

*Research Paper***Determinants of the occurrence of OI from the managers' perceptions of large companies in the Brazilian auto parts industry***Submitted in 6, December 2021**Accepted in 28, March 2022**Evaluated by a double-blind review system***LUCIANA DO CARMO MENEZES DE ANDRADE¹****MÁRCIA REGINA NEVES GUIMARÃES²****FELIPE FERREIRA DE LARA^{3*}****ABSTRACT**

Purpose: Despite the importance of organizational Innovation in leveraging the knowledge base of companies and reinforcing their competence and effectiveness, research in this area is still rare. Thus, the purpose of this article is to understand what the determining factors for the occurrence of organizational innovation in large companies in the Brazilian auto parts industry are.

Methodology: This is exploratory research with a qualitative approach, used as the method for the multicase study. The research uses multiple sources of information: documents, direct observations, artifacts, and semi-structured interviews.

Findings: As a result, it was found that the adoption of organizational innovation practices happens due to the isomorphism in the automotive industries, but the organizational culture focused on innovation is essential to organizational innovation happen. Characteristics like financial resources, organizational architecture, managerial tools are fundamental. As factors that limit organizational innovation were problems fundamentally related to human resources such as the dismissal of employees, lack of discipline, motivation, overload, preconceived concepts, difficulties to accept changes and dissatisfaction.

Originality/Value: It was established that the organizational innovation methods are linked to changes in; the structure of the organization, flow of information, organization of work, management procedures, administrative system, rules or routines of conducting organizational activities, strategy of the organization, new ways of relating to other partners or consumers, a new method for integration with suppliers and outsourcers or to a new way of performing routine tasks within the organization.

Keywords: Innovation, Organizational Innovation, Organizational Culture, Automotive Industry.

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1. Introduction

Competitive dynamics driven by strong global competition, market volatility, and rising customer expectations mean companies are increasingly open to innovation (Fay et al., 2015). Thus, according to Volberda et al. (2013) innovation is the driving force for progress and prosperity, which is fundamental for achieving sustainable competitive advantages as innovative companies are more flexible, have a larger capacity to adapt and respond to change, and thus explore existing opportunities.

Jantz (2013) states that there is a perception that innovation is the result of factors that cannot be predicted or controlled, such as personal creativity, inspiration and also the convergence of external factors. Companies with a greater ability to innovate would be those capable of expanding, disseminating, and exploiting organizational knowledge internally, as well as sharing, transferring and receiving experiences (Cerne et al., 2013). Several studies (Dans et al., 2013; Jantz, 2014; Laforet, 2013; Lin et al., 2011; Machado et al., 2012; Peng et al., 2013; Wang et al., 2015) support the link between organizational culture and innovation. Competitive advantage occurs when there is a difficulty in imitating innovation, and when this innovation complements and explores different opportunities and competencies that result from other configurational elements, including organizational culture (Valencia et al., 2012).

Organizational Innovation (OI) understood as "the implementation of a new organizational method in the company's business practices, in the organization of its workplace or external relations" (OECD, 2005, p. 61), can favor the efficiency of an organization and stimulate technological innovation, besides being an immediate source of competitive advantage (Camisón & Lopez, 2014).

OI positively impacts the development of dynamic capabilities, productivity growth, and company performance, as well as increasing employee satisfaction and motivation also reducing turnover (Volberda et al., 2013). This type of innovation could be a way for companies to overcome the economic crisis since organizational innovation initiatives contribute to the success of complex business strategies (Dans et al., 2013).

Despite the importance of OI in leveraging the knowledge base of companies and reinforcing their competence and effectiveness, research in this area is still scarce (Damanpour & Magelsen, 2015). Thus, the main objective of this paper is to analyze the determinants of the occurrence of OI from the managers' perception of large companies in the Brazilian auto parts industry.

