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ARTÍCULO CIENTÍFICO

GOVERNANCE ON SUSTAINABILITY CRITERIA IN THE ARGENTINEAN AUTOMOTIVE AND AUTOPARTS GLOBAL VALUE CHAIN AND UPGRADING OPPORTUNITIES FOR SMES

GOBERNANZA DE LOS CRITERIOS DE SUSTENTABILIDAD EN LA CADENA GLOBAL DE VALOR AUTOMOTRIZ-AUTOPARTISTA ARGENTINA Y OPORTUNIDADES DE MEJORA PARA LAS PYME

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Abstract / Resumen

This paper looks at the influence of governance on the transmission and adoption of sustainability criteria in the Argentine automotive and autoparts global value chain (GVC), and the real possibility for local small and medium sized enterprises (SMEs) to achieve upgrading through these criteria. A qualitative research was conducted to which twenty-six people from fourteen different stakeholders from the GVC were interviewed for data collection. As conclusion, governance on sustainability criteria in the GVC manifests as multipolar than a captive one. The analysis showed there are many stakeholders influencing sustainability criteria, apart from the leading companies. Still, opportunities for sustainability upgrading are scarce for SMEs suppliers that do not supply to leading companies, which are at a clear disadvantage in terms of sustainability. Moreover, sometimes SMEs in a developing country even face sustainability downgrading that could neutralize the upgrading opportunities.

Key Words: automotive and autoparts industry; downgrading; stakeholders.

Este artículo analiza la influencia de la gobernanza en la transmisión y adopción de criterios de sostenibilidad en la cadena global de valor (CGV) automotriz-autopartista argentina, y la posibilidad real de que las pequeñas y medianas empresas (PYME) logren mejoras a través de estos criterios. Se llevó a cabo una investigación cualitativa y se entrevistó a veintiséis personas de catorce diferentes actores de la CGV. Como conclusión, la gobernanza de los criterios de sostenibilidad se manifiesta más como multipolar que como cautiva: hay muchos actores que influyen en los criterios de sostenibilidad, además de las empresas líderes. Aún así, las oportunidades de mejora en cuanto a la sostenibilidad son escasas para las PYME que no proveen a estas empresas, encontrándose en desventaja en términos de sostenibilidad. Además, a veces las PYME de un país en desarrollo se enfrentan a situaciones de desmejoras en cuanto a sostenibilidad que podrían neutralizar las oportunidades de mejora.

Palabras clave: desmejoras; grupos de interés; industria automotriz y autopartista.

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Introduction, problem and theoretical framework

The automotive industry, and their necessarily related autoparts industry, are known as one of the most global industries (Sturgeon et al., 2009), which makes it interesting to be analyzed through the Global Value Chain (GVC) approach (Gereffi & Fernández-Stark, 2011). This perspective focuses on how value is generated and appropriated throughout worldwide scattered activities in a certain productive process, particularly considering the power dynamics between stakeholders (De Marchi et al., 2020).

In these value chains, the demands of several stakeholders (Donaldson & Preston, 1995; Freeman, 1984) exerted pressure to include sustainability criteria beyond their national borders, since leading companies have focused their activities on brand design, marketing and management, while low-qualified manufacturing activities were outsourced to developing countries, on concern that these countries may not require social and environmental criteria, causing undesired effects on the global production system (Boström et al., 2015). Sustainability is considered as the balance of the environmental, economic and social dimensions in a firm (Amato, 2019).

Related to the GVC approach, two concepts stand out: governance (top-down perspective) and upgrading (bottom-up perspective). Governance refers to the power dynamics in GVC and it is useful to analyze how leading companies and other stakeholder control and make decisions that affect the rest of the chain (De Marchi et al., 2020; Gereffi et al., 2005). Governance can be understood as coordination or as normalization: coordination introduces the concept of power asymmetry; the type of power that is most used in this framework is direct and coercive bargaining power, which is centered on leading firms and powerful suppliers (Dallas et al., 2019; Gereffi et al., 2005; Ponte & Sturgeon, 2014); and normalization involves aligning a given practice to make it compatible with a particular standard (Gibbon et al., 2008). Sustainability governance seeks to understand the mechanisms by which the sustainability criteria taken as valid in a certain industry are adopted, distributed and transmitted (Boström et al., 2015; Bush et al., 2015).

In general, GVC stakeholders reach mutual agreements on explicit, formal industrial standards and certifications on sustainability, as well as on informal conventions and good practices (Ponte & Gibbon, 2005). In this respect, public and private mechanisms are created to promote sustainable practices towards the links the GVC, which determine valid criteria for each chain. Public mechanisms cover the regulations at the national or supranational levels, while private mechanisms include voluntary standards, codes of conduct, certification and labeling schemes, oftentimes designed by a Non-Governmental Organisations (NGOs) together with business entities, using monitoring or auditing mechanisms (Glasbergen, 2011).

On other side, upgrading focuses on how local companies can upgrade the chain by making better, more efficient and better qualified products. This movement, that tends to create greater value, is constant and depends not only on stakeholder's individual performance, but also on the degree of coordination and cooperation existing in the GVC (Gereffi & Fernández-Stark, 2011; Ponte et al., 2019). The opportunities for local upgrading vary, depending on the way chains are governed, and the process to achieve such improvement is not automatic or easy (Ray & Miglani, 2018). Sustainability upgrading refers to the economic, social and environmental improvements that occur as a consequence of GVC insertion (Buraschi et al., 2017).

