Strategic Reasons, Factors and Advantages Leading Companies To Reverse Logistics: A Case Study

Charles Rui Flávia, Camargo Bernardi, Jefferson Marçal da Rocha, Maria Emília Camargo

Abstract—This paper has identified the reasons, factors and advantages in adopting reverse logistics by using a comparative analysis between a company that adopts this procedure and those without this practice. An exploratory study was conducted and a semi-structured questionnaire was applied in companies of the metal-mechanic sector based in Serra Gaúcha (Northeast part of Rio Grande do Sul State). The questionnaire highlighted the reasons leading companies to practise aftermarket reverse logistics. The results demonstrated that the main strategic reasons indicated by respondents were increase in competitiveness and asset recovery, quality of recycled products, post-consumption reverse distribution channel and logistical factors in distribution of assets.

Keywords—Reverse Logistics, Production Cycle, Recycling.

I. INTRODUCTION

In the current economic system, where companies compete with organizations all over the world, actions are necessary to make products cheaper, less competitive and especially less impacting to natural resources. In order to minimize these impacts, we highlight reverse logistics as an opportunity to do so. According to Leite (2003), this is an area of logistics that plans, operates and controls the flow of information, the return of aftermarket goods and post-consumption goods to the business cycle, or to the production cycle through reverse distribution channels. The logistics of return flows, also known as reverse, is aimed at the effective implementation of product recovery. Its purpose is the reduction, provision and management of toxic and non-toxic waste (GOMES RIBEIRO, 2004, p.140). Terms such as reverse channels or reverse flows have been used since the 1970s. These terms have, in principle, been commonly used in operations related to material recycling and environmental management, and less associated with the goals of cost reduction and increased economic value (BRITO; Dekker, 2003). From this background, the study has investigated the reasons, factors, advantages and benefits for the manufacturer of friction materials, which performs reverse logistics, and also the perceptions of employees from other organizations of Caxias do Sul, Brazil. An explanatory piece of research has been carried out (case study) with application of a semi-structured questionnaire using the Likert scale. The questionnaire has been applied to employees of the friction material company and to other companies in the city. For the preparation of the questionnaire, the reasons or factors that lead companies to implement the aftermarket reverse logistics were used. Such reasons and practices are detailed in the literature on the subject. The article was divided into the following topics: review of the subject reverse logistics; factors that influence the organization of reverse logistics channels; support for the life-cycle in the product development stage, and recovery of reverse products, in addition to the methodology used, the results achieved, and closing remarks.

II. REVERSE LOGISTICS AS A COMPETITIVE EDGE

1) The reverse logistics

With the increase in costs due to practices that seek to minimize the impacts to natural resources, reverse logistics can become a production procedure that will minimize environmental impacts at lower costs. According to Gökçen and Demirel (2008), reverse logistics has emerged due to the growing concern for the environment, depletion of natural resources, especially problems of inadequate waste deposited in landfill areas, thus leading many local governments to establish rules on the destination of the products. To these authors, reverse logistics is, therefore, a set of activities that start from the point of consumption to transform used products into re-usable products in the market. This allows companies to improve their effectiveness, the level of customer service and reduce production costs. To Saen (2009), reverse logistics is to send products after consumer use to the source of origin. In other words, the manufacturer collects used products from customers and then sells to customers as brand-new products following their re-manufacturing Reverse logistics focuses on how to take back used products and recover them both efficiently and economically. Pires (2004) and Saen (2009) point out that many companies have already realized that the residue of their products can be converted from a big problem to a source of competitive advantage, especially in terms of institutional image. Reverse logistics is typically used by beverage companies that have to manage all the return of packages (bottles) from the points of sale to its distribution centers through cargo collecting centers. The industry of aluminum cans is remarkable in using recycled raw material and has developed innovative ways to collect discarded cans (FIGUEIREDO et al., 2003, p. 475). According to Leite (2003), when implementing reverse logistics companies add value of different kinds: economic, ecological, legal, logistic, corporate branding, and others. When adding ecological value, companies become part of the theory of natural capitalism proposed by Hawken, Lovins and Lovins (2002), who see the possibility of a new industrial system founded on a new mindset and scale of values.
2) **Influential reasons and factors in the organization of reverse logistics channels.**

