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Social Exchange Theory perspective applied in reverse logistic relationships under a remanufacturing perspective

Perspectiva da Teoria de Intercâmbio Social aplicada em relações de logística reversa sob uma perspectiva de remanufatura

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ABSTRACT
The present study seeks to investigate how can the social exchange mechanisms adopted help increase integrations in the remanufactured reverse chain? In this sense, Social Exchange Theory deals with the relational dimension, the interaction between groups, rewards, reciprocity in buyer-supplier relations, conflict management, attractiveness, trust, commitment, motivation, influence, and relational norms. From the perspective of the Social Exchange Theory will explore the economic, social and environmental pillars, environment among remanufactured reverse chain actors and groups in the National Policy on Solid Waste. To achieve the proposed goal, literature review and a descriptive study based on a qualitative approach were used as a methodological procedure literature review. Main contributions of the study are: provides an analysis of research evolution and state of the art in the field of remanufacturing and presents a synthesis referring studies which displays integration and partnership among actors involved in this field.

Keywords: Remanufacturing, Relationship buyer-supplier, National Policy on Solid Waste and Social Exchange Theory.

RESUMO
O presente estudo procura investigar como os mecanismos de intercâmbio social adotados podem ajudar a aumentar as integrações na cadeia reversa remanufaturada? Neste sentido, a Teoria do Intercâmbio Social trata da dimensão relacional, da interação entre grupos, recompensas, reciprocidade nas relações comprador-fornecedor, gestão de conflitos, atratividade, confiança, compromisso, motivação, influência e normas relacionais. Da perspectiva da Teoria do Intercâmbio Social, serão explorados os pilares econômico, social e ambiental, meio ambiente entre os atores e grupos da cadeia reversa remanufaturada na Política Nacional de Resíduos Sólidos. Para atingir o objetivo proposto, foi utilizada uma revisão bibliográfica e um estudo descritivo baseado em uma abordagem qualitativa como procedimento metodológico de revisão bibliográfica. As principais contribuições do estudo são: fornece uma análise da evolução da pesquisa e do estado da arte no campo da remanufatura e apresenta uma síntese referenciando estudos que demonstram integração e parceria entre os atores envolvidos neste campo.

Palavras-chave: Remanufatura, Relacionamento comprador-fornecedor, Política Nacional de Resíduos Sólidos e Teoria da Troca Social.

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1 INTRODUCTION

Remanufacturing can help companies enter markets that enjoy products that have green content or so-called green products, encouraging customers to look for services and features (Debonneuil, 2014; Sidoli, 2013), and consumers to not only return products after use, but also to buy remanufactured products (Hazen et al., 2017). Erramili and Rao (1993) also identified that organizations take decisions not only considering the transaction cost, so the transaction cost theory does not fully explain the entry mode choice. It's important to understanding approach impacts the entry mode decision, note that it is not sufficient to completely explain this decision, because the government interventions, the competitiveness of the market and the lack of information also influence such decision in Brazil. All things considered, some authors (Van Whassenhove, 2013; Jabbour; Arantes; Jabbour, 2013) evoke the highly varied and versatile characteristics of remanufacturing and show that there are gaps of research in developing countries, as is the case of Brazil.

On the one hand, remanufacturing has a sustainable bias (Guide Jr; Van Wassenhove, 2009; Subramonian; Huisingh; Chinnam, 2009), on the other hand, integrating sustainability, in the supply chain models, significantly increases the complexity of them with the inclusion of closing cycles (Matos; Hall, 2007). The relationship between remanufacturer and the customer is an important aspect for the effectiveness of the business, being the source of important market information (Östlin; Sundin; Bjorkman, 2009; Sundin et al., 2008). Research that examines the factors of remanufaturability (Gan; Pujawan; Suparno, 2014; Lund, 1984; Subramanian; Subramanyan, 2012). Studies have been scarce on the markets, and their perceptions of remanufactured products and their environmental values (Abbey et al., 2015, Abbey; Guide Jr.., 2017, Jimenez-Parra et al., 2014).