Some authors consider that the sole participation of companies from developing countries in GVC, mostly Small and Medium Sized Enterprises (SMEs), automatically translates into positive impacts -upgrading- in economy, social and environmental aspects (De Marchi et al., 2019; Gereffi & Lee, 2016). However, it has been argued that the search for lower costs in GVC may lead to negative effects -downgrading- on society and the environment, and that social and environmental upgrading do not occur automatically (Barrientos et al., 2010; Bernhardt & Pollak, 2016; Gereffi & Fernández-Stark, 2011; Gereffi & Lee, 2016).

In the literature, there are antecedents that analyze the automotive and autoparts industry from the GVC perspective (e.g. Pavlínek & Ženka, 2011; Sturgeon & Van Biesebroeck, 2011; Bernhardt & Pollak, 2016; Alvstam et al., 2020), but very few of these works have a focus on developing or emerging countries (Ray & Miglani, 2018) and even fewer on South and Central America (De Marchi et al., 2020). The case of Argentine automotive and autoparts industry has been studied too. Several papers are related to the diagnosis of the sectors, or of the automotive complex in general, and the strategies proposed to face the identified restrictions and promote the productivity of the sector (e.g. Sica et al., 2012; Sessa, 2013; Stumpo & Rivas, 2013; Baruj et al., 2017). Among them public and private policies needed are developed or proposed. These antecedents

demonstrate the interest in this object of study and the opportunity to deepen its research in a way that has not yet been studied.

The analytical framework proposed in this work combines GVC and stakeholder approaches to better analyze governance and upgrading in the value chain, related to sustainability criteria. From this analysis, the Argentine automotive and autoparts GVC can led us responses about the research questions: how does governance influence the transmission and adoption of sustainability criteria in GVC? And, how can local SMEs achieve sustainability upgrading based on the opportunities offered by these criteria?

So, this paper looks at the influence of governance on the transmission and adoption of sustainability criteria in the Argentine automotive and autoparts GVC, and the real possibility for local SMEs to achieve upgrading through these criteria. To address this goal, a qualitative methodology was chosen (Denzin & Lincoln, 2011; Patton, 1990; Taylor & Bogdan, 1998). For data collection, the method were key informant interviews with fourteen different stakeholders in the GVC: automotive leading companies, auto parts´ SMEs, chambers, service companies, and a cluster. The data analysis stage used content analysis (Miles & Huberman, 1984) and other tools related to the ATLAS.ti© software.

The main contribution of this paper is empirical because offers novel empirical evidence for a qualitative analysis of sustainability governance in a developing country´s GVC, which could contribute to the understanding of a value chain with global relevance, but also of other with the same characteristics as the automotive or autoparts chain. The lessons learned in this study can help the stakeholders of this GVC to understand how sustainability governance is, and the upgrading opportunities or downgrading threats, and act upon them. Even if the study was conducted in Argentina, the results may be relevant to the stakeholders throughout the global chain, public and private, in order to make better decisions that promote sustainability criteria in GVC. Besides, the proposed analytical framework, which combines the GVC and stakeholder approaches, may be useful for further empirical studies.

The paper is structured as follows: first, the context of the study is introduced; then, methodological aspects are developed; afterwards, results and discussion are presented; and finally, conclusions are expressed.

Context Of Study

The automotive and autoparts GVC consists of few multinational companies, known as parent companies, that establish assembly plants -Original Equipment Manufacturer (OEM)- in different parts of the world, based on their needs, mainly of an economic nature. The OEM, also recognized as leading firms in GVC contexts, are in charge of organizing and regulating the entire value chain through their corporate and market power, providing specifications on components, production, delivery and quality of processes, as well as control mechanisms (Sturgeon et al., 2009; Sturgeon & Van Biesebroeck, 2011). There is a high degree of power asymmetry between leading firms and the rest of the suppliers, in addition to other specific features that configure the GVC as one of captive governance (Gereffi et al., 2005).

The OEM´s suppliers are classified into different tiers, being the most prominent those in TIER 1 or mega autoparts companies, which are the closest and most dependent to OEM, usually configured as leading companies too (Sturgeon & Van Biesebroeck, 2011). Another group consists of TIER 2 and TIER 3 firms. These two groups are oftentimes considered as “two worlds” in developing countries, on which GVC rules are completely different: TIER that are directly related to OEM are a minority group and are the only ones that have the possibility to benefit from the automotive industry´s spillover effect (López, 2008, p. 112).

Downstream the GVC it finds service providers and the basic industry, and upstream, the internal and external markets, the former comprising official and unofficial dealers, as well as the aftermarket or replacement market[1]. In developing countries, such as Argentina, most companies in TIER 2, TIER 3 and upstream links are SMEs (Panigo et al., 2017; Sessa, 2013; Stumpo & Rivas, 2013). A simple structure of the Argentine GVC is showed in Figure 1.