The return to the production cycle, according to Leite (2003), depends on economic, technological and logistical factors, on ecologic needs, and on legislative requirements. The model shown in FIGURE 1 is the result of research in several industrial sectors in Brazil, summarizes the interdependence between the factors and levels of organization, and the dynamism of reverse distribution channels. Second to Figueiredo et al. (2003), the critical reasons that influence the efficiency of reverse logistics are good input controls, standardized and mapped processes, reduction in cycle response time, accurate information systems, measurement of supplier performance, planned logistics network, and collaborative relationships between customers and suppliers. The Table 1 represents, second to Leite (2003), the factors that influence the implementation of post consumption reverse logistics, as it represents the definitions of the necessary essential models and modifiers. The author makes a relationship between the following factors: remuneration, quality, economy, market, technology, logistics, environment and legislation.

<table>
<thead>
<tr>
<th>Conditions that are essential to organization and implementation</th>
<th>Factors</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remuneration of reverse phases</td>
<td></td>
<td>The profitability achieved throughout each reverse phase must meet the economic interests of various players, with aggregate costs enabling lower selling prices or prices that are compatible with the materials used.</td>
</tr>
<tr>
<td>Quality of the Recycled Material</td>
<td></td>
<td>The return to the production cycle should allow products with economically-acceptable recycled content and compatible industrial yield in the process.</td>
</tr>
<tr>
<td>Economic Scale of the Activity</td>
<td></td>
<td>The quantities of recycled material should be sufficient and provide constancy over time in order to ensure activities on an economic and business scale.</td>
</tr>
<tr>
<td>Recycled Products Market</td>
<td></td>
<td>A market is needed for products manufactured from recycled material, as this will favor demands for recycled products.</td>
</tr>
<tr>
<td>Economic factors</td>
<td></td>
<td>Economic factors are understood as the condition for the achievement of the economies necessary for the reintegration of secondary raw materials to the production cycle.</td>
</tr>
<tr>
<td>Technological Factors</td>
<td></td>
<td>It is necessary that the technology is available for cost-effective treatment of waste in its disposal, collection in the post consumption phase, dismantling and separation of the various integrating materials, recycling itself, and in others.</td>
</tr>
<tr>
<td>Logistic Factors</td>
<td></td>
<td>They relate to the conditions of organization, location and transport systems in the various links of the reverse supply chain.</td>
</tr>
<tr>
<td>Ecological Factors</td>
<td></td>
<td>Ecological factors of the reverse supply chain conditions are those motivated by ecological sensitivity from any agent: government, company or companies.</td>
</tr>
<tr>
<td>Legislative Factors</td>
<td></td>
<td>These are the modifiers through governmental intervention aimed at the regulation, promotion, education and incentives to the improvement in the return of products to the production cycle and others.</td>
</tr>
</tbody>
</table>

**TABLE 1 - Factors influencing the implementation of post consumption reverse logistics**

Source: Adapted from Leite (2003)

With regard to legal factors, Bowersox and Closs (2001) state that reverse logistics needs emerge from a growing number of laws. These laws prohibit, for example, discriminated discard and encourage the recycling of beverage containers and packaging materials.
Product management after the end of their useful life has been a relatively complex issue, as in the case of batteries, tires, automobiles, electronics and others (Pires, 2004). Repair, reuse, upgrading, remanufacturing and recycling are the top five ways to make the qualities of good material and good work pass on to other users and uses. Repair, which works better when the product is designed to facilitate it, enables the return of faulty goods to the same owner at a satisfactory level. Reuse transfers them to a new user or serves new purposes (HAWKEN, LOVINS and LOVINS, 2002, p.72).According to Gomes and Ribeiro (2004), the processes involving the recovery of materials and products include cleaning and repair, remanufacturing and rework of products, among others. However, according to Figueiredo et al. (2003), the activities to be carried out with reverse material depend on the type of material and on the reason why they enter the system. The materials can be divided into two large groups: products and packaging. In the case of products, the flows of reverse logistics will take place according to the need of repair and recycling, or simply because the customers return them.Leite (2003) notes that in a take back system the goals in product returns are related to the validity/expiry date of the product, excess inventory of products in the distribution channels, and products that need to be returned (recall) for reasons of safety and health.The aftermarket reverse logistics is related to the marketing and return addressed by Cooper and Lambert (2000). According to Stock and Lambert (2001), however, reverse logistics is one of the most important areas of material management that a company often ignores or overlooks.