Such an approach aims to contribute to the theoretical and practical gaps around a theme that has been growing among the strategical literature, that is, identifying factors that collaborate to the OI is an important step to provide the obtaining of competitive leverage for any company, in any field, specially tough in the automotive industry, known to be an area of extreme competitiveness.

The article is structured with a topic related to the theoretical references which encompasses the main aspects of Organizational Innovation, another topic brings the introduction of the research method and another one explores and debates the conclusions accomplished. Finally, the final considerations are presented.

2. Organizational innovation

OI was considered a driving factor for competitiveness in the 1980s. One of the most traditional examples is Japan's automotive industry, where tools such as teamwork, work enrichment, decentralized planning, operation and control of functions, manufacturing cells, JIT, Kanban, among others, led Japanese industries to a higher level in that period, demonstrating that adopting concrete organizational concepts has an impact on a company's ability to improve performance.

According to Armbruster et al. (2008), there is no consensus when it comes to defining OI as the literature on the subject is extensive and dispersed. For authors, OI is a necessary adaptation for introducing new technologies or a precondition for a successful product or process innovation. Anzola-Román et al. (2018) emphasize the systemic nature of innovation, stating that organizational change has positive effects on technological innovation.

Carboni & Russu (2018) claim there is an interdependence relation between corporate reform, product innovation and process innovation. The authors state that studies should consider all three classes together because when considering only one type, the importance that exists in the relationship between them no longer exists.

According to Damanpour (2014), OI is difficult to understand and develop as it captures the main components of the various concepts (managerial, social and administrative innovation), which is considered as the development and use of new approaches to management work, new strategies, and organizational structures; new processes that produce changes in the organization's management procedures and administrative systems. Alves et al., (2018) analyzed 460 articles published between 2007 and 2016 and concluded that although the concept had existed since the 1960s it can be said that there is still no agreement regarding the definitions of OI.

In an institutional perspective, adopting innovation occurs to legitimize the organization for social and non-economic reasons (Damanpour & Magelssen, 2015). Internal and external agents approve management practices for symbolic reasons, seeking legitimacy as opposed to immediate gains in performance and profit. Generalized adoption increases the legitimacy of organizational innovation, ensuring its acceptance and diffusion (Volberda et al., 2014). This theory helps to explain the dissemination of corporate modifications by considering the ways in which social and institutional mechanisms lead to diffusion and adoption (Scarborough et al., 2015).

The rational perspective suggests that the adoption of OI occurs to solve economic problems since innovation is fundamental for competitiveness, performance, and the survival of organizations; the intention of adopting it is to contribute to organizational effectiveness (Walker et al., 2010; Scarborough et al., 2015). This perspective focuses on the tendency of adopters to make optimal decisions to solve efficiency problems and obtain economic gains (Damanpour & Magelsen, 2015).

Several factors determine the occurrence of OI, among them: market influences, organizational context, organizational structure, and strategy, availability of resources and institutional culture. According to Lin et al. (2011), the external environment can influence the relationship between implementing innovative activities and the characteristics of the organization, since the properties of the external environment act as moderators of the organizational structure effects in the OI.

The importance of external knowledge as an incentive to innovation is also highlighted in the literature (Volberda et al. 2013; Simao & Franco, 2018). According to Volberda et al. (2013), gaining knowledge from external sources and learning from partners is fundamental, besides the social insertion, networks, and status of the organization influence the absorption of organizational innovations. Suppliers and customers would also significantly influence the probability that innovation will be adopted by the organization.

In this context, Cavalcanti et al. (2011) state that the OI process is driven by networks which allow the company to identify opportunities. For the authors, some difficulties found in fostering innovations, such as techniques, methods or products, would be minimized through interaction with other organizational actors that have different skills and knowledge that being the purpose of innovation events, or technology events, such as a Hackathon. Paredes et al. (2013) affirm that networks are necessary to promote intensive learning in organizations, facilitating the creation of knowledge and innovations.