Related to sustainability, in this GVC there are different mechanisms for transmitting the criteria, both private and public. Among the private mechanisms, most parent companies have worked with specific

1. In Argentina, TIER 2 and TIER 3 are usually replacement market.

guidelines on economic, social and environmental impacts, and certain links feature mechanisms that are translated into specific requirements or standards to be met. Another private mechanism is certifications, especially those of the International Standardisation Organisation (ISO). Most important certifications include ISO 9001 and International Automotive Task Force (IATF) 16949, which are specific to the automotive industry; ISO 14001 among environmental certifications; ISO 45001 (formerly OSHA 18001) among safety and occupational health standards; ISO 26262 related to car safety systems; and ISO 50001 related to energy efficiency in the industry.

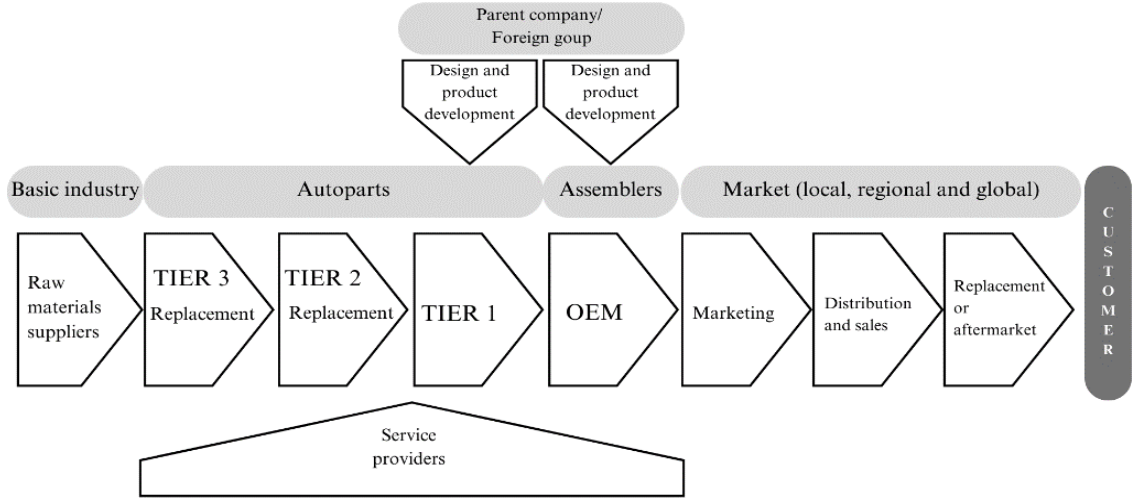
As regards public mechanisms, the State has a critical role in the governance and regulation of the automotive and autoparts industry (Baruj et al., 2017; Panigo et al., 2017), and numerous authors point to the strong influence of national or local structures (Sturgeon et al., 2009). Traditionally, in Argentina, the industry has received strong government support, and national policies are mainly related to vehicle production and exports and, more recently, to autoparts. Nevertheless, Argentina's autoparts sector has suffered deficit with drastic effects (Panigo et al., 2017).

At the regional level, under the South Common Market (MERCOSUR) industry development policies came to an end due to Argentina's strong productive and commercial dependence on Brazil. Although the Argentine State exercises its governance through different regulations, the logic of GVC' global strategies and MERCOSUR regulations mean that the country has no influence over the GVC. On one hand, there are protection and promotion regulations for the industry; but on the other hand, the lack of coordination on industrial policy with Brazil has resulted in unsuccessful negotiations with OEMs.

This lack of success is also related to the structure of the autoparts sector itself and to the centralized configuration of GVC, preventing local SMEs to become TIER 1 suppliers. Relevant historical problems of the industry in Argentina are the high costs of production, concentration and foreignization, a strong dependence of OEMs and a high trade deficit in autoparts. All these problems have occurred despite the regulations that gave rise to new trade agreements and protection and promotion frameworks, such as trade agreements with Brazil under MERCOSUR -ACE N°14 and N°18- or the National Decrees on Industrial Promotion for the Automotive Industry N°2.677/1991 and N°2.278/1994 (Baruj et al., 2017; Panigo et al., 2017).

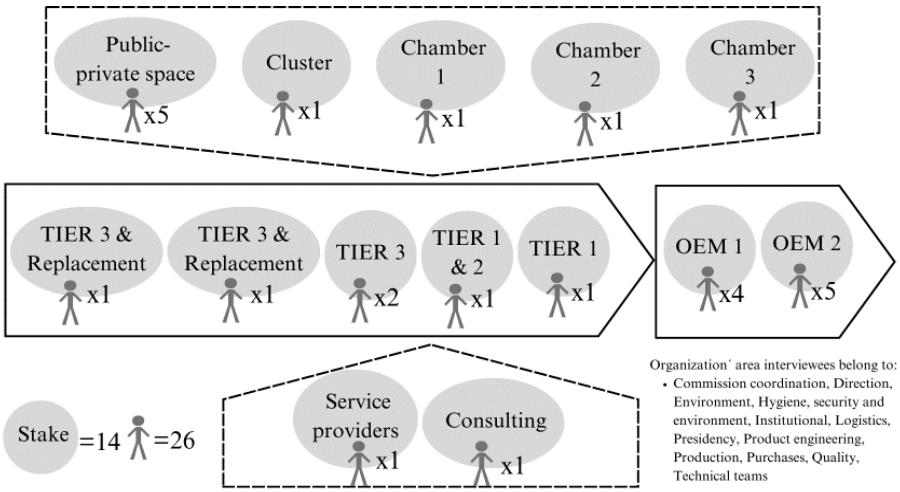
Moreover, there are broader constraints for SMEs in developing countries. Latin American SMEs and Argentine SMEs as well, have been acknowledged to have distinctive characteristics that might burden the realisation of improvements due to insertion in globalised chains (Economic Commission for Latin America and the Caribbean