III. METHODOLOGY

a) This paper can be classified as a piece of exploratory research (case study) of the quantitative type, conducted by means of semi-structured interviews. According to Gil (2002), exploratory research aims to provide greater familiarity with the problem in order to make it more explicit or to build assumptions. According to Yin (2008), the case study is an empirical inquiry that investigates a contemporary phenomenon in its real context, especially when the boundaries between phenomenon and context are not clearly defined. Questions were prepared in order to evaluate the reverse logistics company environment. The Likert scale was used with the following score: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree and (6) does not apply, considering the following questions:

b) if the company became socially responsible under the practice of reverse logistics;

c) if the company has achieved a competitive advantage by developing the recycling process of used products;
d) if the level of customer satisfaction towards the company increased due to the practice of collecting used products;

e) if the reverse logistics has significantly affected the work of those involved;

f) how the practice of collecting used products in the market affected the work process of employees;

g) if the company’s image was enhanced in the market because of this practice;

h) if the company stood out in its segment for carrying out reverse logistics.

The second block of questions was based on the reasons and factors that lead firms to practise the aftermarket reverse logistics discussed by Leite (2003) and Figueiredo et al. (2003). In these questions, the Likert scale was used with 3 choices:

a) strategic reasons that lead companies to operate with reverse logistics (increased competitiveness, compliance with the law, economic revaluation and asset recovery);

b) essential conditions for the reverse flow to take place (remuneration and quality, scale of economic activity, and market for products with recycled content);

c) factors required for the organization of a distribution channel (economic, technological and logistical);

d) modifying factors that may influence companies to practice reverse logistics (ecological and legal).

Open-ended questions were also developed with the aim of assessing the advantages for the company and the benefits for customers and the society through the practice of aftermarket reverse logistics. For the analysis of such information, the content analysis was chosen, which, according to Marconi and Lakatos (1996), aims at systematically describing the content of communications.

The research was applied to employees of specific areas of the company Alfa and others in the region of Caxias do Sul, from August to October 2009. Prior to the interviews, the procedure went through a pre-test. Marconi and Lakatos (2001, p.165) report that the most appropriate procedure to validate the research instrument is the preliminary test or pre-test, which —consists of testing the research instruments on a small portion of the “universe” population or of the sample, before being finally applied. This aims to prevent the research from coming to a false result”.

1) Characterization of companies

The Alfa company is a national-capital company established more than 20 years ago. It is a medium-sized company that operates within the friction material segment in the domestic market, in addition to exporting to the five continents. The company has more than 200 employees and its annual sales are around 50 million Reais. In 2008, the company exported more than 30% of its products. According to its managers, the company implements a policy of reverse logistics in compliance with the current legislation, thus contributing to the preservation of the environment. Its product development policy is aimed at responsibly using products after use through technologies developed by the company itself. According to respondents, this strategy has enabled the company to increase competitiveness, follow the law and reduce the cost of raw materials. The other companies responding the questionnaire are located in the same region as Alfa and operate within the segment of services and industry.

IV. Research results

This research has sought to understand the strategic reasons behind reserve logistics, the factors needed for reverse logistics to take place, the advantages for the company, and the benefits for customers and the society.

1) Strategic reasons and factors necessary for the occurrence of reverse logistics.

The questions in this section are intended to identify what the most relevant dimensions are for respondents (Alfa and other companies in different segments). The results may indicate the attributes that society perceives as significant. Employees were asked whether they knew the term "reverse logistics". In Alfa company, 21% of the respondents did not know the term, while 79% were aware of it. In the remaining companies, 59% of respondents were unaware of the term "reverse logistics" and 41% were familiar with. Ignorance about the term "reverse logistics" can be justified through the open questions, since respondents indicated that they knew the term as "recycling of packaging." To Bishop (2004), recycling or reprocessing can be considered as the recovery or reuse of material, provided that such reuse does not cause pollution. According to Dias and Theodosius (2006), there are four reverse logistic processes involving recycling: the collection, the combined process of inspection, selection and sorting, reprocessing, and redistribution.
In Figure 2, we tried to explore what were the perceptions of Alfa’s employees, concerning the practice of reverse logistics:

a) 53.57% of respondents agreed that the company became socially responsible by collecting used products. This employees’ point-of-view (in agreeing that the company becomes socially responsible) is also explained by Dias and Theodosius (2006), who consider that despite little action towards selective collection, recycling has a strong appeal in the ecological and economic dimensions, in addition to its social role;

b) 53.57% agreed that companies were getting a "competitive edge" or advantage over their market segment by developing the practice of recycling used products. According to Leite (2003), actions related to environmental preservation with a contributory vision to social and environmental marketing will certainly be rewarded with healthy returns in terms of distinctive image as a competitive advantage;

c) 42.86% agreed that customers would likely be more pleased with the company due to its practice of collecting used products. For Vieira et al. (2005), adding value to the customer may take place via protection of the environment, which demonstrates the environmental awareness of the company, since its base consists of marketing activities designed to meet the desires of customers in terms of protection to the natural environment.