In terms of the organizational context, a feature that can influence OI is the size of the organization. Large firms need to innovate to stay competitive, but smaller firms would have greater flexibility and independence from institutional bureaucracy (Frambach & Schillewaert, 2002). According to Laforet (2013), smaller companies would be more disposed to new technologies and modifications which would happen more casually, resulting in short-term innovations. It seems that these contrary relationships are linked to the organization and other variables such as structure, strategy and culture.

On the other hand, according to Jantz (2014), organizational structure is essential for OI as it can help generate ideas and successfully implement them. The structure of the organization can either expedite or inhibit an alteration; the more formal and centralized an organization is, the less prone it will be to adopt modernization initiatives but will be better equipped to implement an innovation (Frambach & Schillewaert, 2002).

Moreover, for Mol & Birkinshaw (2009), decentralization and an informal organizational structure facilitate innovation as the flexibility and openness offered by these types of companies encourage new ideas by increasing change. When organic companies are more flexible, they are more prone to organizational innovation because they provide employees with more opportunities to participate and discuss with people inside and outside the organization (Lin et al., 2011).

Concerning organizational culture, Machado et al. (2012) argue that the relationship between culture and innovation is natural as the development of culture itself. According to the authors, organizational culture can be changed or altered by OI. According to Valencia et al. (2012), it is considered that because it influences the behavior of the organization, it is expected that the organizational culture is a significant determinant in the innovation of the company. The main reason for this is that it can stimulate innovative behavior among the organization's members and help them understand change as a core value and commit to it. Table 1 summarizes factors that may favor or inhibit organizational innovation.

Table 1. Facilitating and inhibiting factors of organizational innovation

Facilitating factors	Market influence - knowledge and information exchange, isomorphism and importance of networks	Cavalcanti et al. (2011); Frambach and Schillewart (2002); Jantz (2014); Lin et al. (2011); Paredes et al. (2013); Volberda et al. (2013); Scarborough et al. (2015)
	Organizational structure and strategy - informal, decentralized and organic, a lot of availability of resources.	Dans et al. (2013); Frambach and Schillewart (2002); Jantz (2014); Laforet (2013); Lin et al., (2011); Mol and Birkinshaw (2009)
	Corporate culture - leadership, employee relationship, teamwork, team diversity, organizational climate, encouraging ideas, learning, educational level, corporate memory.	Fay et al. (2015); Jantz (2014); Laforet (2013); Peng et al. (2013); Valencia et al. (2012). Volberda et al. (2013); Wang et al. (2015); Jia et al. (2018)
Inhibiting factors	Lack of resources for innovation, lack of formal policy to execute internal innovation assets in the organization, lack of management support, short-term orientation attitude and corporate structure inadequate for organizational change, voluntary dismissal, over-reliance of leaders and comparable team profile.	Lin et al. (2011); Peng et al. (2013); Wang et al. (2015)

3. Method

This consists of exploratory research with a qualitative approach, used as the method for the multicase study. According to Yin (2015), a multicase study provides detailed information, contributing to individual and organizational knowledge, allowing the researcher to maintain a holistic overview and the characteristics of real events, as well as a more in-depth understanding of the results, not limited to the information of a single organization. Thus, the research was carried out in five large companies in the Brazilian auto parts sector, described in Table 2.

The most common rating to define the size of a business in Brazilian industry is given by Sebrae (Brazilian system of support to micro and small companies - in Portuguese). Micro-companies are designated as those with a maximum of 19 employees, small companies fit between 20 and 99 employees, mid-sized companies range in personnel from 100 to 499 and then, there are the big sized companies with 500 or more employees.

Table 2. Description of research units

	A	B	C	D	E
Products	Accumulators	Bearings	Accumulators	Transmission Systems	Steering box

Capital	American	German	Brazilian	German	German
Interviewee	Director of innovation Production director	Quality Director Production manager	Head of training Floor Manager	Production manager	Production manager Quality manager

The research uses semi-structured interviews based on the literature on OI practices. For the analysis of the data collected, this study used the content analysis technique, which according to Bardin (1977), is a technique of communication analysis, which enriches the exploratory attempt, increasing the propensity for discovery. The content analysis can be divided into three phases: pre-analysis; exploitation of the material and treatment of results. Table 3 compiles how the three steps operated in this work.