Figure 1
Automotive and autoparts global value chain in Argentina



Source: Author's own

Figure 2
Interviewees and stakeholders interviewed in the GVC



Source: Author's own

[ECLAC], 2014; Padilla Pérez, 2014). There is great heterogeneity, with difficulty to access financing and knowledge, hindering sustainability and growth (Ayyagari et al., 2007; Morini Marrero & Solari, 2015; Stezano, 2013). These problems can be explained, in part, by the region's socioeconomic context: economic inequality, poverty and institutional developmental problems, the regulatory framework and other microenvironment aspects, such as the nature of goods they produce, the markets they supply, management and production capacity, quality, scale and prices (Panigo et al., 2017; Stezano, 2013).

Methodology

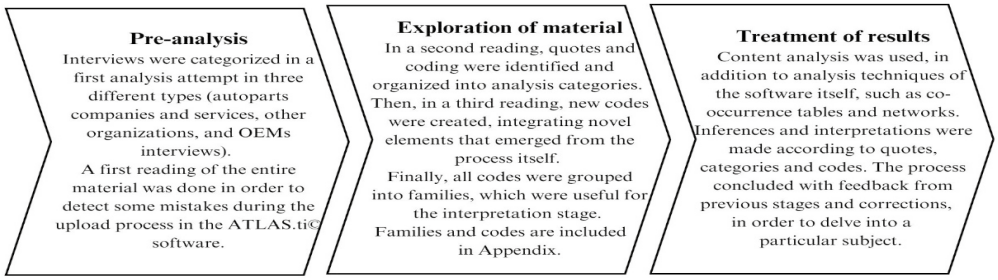
The research was carried out using a qualitative approach, which is appropriate when the purpose is to understand a phenomenon from a holistic perspective (Denzin & Lincoln, 2011; Patton, 1990; Taylor & Bogdan, 1998). This approach has been profusely used in management and organizational research (Fassio, 2018; Gephart, 2004), and in GVC research in particular where it is a frequently used method.

Therefore, one of the first tasks is the selection of the object to study. The intention is to select one that is consistent with research objectives, until an adequate degree of information saturation is reached (Miles & Huberman, 1984; Patton, 1990). The Argentine automotive and autoparts chain constitutes a GVC with distinctive features in terms of governance and upgrading. This industry is of great interest, not only due to the economic and political impact caused by subsidiaries of automotive and mega autoparts companies based in developing countries, but also due to the creation and dissemination of innovation, added value, employment and production linkages towards the entire economy (Baruj et al., 2017; López, 2008; Panigo et al., 2017; Stumpo & Rivas, 2013), in addition to the inclusion of many SMEs in the chain, which is particularly important in the case of developing countries.

The sample was selected using purposive sampling (Miles & Huberman, 1984; Patton, 1990) considering difference governance situations that emerged between GVC stakeholders in the selected chain, prioritizing their balanced participation. From 2019 to 2020, twenty-six people[2] were interviewed, equally divided in two groups of stakeholders: those who belonged to the OEM link, service companies and autoparts companies, and others such as associations and organisations, clusters, and chambers. Interviewers contacted medium-high ranking members of these organisations. Figure 2 identifies the interviewees and stakeholders interviewed at each GVC link.

2. For confidentiality reasons, the organizations and people interviewed will remain anonymous, although all the parties received informed consent on the data shared.

Figure 3
Qualitative analysis stages



Source: Author's own based on Miles and Huberman (1984), and Taylor and Bogdan (1998)

The survey instrument was made according the theoretical framework and the context of study[3]. It was a guide of semi-structured questions by which the interviewer could request information as required as the survey progressed, according to the interviewee's knowledge and experience. Once the data was collected, the interviews were analyzed based on stages (Figure 3), helped by the ATLAS.ti© software.

The reliability and validity of results was ensured by evaluating whether enough information was obtained according to the problem posed, so as to make detailed descriptions of contexts, subjects and phenomena, as well as the categories generated (Patton, 1990; Taylor & Bogdan, 1998). In some cases, it was necessary to return to the interview or to the interviewee to cross-examine. A stakeholder review was used as triangulation, in which key informants were asked to review the writings for accuracy and adequacy, including a feedback process. Moreover, the survey instrument was previously tested as a control strategy. For this matter, it was made available to other academics who work on issues associated with this research, and also to company managers in other sectors, and some questions were adapted. The new results of said process were included in the final survey instrument.

Results[4] And Discussion

This section is presented answering the main research questions: how does governance influence the transmission and adoption of sustainability criteria in GVC, and how can local SMEs achieve sustainability upgrading based on the opportunities offered by these criteria? It was decided to present the results and discussion in the same section, in order to be clearer in the qualitative data analysis and results. During this research stage, other questions arise, related to the main questions, that helped us to understand the phenomenon that we tried to understand.