Alfa’s questions were also applied to employees of other companies. In Figure 3, it is noticed that the majority of respondents agreed that the practice of reverse logistics enhanced the company’s image in addition to making the company socially responsible.
The employees of both companies were asked about the strategic reasons that lead companies to adopt the practice of reverse logistics, as per Table 2. Approximately 53.6% of Alfa’s employees consider as very important the increase in competitiveness. The main strategic reason for Alfa is related to "increased productivity", while other companies consider rising in economic value" very important. According to Porter (1998) the essence of strategic formulation is related to the competition. Moreover, the struggle for market share demonstrates that competition does not show through competitive companies, but has its roots in the economy. There are competitive forces that go well beyond what is represented by competitors alone. The rising in economic value highlighted by other companies is indicated by Leite (2003), by which the quantities of recycled products should be sufficient and provide regularity over time in order to ensure activities on an economic and entrepreneurial scale. Alfa’s employees were asked what were the essential conditions for the flow of reverse logistics to take place. Quality (with 64.3%) showed to be a very important factor, while the market for products with recycled content” was considered important with 75% of the answers. It was noticed that Alfa considered the quality” dimension as very important. This is very significant as recycled products cause a great impact on the quality of the final product, since it is responsible for helping the mechanical strength of the friction material. The "economic scale of the activity” was also considered as very important, since the use of recycled material is responsible for decreasing product cost. As for the other companies, they gave a greater relevance to the "market" dimension as opposed to Alfa, which regarded this item as important.

**TABLE 2 – Rate of strategic reasons for companies operating in reverse logistics**

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Company</th>
<th>No so Important (%)</th>
<th>Important (%)</th>
<th>Very Important (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased competitiveness</td>
<td>Alfa</td>
<td>0</td>
<td>35.71</td>
<td>53.57</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>21.3</td>
<td>66</td>
<td>14.9</td>
</tr>
<tr>
<td>Compliance with legislation</td>
<td>Alfa</td>
<td>7.14</td>
<td>42.86</td>
<td>46.43</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>8.5</td>
<td>57.4</td>
<td>36.2</td>
</tr>
<tr>
<td>Rising in economic value</td>
<td>Alfa</td>
<td>3.57</td>
<td>46.43</td>
<td>46.43</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>12.8</td>
<td>70.2</td>
<td>19.1</td>
</tr>
<tr>
<td>Asset recovery</td>
<td>Alfa</td>
<td>14.29</td>
<td>50.0</td>
<td>28.57</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>2.1</td>
<td>53.2</td>
<td>46.8</td>
</tr>
</tbody>
</table>

Source: the authors (2009).
“The organization needs to demonstrate the quality of the product and show that the use of recycled raw material is a way to avoid the extraction of new natural resources, encourage the collection and recycling of discarded materials, prolong the life of landfills and, mainly, provide work opportunities for poor people with little ability to enter the formal labor market (NASCIMENTO et al., 2008, p. 100).” The same questions were applied to the other companies surveyed and the results showed that respondents consider the economic scale (70.21%) and salary (65.96%) as the most important factors. Alfa’s employees were asked about the factors needed to set up a post-consumption reverse distribution channel. The factors highlighted as very important were: the logistical (57.1%), followed by economic and technological developments, both with 42.9%. The other Alfa’s employees surveyed considered as important technological factors (50%), economic (46.4%) and logistic (35.7%) respectively. The employees of other companies highlighted as very important economic factors (63.83%), technological (61.70%) and logistic (57.45%). Logistical factors (36.71%), technological (31.91%) and economic (23.40%) were considered important. Respondents from Alfa highlighted the "logistics" factor as very important since the company considers these raw materials as essential. Their lack can lead to loss of productivity and late delivery of some products to customers. The technology used for recycled material is a competitive advantage, as it includes a specific process called wave process.” This process provides quality to the customer and contributes to the preservation of the environment. The company decided to use recycled raw material for three reasons: the environmental issue, since the customer usually discards friction material after use; the quality used in processing the "wave process" material which allows to provide the end user with additional strength mechanical and durability; and reduced costs for raw materials. Calomarde (2000) points out that repair, reconditioning and reuse are strategies based on the idea of recovering the product in the final stage of its life cycle. The recycled product will be viable if there is demand to justify its implementation. According to Ballou (1993), it is generally cheaper to use virgin material than recycled material due to the little development of return channels, which are still less efficient than the distribution channels for products. This must change since (1) the public in general is becoming more aware of waste, (2) the amount of solid waste has increased and (3) the original raw material is becoming more expensive and less abundant. Regarding the question on the modifying factors that may influence the practice of reverse logistics, according to Table 3, Alfa’s employees considered legislation as a very important factor, while other companies considered ecological factors as very important.