Table 3. Stages of content analysis

Phase	Description	Operation
Pre-analysis	The initial ideas put forward by the theoretical framework must be systematized and the indicators established to interpret the information collected (Silva & Fossa, 2013)	The first reading of the interviews and the choice of papers for analysis (statements, observations, and documents).
Exploitation of the material	Coding construction, considering extracts from the texts in registration units (Silva & Fossa, 2013)	Once the text has been divided up and the categorization has been made for the analysis: 1) The interviewees' statements were separated into the research categories (types of organizational innovation) 2) Organizational innovation practices were first separated into facilitators and inhibitors. 3) These categories were divided again into characteristics internal and external to the organization.
Content Analysis	It comprises the treatment of results, inference, and interpretation, the comparative analysis is performed through the juxtaposition of the various categories existing in each analysis, highlighting the aspects considered similar and different (Bardin, 1977; Silva & Fossa, 2015).	The data obtained were organized through theoretical propositions and the results found were compared to the literature studied. This was done for each case and then the information was crossed between cases.

After establishing the quality of qualitative research, some criteria are traditionally used as reliability, construct validity, internal validity, and external validity (Yin, 2015). Table

4 compiles each of the models and the strategies and procedures used in the research to achieve them.

Table 4. Reliability and validity

Standards	Description	Strategy and Procedures
Reliability	Consistency concerning long term results, regardless of the researcher and instruments.	- Structure of the study congruent with research questions; - A systematic approach to the data collection (protocol); - Record interviews; - Avoid influencing the behavior of the interviewees; - Multiple sources of evidence, - Results analysis.
Construct Validity	Describes the empirical world correctly. Appropriate operational measures for the theoretical concepts researched.	- Explain the theoretical model underlying concepts; - Triangulation of data and methods; - Data chaining; - Maintenance of raw data; - Reliable transcription of Data - Present report to informants.
Internal validity	Establishes cause and effect relationships.	- Standard combination and explanation construction; - Addresses rival explanations and logical models; - Establish the phenomenon in a credible way; - Highlight patterns, similarities, and differences between the beliefs and experiences of the interviewees; - Identify significant components for the standards examined and how they were produced, - Eliminate causal interpretations.
External validity	Extrapolation of the research results.	- Analytical generalization; - Use replication logic; - Compare theory to empirical findings, - Provide dense descriptions and restrictions.

Source: Based on Yin (2015).

4. Results and discussion

The OI practices that are used in the five surveyed companies are presented, and then the factors that facilitate and inhibit these practices. From the concepts used, it can be observed that in the five companies considered, organizational innovation practices occur. The OI practices mentioned by the respondents are shown in Table 5.

Table 5. Categories of innovation practice analysis (inhibitors)

OI Practice	Companies
Improvement programs	A, B, C and D
Alterations in work routines	B, C, D and E
Change in relationship with customers and suppliers	A, D and E
Fast Set up	A, C and E
Simultaneous Engineering	A and D
Changes to daily and fast response meetings	C and E
Just in time	D and E
Changes in management at the sight	C
Changes to the Quality System	E

Considering the changes that OI practices provide to the companies surveyed, the most indicated was in the structure of the organization, then the changes in the management procedures were mentioned. Concerning the result, the most cited is the increase in efficiency/effectiveness in the organization, followed by the facilitation of technological innovation processes. Regarding novelty, the vast majority of OI practices implemented by the companies are new to the company, but they already exist in the industry and are adapted to their reality. No mentioned practice is new to the world.