The influence of governance on the transmission and adoption of sustainability criteria

First, there was an attempt to determine which is the link that exercises governance in the chain analyzing the relation between the families IDENTIFIED LINKS and GOVERNANCE[5]. Once the links were identified, the analysis of the sustainability criteria continued, and the objective was to identify if these links are the ones that determine the criteria to be adopted by the others. To this end, table of co-occurrences and networks[6] between this links and SUSTAINABILITY CRITERIA were used. The findings are summarized in Figure 4, and in order to be concise, it include only those main links exercising governance in sustainability criteria, and the main type of governance that emerge in

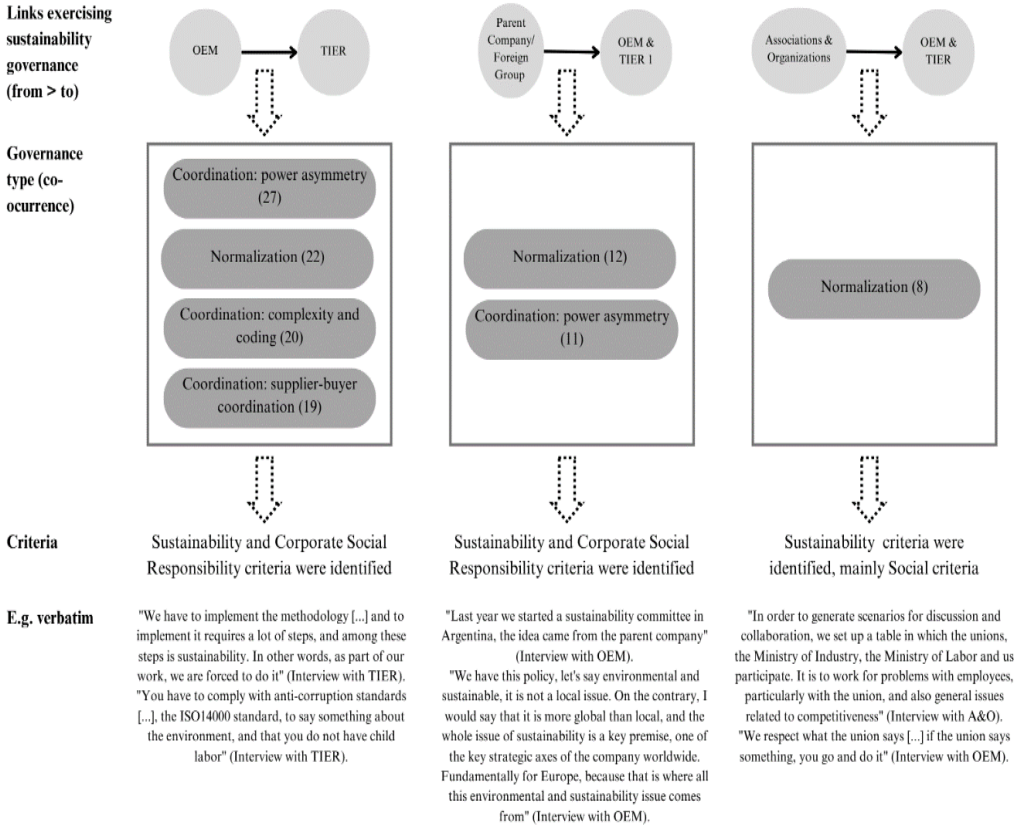
3. The survey instrument is available to the reader upon request via e-mail.

4. This section shows directly qualitative results of analysis. In the interest of producing concise analysis, all the material related to this section (co-ocurrence tables, networks, quotes, other) is on the author´s hands and available for the reader if requested.

5. Families of codes are presented in the manuscript in sustained capital letters.

6. Co-occurrence tables show the number of times that two codes appear together for the same sentence or paragraph (quote) analyzed in the interviews; larger co-occurrences would imply a closer relationship between codes. Networks conceptualize qualitative data, connecting elements together in a visual diagram and expressing relationships between codes and quotations.

Figure 4
Sustainability governance in the Argentine automotive and autoparts GVC



Source: Author's own qualitative data analysis

the analyzed relations.

In the analyzed GVC, the OEM link mainly exercises governance as coordination (Gereffi et al., 2005) and as normalization (Gibbon et al., 2008; Ponte & Gibbon, 2005; Ponte & Sturgeon, 2014), closely followed by the parent company/foreign group link. These determine the sustainability criteria to be adopted by the rest of the links in the chain. However, other actors are beginning to exert pressure to determine these criteria (Dallas et al., 2019), especially different Associations and Organizations (A&O) that exercise active governance, mainly in relation to social criteria.

In order to the type of governance, the GVC under study is better described by Ponte and Sturgeon's (2014) multipolar type than by Gereffi et al.'s (2005) captive governance, which includes a more collective approach of actors (Dallas et al., 2019) that influence sustainability criteria. Based on the literature, the OEM link as a captive chain would be the one exercising the governance, but when the links and the types of governance were divided for data analysis, novelties emerged.