TABLE 3 – Modifying factors that may influence the practice of reverse logistics

<table>
<thead>
<tr>
<th>Factors</th>
<th>Not so important(%)</th>
<th>Important (%)</th>
<th>Very Important (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alfa</td>
<td>14,3</td>
<td>46,4</td>
<td>28,6</td>
</tr>
<tr>
<td>Other companies</td>
<td>4,26</td>
<td>40,43</td>
<td>57,45</td>
</tr>
<tr>
<td>Factors related to Legislation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alfa</td>
<td>17,9</td>
<td>46,4</td>
<td>35,7</td>
</tr>
<tr>
<td>Other companies</td>
<td>10,64</td>
<td>42,55</td>
<td>46,81</td>
</tr>
</tbody>
</table>

Source: the authors (2009)

The modifying factors in reverse channels are identified by government intervention. They change the natural balance of the market in order to improve the supply of post-consumption quantities available and recycled, regulate the waste disposal or the market conditions for products made with secondary materials, among other possibilities, allowing the implementation of reverse logistics in the companies of the sector (LEITE, 2003, p.152). The author also states that the current laws are intended to blame the manufacturers, directly or indirectly, for the impact of their products. The best destination for the reverse products indicated by Alfa’s employees was the return to the production cycle (75%) and 25% (recycling). The other companies showed 47% recycling and 43% return to the production cycle. According to Stock and Lambert (2001), many materials can be recycled or reused, resulting in revenues and profits. Czinkota and Ronkainen (2008) explain that reverse logistics has gained more importance due to environmental concerns and to the development of reverse distribution systems. Such systems are crucial to ensure that the company will not only deliver the product to the market, but can also retrieve it from the market for subsequent use, recycling or disposal.

2) Advantages for the company and benefits for customers and the society

The last part of the survey consisted of open questions intended to check which were, in the opinion of respondents, the most significant dimensions for the company in terms of advantages, and the benefits for customers and the society through the practice of reverse logistics. An analysis of content was carried out and the data was exported to Excel software for compilation. Concerning the most significant
"advantages" for the practice of reverse logistics in "Alfa company", as Figure 4, the following dimensions were highlighted: reduction in product cost (27.94%) and competitive edge (19.12%). The dimensions treated as others were: development of environmental technology, marketing, waste reduction, environmental preservation, quality, relationship with environmental agencies, profitability and durability. Competitive costs, according to Ghemawat and Rivkin (2000), is the starting point for a competitive-edge strategic analysis. A low-cost position is key for added value and for a competitive edge. From a financial standpoint, Gill and Marins (2006) state that there is a cost related to the management of reverse flow, which is added to the cost of purchasing raw materials, storage, transport and production. These are traditionally taken into account in Logistics. "The interest in analyzing competitive costs has survived the decline in the experience popularity curve of the 1970s, but has been redesigned in two important aspects. First, greater attention was given to the breakdown of business and its components, and the assessment of how costs could be shared between businesses in a particular activity. (Ghemawat, Rivkin, 2000, p. 62).