In a recent agreement, six associations representing the markets of Europe, the United States, Brazil and China signed an international agreement, with common definitions on the remanufacturing process and the used part (core). The products used and discarded that reach the remanufacturing process are called cores (Sundin, 2004). In this sense, the document assists in the awareness and acceptance of remanufactured products and provides a set of guidelines that defines the development of the global industry (Anrap, 2016).

Atasu, Guide Jr. and Van Wassenhove (2008), point out in addition to complying with legislation, remanufacturing can be considered a business opportunity with a high economic impact. What is unclear is how product recovery impacts business choices - whether it is a result of legislation, economic opportunity, or both.

Appropriating, by relational governance mechanisms presuppose agreements based on personal relationships and common social processes and norms (Poppo; Zenger, 2002), with trust and mutual commitment between the parties and providing greater flexibility to the parties (Liu; Luo, Li, 2009).

Essentially, an interorganizational governance is a heterogeneous phenomenon and that different relationship management strategies are appropriate in different conditions and rewards for all involved and not only individual benefits (Chopra; Meindl, 2010), and understand how companies (re)conceptualize its supply chain (Gladwin; Kennelly; Krause, 1995).

The present research seeks to investigate: How can the social exchange mechanisms adopted help increase integrations in the remanufactured reverse chain? Finally, studies with explore the environment for relationship building (suppliers-buyers) and network types in remanufacturing (Guidat et al., 2015) are rare.

This article is divided into four sections, in addition to the first part, the second part is the literature review. In the third is specified the methodological procedure, in the fourth the discussions are presented and in the fifth and last moment, the main conclusions are highlighted.

2 LITERATURE REVIEW

2.1 SOCIAL EXCHANGE THEORY

The theoretical perspective of the Social Exchange Theory (SET) offers a perspective that explains social exchanges and stability as a process of negotiation between the parties. SET contributes to clarify the process of relationship building and maintenance (EMERSON, 1976; HOMANS, 1958). Therefore, SET investigates interorganizational relationships through non-economic elements that affect the formation of relationships, such as power (Emerson, 1976) and dependence (Azeez, 2014, EMERSON, 1976; NARASIMHAN et al., 2009; YIGITBASIOGLU, 2010).

Social exchanges are based on the rewarding reactions (both positive and negative) from the agents involved. If rewards are positive, exchanges tend to last over time, generating transactions and mutually beneficial relationships (Homans, 1958). Pulles et al. (2014) used SET to examine power and trust as mechanisms that can help companies to achieve better results from suppliers. The SET is widely used among supply chain partners, such as the development of SC ratio (Griffith, Harvey, Lusch, 2006), information sharing between enterprises (Wu; Chuang; Hsu, 2014), sharing knowledge (Liao, 2008), strategic alliance and buyer cooperative actions (Zhang et al., 2012). Narasimhan et al. (2009) sought to show the advancement of the theoretical discourse on SET's ability to improve the understanding of Supply Chain Management (SCM) (for example, the relationship between buyer and supplier). Huang, Cheng and Tseng (2014) emphasized some reasons as to why companies should have exchanging relaitonships: power, justice and codependence, used to explore que matters of relations between buyer and seller (Narasimhan et al. 2009) and by sharing information, increasing thus the cooperation, emphasizing the role of power in the exchange relations, and explaining that the relative powers of the

parties involved are determined by their relative dependence on one another (Azeez, 2014; Narasimhan et al., 2009).

SET is applicable to the remanufactured reverse chain, and can be a valuable mechanism when analyzing buyer-supplier relations. Also, any actions that buyers and suppliers take to improve trust and commitment will result in greater benefits for the relationship (Nyaga; Whipple; Lynch, 2010). This theory deals with the relational dimension, the interaction between groups, rewards, reciprocity in buyer-supplier relations, conflict management, attractiveness, trust, commitment, motivation, power, influence, and relational norms. Therefore, to take advantage of these perspectives to understand how the company has the advantage in the external reputation, besides obtaining value in terms of brand and reputation, since they exert influence in the regulatory environment, in that it can reduce the conflicts of interests between suppliers and clients, and propose sectoral agreements and essentially through the reduction of informational asymmetry.