Mechanisms used for the transmission and adoption of sustainability criteria

Once the sustainability governance´ links are known, an interesting question arises: what mechanisms are used for the transmission of these sustainability criteria? So, networks and co-occurrences between the families MECHANISMS FOR COMPLIANCE WITH SUSTAINABILITY CRITERIA and STANDARDS AND CERTIFICATIONS were analyzed.

Data showed that internal and external mechanisms are used throughout the GVC for the transmission and adoption of sustainability criteria. The most used mechanisms do not relate only to the requirements of standards or certification by external organizations; in fact, there are internal mechanisms in leading companies that are mostly

used to guarantee compliance with sustainability aspects, these being coercive and related to the chain's global governance: "They are given a technical specification and then we go and invade them. We stay with them in their factory to help them, but it is practically an invasion" (Interview with TIER).

Patents and licenses projected by OEMs and mega autoparts companies establish compliance with norms, standards and technical and quality certifications (Sessa, 2013). This type of internal mechanism often leaves out the local SMEs that do not have access to these contracts or manufacturing licenses, because they cannot comply with the established norms and standards:

> In the case of [automotive company], they are audited according to a quality standard which is very, very, very demanding, the truth is that it is not easy and it is an inhibitor for the autoparts companies, especially the SMEs (Interview with consulting firm).

This is the first warning about the existence of differences between SMEs in this GVC: those that supply directly to leading companies must comply with their sustainability standards, while the rest do not need to do so.

As regards the external mechanisms associated with standards and certifications, data refers to the requirement of basic standards, such as ISO 9000, throughout nearly the entire GVC, but not to more specific standards, such as ISO 14001, ISO 45001 or the IATF 16949 itself. There is an emphasis on culture towards quality in the industry (Sessa, 2013; Stumpo & Rivas, 2013). However, leading firms rarely require suppliers to be certified under external standards, since being the supplier of an OEM or a mega autoparts company already presupposes an implicit quality certification (López, 2008). It is also possible to highlight some SMEs in the sample that do not abide by any standard or do not supply leading companies, because they do not want to include new aspects associated with sustainability in their company, especially environmental ones, strictly adhering to customer requirements. Some interviewees said they unilaterally decided not to certify due to the absence of audits by leading companies and the State (control); or decided to remain in a link within the chain because switching to supplying OEM requires compliance with social and environmental standards that are in no position to be met:

> The standards that are incorporated are not as strict as they are in Europe, i.e. they are the same ISO standards, but since there are no government audits here to make them more demanding, the result is different (Interview with OEM).

> Many times, an autopart company stays in the replacement market, not entering the terminal market, because in the replacement market there are not many requirements, so they stay there forever (Interview with consulting firm).

There are also external mechanisms through regulations, but these are not strong in the transmission of sustainability criteria. As López (2008) states, "as it is a sector dominated by transnational companies, national policies [in Argentina] are restricted by the nature and logic of the global strategies of these corporations" (p. 136, own translation). Due to its nature, the State is the actor that should exercise the governance of social and environmental issues; however, it has increasingly proven to be less capable of regulating and governing sustainability in developing countries: "Many times, the standards of our parent company are much more demanding than the State itself" (Interview with OEM). This relative institutional weakness has caused a proliferation of organizations that emerge as major actors to promote sustainability through various mechanisms (Bush et al., 2015). Unions are a good example of this type of organization and have the power of social struggle in Latin American. Results showed that they are very important in the analyzed GVC: "The labor issue was addressed by trying to have the same goal with the unions, the sectorial chamber and the government at the provincial level to work on solutions to the different problems" (Interview with OEM).

SMEs´ upgrading opportunities through sustainability criteria

Finally, this section analyzes the question related to: how can local SMEs achieve sustainability upgrading based on the opportunities offered by sustainability criteria?

First, the family of LOCAL SMEs OPPORTUNITIES was analyzed, and it was observed that the most frequent

observations was innovation upgrading (Choi et al., 2019; Lema et al., 2019), followed by economic, social and environmental. But, these sustainability upgrading opportunities appeared to be blocked by GVC economic, social, innovation and environmental downgrading. These categories emerged from data analysis as another main concept to be included. The analysis revealed that local SMEs that intend to join this GVC are blocked from obtaining a sustainability upgrading, mainly due to the existence of more relevant aspects of economic downgrading, but also social and environmental downgrading:

> Unfortunately, the political and economic framework is very complicated, because there are no investments and this is a family business, so the investment comes from the owners and if there are no new projects in the country it is difficult to achieve sustainability over time (Interview with TIER).

> If I want to have a pollution-free company, I will have to make an investment, but I also have to have a repayment, and it is very difficult if you do not have the country's support (Interview with TIER).

> Today we are laying off workers because we have a drop in production. Our customers are not with us; the government is not helping us. So, it is very difficult, because we are trying to become a sustainable company, but in reality, we want to make it to the end of the year and not go out of business (Interview with TIER).

This is partly consistent with the analysis by Golini et al. (2018) in that participation in GVC could even be detrimental to achieving upgrading in developing countries, at least in the case of functional and social economic upgrading. In this respect, it cannot be generalized that the sole introduction of SMEs to the GVC will automatically generate sustainability upgrading, because it has been noted that requirements in environmental matters are scarce, unless in the case of direct suppliers to leading companies.