In association with the improvement program, companies A, B, C and D agree that it provides changes in the structure of the organization, results in increased effectiveness, promotes competitive advantage, has an impact on the company's social system and facilitates technological innovation processes. For all the respondents, the program is new to the company with adaptation. The four companies reward the best ideas, which are evaluated by a committee in companies A, B, C, and by the direct superior in company D. Ceremonies are performed to reward the best ideas, except in company D.

As for the change in work routines, in the companies where this practice occurs (B, C, D, and E), the respondents believe that it provides a change in the structure of the organization. In addition, for respondents, this change results in an increase in the organizational effectiveness/efficiency. The respondents agree that it is a new practice in the company with adaptation.

In company B, the organizational structure has been shifting to a matrix structure, based on business units, in which each head of the business unit is responsible for all steps, from

sales to after-sales support. In company A, there was a change of command in the last two years; the sector stopped responding to the German headquarters and started answering to the US unit.

In company C, has undergone a professionalization process. The company currently has a senior management team at the headquarters and some sectors of the unit started to respond to the matrix and the unit surveyed.

Company D has gone through a merger and some departments are being restructured; they will be corporate and no longer per unit as it is currently, and there is a need for downsizing.

Company E, owned by company D until 2015, was bought by another group and is undergoing significant changes in work routines, adapting to its new culture.

Concerning the changes in the relationship with customers and suppliers, companies A, D and E pointed out the occurrence of this practice, however, there was no agreement of the three companies in any of the aspects that it provides. As for the result, the respondents believe that it increases the efficiency of the organization, including facilitating the whole technological and innovation process. For companies A and D, this practice is new for those with adaptation. It is also new for those without adjustments, such as company E. All three companies mentioned that the main factors for the change in the relationship with customers and suppliers are the crisis in the demand that the Brazilian automotive sector is experiencing and the cost pressure.

In Company D, the customer and supplier relationship are experiencing changes also due to the merger, which according to interviewee D1, has changed the bargaining power. The same thing happens in company E due to group change.

Companies A, C, and E cited the quick set up. There was also no consensus on what this practice promotes in the company, but everyone agrees that it facilitates technological innovation. For companies A and C, this practice is new with adaptation and for company E new without adaptation.

According to an interview conducted in company A, this practice occurs due to the need to adapt the machines to a variable demand and the need to keep the stock low. In company A, the best practices regarding a fast set up are shared. In company C, there are groups constantly working on set up improvement. In company E, in 2015, a specialized group was set up to reduce the times of the tool change.

Another practice that occurs in companies A and D is the simultaneous engineering that, according to respondents, causes improvements in processes and procedures and results in increased efficiency and effectiveness in the organization, promotes competitive advantage and facilitates technological innovation. This is a new practice in the company with adaptation by companies A and D.

The daily and quick response meetings were cited as OI practices by companies C and E, who agree that this practice causes changes in management procedures and information flow in the organization, resulting in increased efficiency and effectiveness of the organization. Concerning the degree of novelty, it is seen as new in the company with adaptation in company C and without adaptation in company E.

"Just in time" was cited as a practice of organizational innovation in companies D and E, and this causes changes in strategy and results in increased efficiency and organizational effectiveness. A new practice in the organization without adaptation is considered by the

respondents. They still agree that in both companies the method is undergoing improvements, as it currently occurs only conceptually and not physically.

In company C, the management was considered a practice of organizational innovation, which causes changes in the flow of information, resulting in increased efficiency and effectiveness of the organization, and is new to the organization without adaptation. The information tables were reformulated and currently have targets for corporate objectives and action plans to achieve them.

Finally, in company E, the corporate quality system was considered an OI practice that brings about changes in the rules or routines of conducting organizational activities, and results in increased efficiency and effectiveness of the organization, and is new to a company without adaptation. Due to the acquisition of the company by the new group, the principles of quality existing in the other units of the group are being implemented.