Subramanian, Huisingh, and Chinnam (2009a) found two key factors explaining price differentials between new and remanufactured products: the reputation of the product seller and producers of remanufactured products (OEM versus independent manufacturers). These issues may be helpful to a company in deciding whether to remanufacture a product or not, as they are subject to external scrutiny for legitimacy. It is worth noting, as some researchers (Guide Jr.; Jayaraman, 2000; Ijomak et al., 2007, Seitz et al., 2007) show that most remanufacturing companies are independent of the OEM (Original Equipment Manufacturer).

Social exchange is a highly significant process in social life and sustains relationships between groups as well as between individuals. Among its conceptual bases are anthropology, social psychology, sociology and economics. SET offers a perspective that explains social exchanges and stability as a process of negotiation between the parties. The Social Exchange Theory contributes to clarify the process of relationship building and maintenance (Emerson, 1976; Homans, 1958). Social exchanges involve a series of interactions that generate a set of benefits and obligations whose interdependence has implications for all parties involved in the process (Emerson, 1976). Cropanzano and Mitchell (2005) describe that the fundamental ideas of the theory of social exchange are based on the rules and norms of the exchange, the exchange of resources and the relations that arise during this process: (i) The first foundation of the social exchange deals with the subjective rules and norms that regulate the relation, that is, the parties must respect the implicit definitions of the situation that is formed between the participants in a relation of exchange. Participating individuals presume reciprocity both in relation to the completion of a transaction and in the belief that the relationship is fair; (ii) The second parts of the assumption of exchange as an economic transaction, extends its scope to the argument of the symbolic value attached to it, surpassing the simple concept of material possession. The authors consider that there

are six features that trigger the exchange: love, status, information, money, physical goods and services, and (iii) the latter assumption deals with the relations of social exchanges as an intermediary of advantageous transactions whose production can be the positive attitude of consumers and organizations.

The SET investigates the inter-organizational relations through non-economic elements that affect the formation of relationships, such as power (Azeez, 2014; Emerson, 1976; Pulles et al. 2014), trust (Emerson, 1976; Pulles et al. 2014) and dependence (Azeez, 2014; Yigitbasioglu, 2010).

Within SET, power is usually conceptualized in terms of resources (sometimes materialistic resources) and their exchanges. Also defined by Young-Ybarra and Wierseman (1999), power and its interdependencies are very relevant components in social exchange. Power is established through the supply of goods and services. If these goods or services can only be served by only a few suppliers, a dependency is emerging. Thus, through power and dependence, people are able to explore other variables important to SET, aiming to achieve a positive result.

The SET comprises a set of propositions that exhibit the principle of social exchange (Blau, 1964). The basic assumptions of SET are: a) people are rational and calculate the best possible means for interaction and seek to maximize profits / returns; b) most of the gratification is centered in the exchange with the other; c) individuals have access to information on social, economic and dimensions aspects that allow them to evaluate alternatives, situations more profitable in relation to their current condition; d) people are goal oriented; e) social construction, credit or reward is preferred to social indebtedness or punishments and f) SET operates within the boundaries of a cultural context (norms and behaviors being defined by others).

In this sense, organizations connect to the environments, through associations, federations, client-supplier relationships, and competition and rely on a legal and social apparatus that defines and controls the nature and limits of these relationships (Narasimhan et al., 2009; Wu; Chuang; Hsu, 2014). It is a fact that organizations engage in coalitions, when there is some advantage to be gained from this association and tend to break down, when there are no more visible advantages in the relationship (Pfeffer; Salancik, 1978). Here are some examples in Brazil, such as the National Association of Pneumatic Industries (Anip); National Association of Auto Parts Remanufacturers (Anrap) and Federation of Brazilian Companies of Remanufacture of Printer Cartridges (Febreci); National Union of the Automotive Vehicle Components Industry (Sindipeças); Brazilian Association of the Auto Parts Industry (Abipeças).