Considering the relationships analyzed by other authors (e.g. Barrientos et al. 2010; Bernhardt & Pollak, 2016; Gereffi & Lee, 2016), due to the fact that social and environmental upgrading does not occur automatically as a result of economic upgrading, local SMEs have serious problems in achieving economic upgrading in context as the it was analyzed; additionally, environmental and social upgrading are not only unrelated to the economic upgrading, but also more difficult to achieve. Innovation upgrading turned out to be one of the most important features in the analysis due to its occurrence in all the interviews and as an integrating concept, since innovations can be both economic and social or environmental, but are scarcely achieved by SMEs: "Therefore, the company's concern today is not only to reduce costs, but also to avoid union problems, in addition to having to sell what has been manufactured. So nowadays in Argentina we do not think about innovation" (Interview with TIER). This is consistent with previous research carried out on innovation in the industry at the national level (e.g. López, 2008; Baruj et al., 2017).

A summary of the sustainability upgrading and downgrading founded during content analysis is showed in Table 1.

Conclusions

The aim of this study was to understand how governance influences the transmission and adoption of sustainability criteria in the Argentine automotive and autoparts GVC, and the real possibility for local SMEs to achieve upgrading through these criteria. The influence had been studied from two perspectives arising from the GVC approach, top-down (governance) and bottom-up (upgrading) perspectives, and by integrating the stakeholder approach into the analysis. The results revealed several insights regarding into these perspectives and the position of SMEs from developing countries in this respect.

From the top-down perspective, we conclude that the automotive and autoparts GVC is better described by a multipolar rather than captive type of governance in terms of sustainability. This includes a more collective approach of stakeholders that influence sustainability criteria in the global chain, not only leading companies and powerful suppliers, as is the case when analyzing bargaining power, for instance.

Internal and external mechanisms are used throughout the GVC for the transmission and adoption of the sustainability criteria. The most commonly used mechanisms are those internal to the leading companies, which are mainly used to guarantee compliance with sustainability aspects, being coercive and related to

Table 1
Sustainability upgrading and downgrading in SMEs of the automotive and autoparts GVC

	Innovation	Economic	Social	Environmental
Upgrading	R&D of products and processes (parts, pieces and components for electric and hybrid cars; process technologies: industry 4.0; new materials). Market niches ("uberization"; heavy electric automotive industry or small electric vehicles; scrapping reverse logistics or parts and vehicles' end life; mergers or acquisitions of international companies). Associated industries (national production of specialized machinery; training in specialized technical services for machinery maintenance; agricultural or aeronautical machinery industry; specialized training technology centers). The "innovation by experience" associated with local SMEs is prominent: the know-how of SMEs founders or owners, mainly family-run businesses, provides a special type of improvement associated with innovation, given their experience and knowledge of the industry.	Functional: inclusion of product and process technology; access to soft loans; national and regional industry regulations and protection; activation of associated industries; standards and certifications. Process and product: export; import of basic industry materials; vertical integration; sale of by-products or scrapping; inclusion of technology described in innovation upgrading. Intersectoral: participation in clusters or business associations; supply to other industries. Final market: leveraging the relationship with the Brazilian market; provision of additional services to the client.	Collaborators: training; resilience; working environment; recognition of owners and founders' experience. Consumers: demands regarding security, automation and connectivity in vehicles. Companies: work philosophy in OEM and TIER 1; qualified labor demand; long-term relationships with suppliers; positive relations with unions; certification of social norms; links with other stakeholders; CSR actions. Context: regulatory frameworks, industry's plans and social protection programs; cluster and association development; industrial parks.	Reduction of the ecological footprint in: R&D (reconversion of automotive and autoparts industries into electric and hybrid vehicle development). Industrial processes (inclusion of reverse logistics on autoparts, vehicles and scrapping; certification of environmental standards). Context (legislation and control of environmental regulations; infrastructure and innovation for reconversion towards a more environmentally-friendly industry).
Downgrading	Thinking approach towards lower costs exclusively, regardless of innovation or the inclusion of innovations with economic impact only. In some links, such as spare parts retailer, innovation as such is not considered, because they are focused on daily survival. SMEs economic situation that burdens a long-term innovation thinking, because "in years of crisis, like this [2019], we are thinking about how to get to the end of the year, without laying off so many people" (Interviewed with TIER). Many SMEs feel comfortable not innovating; instead, they work by customers' specific requirements and delivering exactly what they are requested. Even some outsource processes or sections in order not to innovate. A totally different situation occurs in OEM and TIER 1, where R&D activities carried out by parent companies - even by subsidiaries - are prominent. Many of these companies' innovation projects have not prospered due to	General: economic and legal instability and uncertainty in Argentina, in which SMEs are the most affected. Financial and tax burden may result in bankruptcy or closure of these companies. Lack of soft loans to deal with these problems. Negative industrial outlook and a reduced automotive market, with the Brazilian market being much larger and competitive. SMEs are calling for more local content in cars (partly facilitated by the Autoparts Act), while OEMs are calling for greater price competitiveness. Aftermarket practice of jumping links (distribution market, workshops and final consumer m	Globally, large companies install their subsidiaries or parts of their processes in countries with cheap labor; for example, they would choose Paraguay or Brazil instead of Argentina; or India and China at a global level. State corruption, both at the local and regional levels. At company level, "the mindset, the head" (Interview with TIER) of the people in charge of SMEs, associated with lower costs (cheap labor, low qualification, etc.), as a primary objective. Resistance to the inclusion of innovations in SMEs by the people in charge, and also by operators who may see their sources of work at risk. Some interviewees saw the certification of standards as an opportunity for growth and commitment to the customer, the environment, society, etc.; and for others it is "just a piece of paper" (Interview with organization). As regards consumers, the Argentine market is not very large or demanding in terms of safety and comfort.	SMEs and some large companies that do not belong to foreign groups consider that environmental standards and certifications are unnecessary, as they are not specifically required by the customer. Many SMEs did not even consider the environmental variable as part of the company's objectives, partly because there is no pressure through regulatory bodies (control and penalization), and also because it is considered as a cultural issue in the industry. Some SMEs have outsourced processes with environmental problems to avoid the implementation of processes behind closed doors. Absence of the State as a driving force for the use of alternative energies throughout the industry, not only in relation to electric cars, but also in production processes. The State does not provide funding support to the energy matrix change in order to promote more sustainable uses in the industry.