The respondents believe that what influences the implementation of OI practices are mainly the pressure from the clients and the matrix, which indicates that the organizational innovation in the companies examined is adopted by the institutional perspective, which means benefit of performance, focusing on the role of institutional agents, such as regulators, organizations, matrix, and network. It proposes that they motivate the organization to innovate (Walker et al., 2010).

In the companies surveyed, the adoption of organizational innovation occurs to legitimize the organization, for social and non-economic reasons (Damanpour and Magelssen, 2015). In addition, organizations adopting the spread of innovation is the result of an isomorphism process (Scarborough et al., 2015).

Moreover, 21% of the speeches cited that the category, flexibility, and creativity was a facilitator, this category included factors such as autonomy for decision making, encouraging creativity, top-down strategy, and perception of results.

The managers of the five companies stated that they have the autonomy to innovate within a financial limit, which is seen as a facilitator by the respondents. However, only in company A do production employees have the autonomy to make decisions in their job. In other companies, to bring about any change, they must communicate with their superior.

The improvement program acts as a facilitator for the occurrence of innovation in companies A, B, C and D, according to the managers, both the awards and the existence of a methodology facilitate OI. The encouragement of creativity, through the improvement program, is seen as a facilitator by the respondents of companies A, B, C, and D.

According to Wang et al. (2015), to be innovative a company should encourage all employees to give ideas for improvements, since both individual and collective participation are indispensable for the development of news.

Company A provides a specific place for employees to brainstorm ideas for the innovation program. The enabling environment (information sharing, teamwork) was also cited by respondents, according to Lin et al. (2011), to develop an innovative environment. Organizations should provide resources such as incentive/support programs and appropriate managerial skills.

The lack of methodology for organizational innovations, centralization, and lack of benefits are considered the main inhibitors of this category. According to the literature,

(Camisón & Lopez, 2011, Fay et al., 2015, Jantz, 2014, Laforet, 2013, Peng et al., 2013, Valencia et al., 2012, Volberda et al. al., 2015) leadership is an essential factor for innovation, since managers have a significant impact on the organization's culture and capacity for change and leaders, to articulate the organization's vision, mission, and strategy must inspire and motivate the members of the organization to give ideas and reward them for achieving goals associated with organizational innovation.

Interviewees said that as authoritarian, defensive, non-prioritizing leadership, and the team's lack of engagement, classified as an inhibitor by all respondents, who believe that innovation works for everyone to be engaged, are all classified as inhibitors for OI and can all affect the change negatively.

Communication is seen as an important facilitator of OI. According to the respondents, OI must be communicated so that it is accepted. Thus, there is integration among the areas and the sharing and exchange of information and knowledge that contribute to its development.

Respondents mention the communication category occurrence as an inhibitor. Problems in communication regarding differences in languages (company B and D), communication difficulties (companies B, C, D, E) and failures in OI communication were all reported, which according to the respondents cause uncertainties and inhibits OIs.

The category of human resources was also cited as a facilitator by respondents, especially when compared to corporate support, learning, organizational structure, sense of collaboration and training.

According to the literature (Frambach and Schillewaert, 2002; McLean, 2005), the greater the corporate support the greater the motivation to innovate, since it favors creativity, making the OI become incorporated into the organization's work processes, facilitating its understanding and acceptance by employees.

Regarding the structure, tolerance for error and encouraging challenges were cited. In all five companies, there is tolerance for error, provided that this is not an ethical problem, acceptance of failure is seen positively by the interviewees since the failure can turn into a lesson to be learned, as stated in the literature (Dobni, 2008; Godoy & Peçanha, 2009, Hogan & Coote, 2013, Wang & Chen, 2013). Challenges are also seen positively by all respondents as everyone agrees that it is when difficulties arise those new ideas and better ways of doing things come about. Some authors (Castro et al., 2013, Hogan & Coote, 2013, Ismail & Abdmajid, 2007, Kaasa & Vadi, 2010, Martins & Martins, 2002, Tellis et al. al., 2009) agree that risk tolerance is a facilitator of innovation.