Organizing through partnerships enables greater engagement and equity, and involves sharing benefits and burdens. Conflict is the general disagreement in a relationship that can be characterized by mutual interference or blocking behavior, with stress and tension of outcome. In this sense, organizing through associations allows for greater engagement and possible equity and implies the sharing of

benefits and burdens. Conflict is the general disagreement in a relationship that can be characterized by mutual interference or blocking behavior, with stress and tension of the outcome (Dwyer; Schurr; Oh, 1987).

2.2 REMANUFACTURING

The remanufacturing seeks, through an industrial process, that the products used, return to their original specifications and conditions (Guide Jr. Souza; Van Der Laan, 2005) for the repair or replacement of parts, through the process of transformation of products not functional, removed or changed as good as new or like-new (Gray; Charter, 2008; Lund; Hauser, 2010). Used and discarded products that arrive at the remanufacturing process are called cores (Sundin, 2004).

Seitz (2007) defines remanufacturing as the transformation of a product, at the end of its useful life, into a product with the same quality as a new one. This process includes some following steps: product disassembly, cleaning and identification of parts, recovery of parts and reassembly of the product. Remanufacturing makes used or defective products into products with a new life cycle (Ostlin; Sundin; Bjorkman, 2009) and maintains the geometric shape of the products and their added value since, after the remanufacturing process, the product should be used to the same end that was used during its initial life cycle (Amezquita et al. 1995).

Since the 1980s, new concepts such as green logistics, as well as reverse logistics, aiming at recovering materials and value of rejected items, have led to a growth of studies on direct and return flows, requiring additional and more specific considerations (Fleischmann et al. 2000). A remanufactured product requires only 50% of the manufacturing cost, 60% of the energy and 70% of the material than the manufacture of a new product (Govindan; Soleimani; Kannan, 2015). Remanufacturing presents itself as a business opportunity, by opening the way for the company to enter markets, to enjoy products that have ecological content or so-called green products. Finally, managing product design and thus making products easier to be remanufactured (Amezquita; Bras, 1996).

According to Thierry et al. (1995), information on how product returns are made includes an analysis of the organizations involved, the obstacles and quantity of products that are remanufactured (for each product returned), the costs and overall environmental impact of Remanufacturing. Therefore, cost of collection, cost of remanufacturing, lead time of the remanufacturing of a given product are fundamental. In addition, no studies were found indicating that remanufacturing could negatively affect profits.

One of the problems in the research debates about the problem and difficulty of planning that affect remanufacturing is the difficulty in obtaining products used (cores) suitable for reuse, with

uncertainties regarding quality, volume and frequency in the acquisition of cores (Guide Jr.; Van Wassenhove, 2009; Lund, 1984).

A company is considered a suitable candidate for remanufacturing when its products have certain qualities: a reverse flow of used products (Lund 1984) there is customer demand for the remanufactured product; high value and durable parts (Gray, Charter, 2007); technological stability (Lund, 1984); more sustainable production mode, bringing less damage to the environment (Ijomah et al. 2007); improve the company's image and promote sales of new products or offer after-sales services (Östlin; Sundin, Bjorkman, 2008).

The phenomenon known as Closed-loop Supply Chain (CLSC) (Guide Jr.; Van Wassenhove, 2009) is the one that deals with the design, control and operations of a system, to maximize the complete creation of value throughout the life cycle of a product, with dynamic recovery of value, from different types and volumes of returns throughout the product life cycle. Guide Jr. and Wassenhove (2009) propose that among three key activities within reverse supply chain, namely frond-end (product returns management), engine (remanufacturing operations issues), and back-end (Market development for remanufactured product), remarketing is the most recent aspect in the evolution of closed-loop supply chain, focusing on profitable value recovery of product returns.

2.2.1 Brazilian National Solid Waste Policy

Recently in Brazil reverse logistics was instituted as an instrument of law in the National Policy on Solid Waste (NPSW), established by Law No. 12,305 / 2010 (Brazil, 2010b). This law is characterized by a set of actions, procedures and means to enable the collection and return of solid waste to the corporate sector, for reuse, in its cycle or in other productive cycles, or other environmentally appropriate final destination, being an important instrument for economic and social development (Brazil, 2010a). Remanufacturing EPR Regulation in Brazil SWNP (The Solid Waste National Policy), is still incipient, there are sectors regulated by environmental laws (batteries, tires, electronics, others). For practitioners, especially for those in Brazilian context or in markets with similar characteristics, the results suggest that there is still a lack in adoption of proactive environmental management practices and this aspect may be a constraint for competitive advantage creation.

