companies, which as a consequence, could lead to the inactivity of some.

It was possible to verify the existence of institutional practices and strategic actions of the organizations of the cluster that have isomorphic characteristics of both a coercive and normative nature and for mimetics (Zhang & Hu, 2017). These characteristics occur individually most of the time and almost never in an integrated way. This is because it was perceived that the companies of the APL do not actually act with the appearance of a network, perhaps because the cluster is relatively new and there is not a high degree of professionalism among most companies (Amato, 2009; Zacarelli et al., 2008). However, this did not prevent the generation of a strong environmental isomorphism, especially that of a mimetic nature (DiMaggio & Powell, 2005), among the companies that make up the APL.

It is recommended that new research be conducted in other APLs, *clusters*, or poles to verify whether what was observed in Taquaral de Goiás applies in other apparel clusters.

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