The theory proposed by Jantz (2014) and Peng et al. (2013) is that an integrated team has the confidence to discuss unpopular issues and risky proposals, fostering a higher level of innovative capacity. This can explain the sense of collaboration mentioned as a facilitator.

The self-management teams were cited as facilitators, according to the literature (Volberda et al., 2013; Fay et al., 2015). Teamwork is an aspect closely linked to innovation, as it develops trust and respect based on common goals, leading the team to greater autonomy, increasing responsibility and motivation.

Teamwork occurs in all five companies and is essential for the occurrence of organizational innovation in all of them. In companies A, B, D and E, the difference between groups is felt., There are no differences between groups in company C only,

which according to the literature (Bravo-Ibarra & Herrera, 2009; Çakar & Ertük, 2010; Jaskyte & Dressler, 2005) is an inhibitor to innovation.

The commitment cited as a facilitator, the acceptance of innovation by the individuals can also be driven by social norms, that is, by using them in the social environment (Frambach & Schillewaert, 2002). Training and qualification of employees, preparation and instruction can be linked to the facilitating effect of self-management teams.

For all respondents, the minimum required level of education (full secondary school, and technical D and E) is a facilitator of organizational innovation, since the higher the level of education, the easier it will be for the students to understand the process and give their ideas. The literature (Frambach & Schillewaert, 2002; Molant & Birkinshaw, 2009; Volberda et al., 2013; Zairi & Al-Mashari, 2005) states that the educational level of the workforce is an essential attribute in the organization, as it is key to innovation resources since higher education would be responsible for a greater propensity to innovate since employees would be more open to innovation.

Regarding training and capacity building, the five companies have a formal integration process in which information is circulated about the company's basic rules and procedures. The information is about the history of the company's foundation, which is crucial for the reproduction of the symbolic universe of the integration as it is by integrating new employees that the values are being introduced and incorporated by them.

The inhibitory factors include the following: the lack of discipline for the occurrence of organizational innovation (companies A, B, C and E), employee dismissal (company D), lack of motivation (C), overload (D and E), difficulties to accept changes (A, B, C, D and E) and dissatisfaction (C and D). According to Kaasa & Vadi (2010), the way people deal with change (individual and collective initiatives) can be a barrier to organizational innovation in cases of the companies surveyed, lack of discipline, overload, and preconceived ideas.

The difficulty of accepting changes and a lack of motivation can demonstrate the lack of understanding of the people about the importance of organizational innovation and the advantages that the company provides, inhibiting its occurrence (Frambach & Schillewaert, 2002).

According to Frambach & Schillewaert (2002), the acceptance of innovation is a personal characteristic. The company must persuade and communicate change looking for facilitating innovation. The support of supervisors and colleagues important for increasing assistance, and motivation. (Lin et al. 2011).

The output of employees is mentioned by Wang et al. (2015) as a barrier to organizational innovation, because employees carry tacit knowledge with them, preventing the company from developing and accumulating new knowledge, affecting organizational innovation. Another inhibitor is the excess of hierarchical levels that companies B, C, D, and E have. According to Çakar & Ertük (2010), it is negatively related to the capacity for innovation.

Regarding external facilitators, factors were cited related to market influence such as the partnership with customers, bargaining power and importance of the industry, proving that the external environment can influence the implementation of innovative activities as mentioned by several authors (Lin et al., 2011; Valencia et al., 2012; Vidal & Alcami, 2005).

Moreover, the exchange of experience with customers and suppliers is also seen as a facilitator of organizational innovation, supported by Paredes et al. (2013), who state that

the company's network of relationships is necessary to promote intensive learning in organizations, facilitating the generation of knowledge and innovations.

Finally, the practice of improvement programs is an essential facilitator for organizational innovation, since the individual and collective participation of employees is indispensable for generating new information once the knowledge of the employees is linked to their experiences thus contributing to business improvement (Wang et al., 2015).