Purchasing and supply chain managers can benefit from our results by noting the challenges in designing contracts able to balance prevention of risks and promotion of cooperative behaviors. As contracts can work as frames influencing partners' behaviors, supply chain managers could gain from considering the contract as an influential managerial mechanism and not only as a legal tool (Lumineau et al., 2011). Furthermore, linking a study of governance design and subsequent negotiations may

provide an important lever, in both a proactive and a reactive way, for enhancing the ability to resolve disputes between supply chain partners.

Quariguasi Frota Neto and Luk Van Wassenhove (2013) warn that there is a cacophony in the municipal and state laws. These aspects, led to a dispute represented different types of contracts. In addition, the parties may refer to the contractual coordination clauses (such as conflict resolution or changing roles and responsibilities) as negotiations during a dispute unfold, supporting the use of a cooperative negotiation strategy. Subsequently, Law No. 12,977 / 2014, better known as the Law of Dismantling also impacts remanufacturing, according Nakaharada (2018) this law was created with the purpose of reduce the number of vehicle thefts and thefts in the country, since it regulates and disciplines the activity of dismantling and recycling of land motor vehicles guaranteed by the National Institute Metrology, Quality and Technology (Inmetro).

The regulation in Brazil SWNP (The Solid Waste National Policy), innovates by including in its text the shared responsibility for the product life cycle; waste management no longer the sole responsibility of municipal managers but also manufacturers, importers, distributors, traders and consumers. The companies are obliged to structure and program post-consumer reverse logistics production and business chain of pesticides (their waste and packaging), batteries and tires, batteries, lubricating oils (their waste and their packaging), lamps (fluorescent, sodium and mercury and mixed) and electro-electronic products and their components. However, in Brazil, Remanufacturing regulations are still incipient and have a lot to grow compared to countries in Europe, the United States and Japan, where they are already well established by Extended Producer Responsibility (EPR) which is a mandatory type of product administration. It makes producers financially responsible once their products become waste, providing them with an incentive to develop products which avoid unnecessary waste and can be used in recycling and recovery operations.

In an increasingly competitive global market, such policies include, as a minimum, the requirement to producer responsibility for their product extends to post-consumer management of this product. Even though this type of returns are still suitable and established for remanufacturing, but the recovered product might not be able to get the same perceived public benefits with private profits.

There are two characteristics related to producer responsibility: transfer financial and managerial responsibility, with government supervision, upstream to the producer and far from the public sector; and (b) provide incentives to producers to incorporate environmental considerations in the design of your products.

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3 METHODOLOGY

At the beginning of the research, Theoretical Essay was done in order to arrive at the articles that were objects of this research. From then on, each one was read and a database was set up with the main information collected. Meneghetti (2011), in turn, comments that the Theoretical Essay is a means of analysis and elucidation in relation to the object, regardless of its nature or characteristic. The essay form is how new, even scientific, or pre-scientific knowledge is incubated. In this methodology, there is greater freedom on the part of researchers to defend certain positions, without having to rely on the rigorous apparatus of empirical research. The purpose of the research is descriptive (Miles; Huberman; Saldaña, 2014).

The present study uses these keywords for data collection: "Social Exchange Theory", "Relationship buyer-supplier" and "Remanufacturing". According to the review literature and select, the articles are screened by reading the abstract part and a quick scan of the main body of articles. In selecting the papers included in our literature review inclusion/exclusion criteria, for example, these papers are short non-refereed papers and those published in commercial magazines, which may not be regarded as scientific contributions, and eliminating these duplications. Further refinement to eliminate the non-refereed articles, commercial magazine papers and those with unknown author names resulted in journals and articles. Around the most relevant articles reviewed in detail after the screening process. Scientific articles databases founded in the Google Scholar database were used to achieve the purpose of this research.