Source: Author´s own qualitative data analysis

the chain's global governance. These mechanisms tend to exclude local SMEs as they are unable to comply with them. There are also some external mechanisms related to standard and certifications, but there are not strong enough because they are rarely required by leading companies, since being a supplier of an OEM or a mega autoparts company already presupposes an implicit certification. Another external mechanism is regulations, but these are less strong in terms of sustainability criteria.

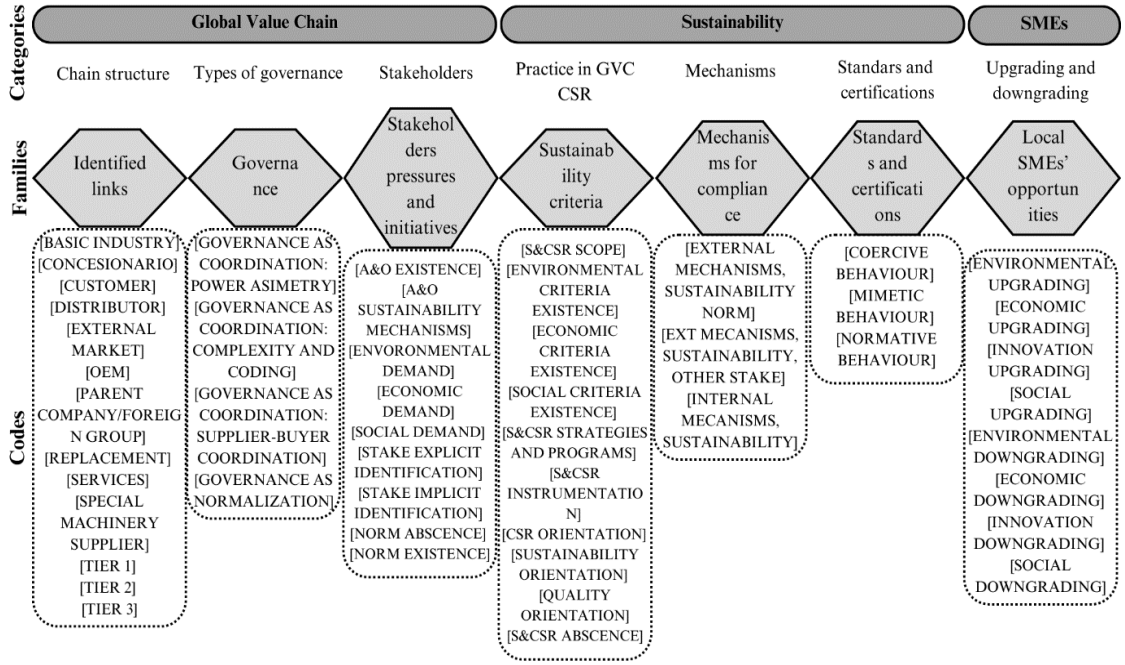
From the bottom-up perspective, there are upgrading opportunities for local SMEs to insert themselves in the GVCs based on the sustainability criteria transmitted by the leading companies, but in the context analyzed we found some limitations: 1) these opportunities can only be taken by the SMEs that directly supply these companies; and 2) there are variables that influence so that these improvements do not occur automatically, as assumed by the traditional GVC theory, or the cases of industries in developed countries; oftentimes, sustainability downgrading is so prominent that it could neutralize the upgrading opportunities.

This study has some limitations. Qualitative methodology fails to extrapolate conclusions to the population, and due to its reflective and subjective nature, the inductive process is used in all stages and includes a large number of factors into the analysis. Notwithstanding, it is widely used in Management field and in GVC research too, and it yields important results that help develop theory in disciplines such as these, and in topics that were not previously addressed. Different triangulation techniques, described in the methodology section, helped soften potential limitations.

Finally, there are future research opportunities. Research on the main categories could be complemented with quantitative or exploratory qualitative analyzes. Comparative studies with SMEs from other sectors, industries or countries would also be interesting, to analyze whether are the same upgrading or downgrading in sustainability, or how governance influences these cases. Finally, research from other theoretical approaches, as Global Production Networks, could deepen the results.

Appendix

Figure A
Qualitative data analysis: Categories, families and codes



Source: Author´s own

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