The most inhibiting factors mentioned are the internal agents to the organization, and organizational culture, especially those related to human resources such as employee reactivity, work overload, employee dismissal, lack of incentive for creativity, levelling skills and leadership and the lack of employee discipline in relation to the practices of organizational innovation.

The other inhibitors cited are external to the organization and refer to the crisis that the automotive market is going through, which demonstrates once again the influence of the market for the occurrence of organizational innovation.

5. Final considerations

The main objective of this paper is to analyze the determinants of the occurrence of OI from the managers' perception of large companies in the Brazilian auto parts industry. To achieve this goal, we first identified which OI practices occur in the companies surveyed.

It was then defined which OI practices there were, and from a theoretical review, it was established that the OI methods are linked to changes in; the structure of the organization, flow of information, organization of work, management procedures, administrative system, rules or routines of conducting organizational activities, strategy of the organization, new ways of relating to other partners or consumers, a new method for integration with suppliers and outsourcers or to a new way of performing routine tasks within the organization. These practices are innovative and may be new to the world, new to the organization with adaptation or new to the company without it.

Based on this definition, the OI practices, the changes brought about by the practices adopted, the results provided by them and their level of novelty were diagnosed in the companies surveyed. As a result, it can be observed that the organizational innovation practices that most occur in the companies surveyed are: improvement programs (A, B, C and D), changes in work routines (B, C, D and E) (A, D and E) and fast set up (A, C and E), simultaneous engineering (A and D), daily and fast response meetings (C and E), just-in-time), cash management (C) and changes to the quality system (E).

Concerning the changes that took place by introducing OI practices, changes in organizational structure and organizational management procedures were the most frequently mentioned changes. The increased efficiency/effectiveness in the organization and the facilitation of technological innovation processes were the most cited results of organizational innovation. As for the level of novelty, the vast majority of OI practices implemented by the companies are new to the company, but they already exist in the industry and are adapted to their reality.

Adopting OI practices by the companies surveyed is a result of the pressure that the automakers exert on their suppliers. Regarding the determinants of the occurrence of OI, it was observed that there are both internal and external factors to the surveyed companies.

The internal factors are the most cited both as facilitators and inhibitors of the occurrence of OI.

As for the internal factors considered facilitators, those linked to the organizational culture such as communication, corporate support, organizational structure focused on innovation (autonomy, training and capacity building, learning and a sense of collaboration), facilitating leadership; incentive and rewards system are the most mentioned.

The findings suggest that internal sources of knowledge (specialized teams), learning capacity (training and qualification), transformational leadership (organizational innovation), organizational context (company structure) act in the five companies studied as facilitators of OI. Secondly, factors related to the influence of the market were cited as the crisis of demand for which the automotive market has been experiencing.

As inhibitors, most of the factors mentioned are internal to the company and related to the organizational culture. Some problems were found related to the lack of discipline associated with OI (meeting, filling in management worksheets, responding to the ideas of the improvements); to communication (failures in relation between areas and organizational innovation causing uncertainties); inhibitors dismissed, lack of leadership motivation, overwork, employee reactivity, and lack of benefits. They also mention the lack of autonomy and authoritarian leadership as inhibiting factors to OI.

The other cited inhibitors (cost pressure and forecasting problems) refer to the crisis that the automotive market is undergoing, which again demonstrates the influence of the market on the occurrence of organizational innovation.

The article shows results that add to the, so far, existing literature about the relations between culture and innovation in the field of automotive suppliers. The research conducted also presents some practical results to the companies that might want to adopt an innovative culture and furthermore, implement those ideals in future practices of OI.

The limitations of this work are inherent to the qualitative nature of the research and also to the number of cases studied. Other limitations relate to the empirical results that are limited to the automotive sector.

It is suggested for future research to include quantitative studies to test hypotheses from the present work as a way of verifying determining factors and barriers to organizational innovation, linked or not to culture. Finally, we recommend replicating this work in companies from other sectors to identify similarities and differences.

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