This work aims to investigate: RQ1: How can the social exchange mechanisms adopted help increase integrations in the remanufactured reverse chain?

4 DISCUSSION

In the supply chain, one can verify the relationship of power and trust between buyer and supplier, in order to achieve better results, rewards to the members interconnected in the remanufactured reverse chain. Thus, increasing trust in the relationship between the customer and the remanufacturer reduces the gap between discourse and practice when talking about increased environmental awareness and the relationship with conscious consumption. In this sense, it evokes a highly varied and versatile characteristic of remanufacturing and helps to understand how companies reconnect their supply chain (Gladwin; Kennelly; Krause, 1995).

Remanufacturing generates benefits for stakeholders, and among the options for product recovery and sustainable management of the supply chain, contemplates a positive performance in the three dimensions: (a) social: job creation, acquisition of smaller products cost and with the same guarantee of a new product; (b) economical: preserves product geometry, reduces material costs,

improves process efficiency, allows entry to new markets, and stimulates economic development; (c) environmental: reduction of energy, water, raw material consumption, emissions to the environment, reduction of waste creation, and extension of products' useful life.

Kleindorfer, Singhal, and Wassenhove (2005), in operations management, both researchers and organizations have faced new challenges to meet a new social and environmental reality. Studies involving institutional aspects have been rare. The processes involved in the remanufacturing of industrial products have been discussed for many years, and the research that examines and expands the horizon beyond technical interest is important because it is observed that because of the commented predominance of the understanding and analysis of competitiveness, based in technical indicators, implying the consequent underestimation of the importance of institutional aspects (Lindhqvist, 2000). Therefore, it is evident the need to create a new pattern of conscious consumption and the promotion of more sustainable organizational practices (Orsato, 2009; Bocken et. al. 2014).

One knowledge gap relates to the supply chain design of OEMs with respect to their remanufacturing operations. Specifically, do OEMs governance mechanisms remanufacture these processes? On the other hand, if remanufacturing can be considered as one of the most attractive strategies for sustainable environments (Sharma et al., 2010), on the other hand, the role of remanufacturing as an effective way to contribute to sustainability is still a challenge research needs to investigate the behavior linked to the environmental values of remanufactured products (Abbey; Guide Jr, 2017), as well as the social dimension, such as a labor-intensive company with a high degree of supply and corporate image, innovation, workplace design, ergonomics and safety (Golinska et al., 2014), since they are not clearly defined in the remanufacturing (Subramonian et al., 2013; Goodall; Rosamond; Harding, 2014). The lack of research attention to this strategic decision is somewhat surprising given the importance of design decisions on recoverable value (Guide Jr.; Wassenhove, 2001) and the calls to focus on long-term strategic issues in CLSC design (Thierry et. al.1995; Atasu, Guide Júnior and Van Wassenhove, 2008). The intent of this study is to provide insights into this area.

New market spaces emerge, and companies need to turn end-of-life product management into a competitive issue, yet without losing the socio-environmental relevance (Orsato, 2013). Finally, the challenges related that new and remanufactured products are heterogeneous and according Abbey et al. (2015) analyzed the dynamic pricing of new and remanufactured products under the consideration of product differentiation and the impact of remanufacturing strategies on suppliers.

The collaboration and interaction among the remanufacturer's reverse chain actors can change the other relationships for positive results achieved during the years of commercial transactions, and are considered success factors in remanufacturing (Gan; Pujawan; Suparno, 2014). However, without understanding its role, one runs the risk of having an incomplete understanding of the process. In this

way, we explore the aspects of cooperation and communication between the various actors in the remanufactured reverse chain (Guidat et al., 2015; Zhang et al. 2012).

Relationships between companies evolve over time and the constituent dimensions of relationships, such as trust, commitment, loyalty, reputation, information exchange, power relations, among others, play an important role in the performance of the member's involved (Palmatier et al. al. 2013). Confidence leads to openness of communication and information sharing, thus enhancing cooperation, emphasizing the role of power in relationships of exchange and explaining that the relative powers of the parties involved are determined by their relative dependence on one another (Azeez, 2014). As a concern regarding justice, Carvalho and Almeida (2018) points out the environmental conflict.

In this way SET is based on the assumption that human beings recognize each other's life situations, perceive each other's needs, and in some ways, are likely to engage in reciprocity a condition in which an answer is correlated with the value of the original message. Thus, the theory deals with the foundations of a relationship. The reward of the relationship and its cost is one of the reasons why relationships are started or stopped according the resources and capabilities. We will describe first the resources: LR network relationships, stocks of used products, adequate skilled remanufacturing workforce and production tools, access information integrated (internal and external) CLSC processes of used process and demand for remanufacturing process positively influences on competitive information sharing is a prerequisite for both proactive and reactive at remanufacturing. Second, we point out the capabilities: remanufacturing Production Planning and Control competences, making developing partnerships and influence with the stakeholders and end users to return the products, OEMs Integrated system control and skills for used product acquisition management, ability to flexibility the production process, to pricing competences and buyback programs and product life cycle of remanufactured products. These challenges contribute to long and variable remanufacturing process lead times.

The remanufacturing industry is considered a hidden gigant (Lund, 1996). There are no official data on remanufacturing, as it is not considered an industrial sector, many of its data are aggregated. It reinforces the importance of OEM user needs, and engaging customers as partners. Companies deal differently with the core availability constraints. In addition to complying with legislation, remanufacturing can be considered a business opportunity with a high economic impact (Subramoniam et al., 2010).

Thus, partnerships between OEM companies with the government and associations could be further exploited, to foster public policies to encourage sectors to product recovery. It is supported in Khanna, Gulati and Nohria (1998) on the lack of a public program to support the most forceful remanufacturing causes demotivation to entrepreneurs and reduction in participation/asymmetry of

incentives. The debate in the country still requires several alignments so that it can assist government agencies in the development of remanufacturing industry and thereby build bridges between public managers and managers of remanufacturing companies a fact that has already occurred in countries of the European Union, China, Singapore and the Republic of Korea, which has been recognized by the government as supporting to reduce waste in industrial activities (Usitc, 2012).

5 CONCLUSION

Several studies indicated a significant work potential especially in the field of reuse and remanufacturing. However, there are still a variety of relevant barriers and uncertainties that prevent this potential in Brazil. Remanufacturing was characterized as a critical component of circular economy and a closed loop supply chain process mechanism. Our results, contributes the study once investigates the circumstances that it happens in CLSC and remanufacturing.

Remanufacturing and CLSC can be used in recovery operations to reduce their environmental and socioeconomic burdens, while maximizing economic and social value. The socioeconomic aspects of remanufacturing are visualized even considering the sectoral conditions and particularities of each organization, it is assumed that, in a way, these obstacles do not overlap the rents of interorganizational relations, through the relational and transactional governance. In CLSC, there is a concern that remanufacturing will allow social, environmental and economic benefits perfectly with a view of analyzing this trade-off, and under TBL's three pillars of sustainability.

The importance of managing the relationships between buyer companies and their suppliers has grown within the field of operations and within the general context of management discipline, with academic studies contributing to deepen the knowledge and development of the theory. Under the circumstance triggered by remanufacturing strategies, the process driven by relationships with external entities and the complexity of the processes engaged. Lind et al., (2008) advocate that a remanufacturer typically has different supply channels and thus maintains different types of relationships with its suppliers.

It is noteworthy that the perspective adopted in this study, of understanding in an integrated way factors of impact between policymakers and institutions that work with social dimensions in remanufacturing, is very important and needs further studies.

In practice, building and strengthening relationships between buyers and suppliers is the expectation of better operational performance and / or competitive advantage for the parties involved, leading to greater competitiveness in the supply chain. Thus, one of the paths is the search by organizations to establish new patterns of relationship between suppliers and buyers, seeking to work together in the planning and execution of operations of the supply chain. The socioeconomic aspects of

remanufacturing are visualized even considering the sectoral conditions and particularities of each organization, it is assumed that, in a way, these obstacles do not overlap the gains of interorganizational relations, through the mechanisms of social exchange.

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