Concerning the main advantages in the practice of reverse logistics for the other "companies" as per Figure 5, the following dimensions were highlighted: reduction in product cost (17.54%) and environmental awareness (12.28%). The dimensions treated as others were: organization of the production process, cost increase for the customer, enhancement of brand image, ethics, longer useful life of landfills, customer loyalty, improvement in mark-up margins and reduction in environmental impacts. We can see that in both surveyed companies (Alfa and other companies), cost reduction was the main dimension. Concerning the main advantages for Alfa’s customers, as per Figure 6, the following dimensions were highlighted: reduction in product cost (23.40%), reduction in environmental liability (19.15%) and ecological materials (17.02%). The dimensions treated as others were: safety, compliance with legislation, sustainability, quality, customer loyalty and resilient products. The reduction in environmental liability highlighted by Alfa’s employees is due to the fact that customers are monitored by cognizant environmental agencies within each region of the country concerning the destination given to products after their useful life is ended. In addition to playing its social role, the company helps customers handle these products in a socially-responsible manner.

Figure 4 – Main advantages gained by the company, according to Alfa’s employees.

Source: the authors (2009).
Concerning the main advantages for customers, as per Figure 7, the following dimensions were highlighted: reduction in product cost (26.19%) and reduction in environmental liability (11.90%). The dimensions treated as others were: after-sale relationship, customer loyalty, safety, advertisement, sustainability, quality of life, creation of opportunities. When evaluating the advantages for customers, the respondents treated reduction in product cost as the main dimension. This is true, as Alfa has reduced costs in its product line using reverse raw-material. According to studies carried out by Czinkota and Ronkainen (2008), the objectives of successful reverse logistics are the same: recover returns at the maximum possible value, maintain customer loyalty, control costs and gather information to help reduce future returns. The successful reverse logistics considerably affects the bottom line of a company.
With reference to the advantages for Alfa’s employees, as per Figure 8, the dimensions highlighted were: preservation of the environment (28.57%), pollution (24.49%) and less use of natural resources (16.33%). The dimensions treated as others were: creation of jobs, investment in other material, reduction in product cost, waste reduction, and substantial gains. An important dimension indicated by the staff was the creation of jobs. According to Nascimento (2008), when the customer buys a product with recycled material in its content, he is not just making a choice between the type of raw material (product) he will take home, but he is also staying that he wants to create job opportunities for people in need, reduce the extraction of raw materials from the environment, reduce the volume of waste generated, etc. The "increase in the lifespan of landfills" was also recalled because the greater the number of recycled products the less necessary will be to use industrial landfills.

Concerning the main "advantages" for the society, the employees of other companies highlighted, as per Figure 9, the following dimensions: reduced pollution and preservation of the environment, both with 13.04%; reuse of material and waste reduction, both with 10.87%. The dimensions treated as others were: safety, products conforming to legislation, reduction in product cost, strategic positioning and less environmental impact.

Source: the authors (2009).
V. Final Considerations

This research has identified the reasons and factors for the company engaged in reverse logistics, as well as the perceptions of employees of other companies in Caxias do Sul, in addition to the advantages and benefits for customers and the society. It is noticeable that there are some differences in the answers given by the surveyed companies. In the strategic reasons that lead companies to engage in reverse logistics, Alfa considered as very important: increase in productivity, followed by compliance with legislation and rising in economic value, at the same level, and finally "asset recovery". The other companies consider as important: rising in economic value, increase in productivity, compliance with legislation and asset recovery regarding the modifying factors that may influence the practice of reverse logistics, Alfa considered as important ecologic factors followed by legislation. The other companies have considered as very important the same factors: ecologic and legislation. According to Esty and Winston (2008, p. 121) not all customers want green products, but a larger number of customers includes environmental factors in their purchasing equation. Companies that incorporate environmental performance within a strategic vision for recovery of their products will have a distinct advantage over the competition (DIAS; TEODOSIO, 2006, p. 438). The open questions showed what the perceptions of Alfa’s employees were concerning reverse logistics. The perceived advantages and benefits showed some of the strategic reasons that lead firms to engage in this practice, such as the reduction in product cost indicated by Gemawat and Rivkin (2000), the competitive edge stated by Porter (1998), the compliance with legislation and customer loyalty shown by Leite (2003) and the environmental awareness highlighted by Hawken, Lovins and Lovins (2002). These dimensions are crucial for sustainability and for the competitiveness of companies. Some important dimensions in the study were brought into focus, such as: the influence of reverse logistics on the work of people, the collection of products which makes customers more loyal to the brand, and the practice of reverse logistics to strengthen the company’s image in the market. Leite (2003) states that, according to recent studies, leading companies in their market segments already have an a positioning that adds value to their products and their images by means of reverse logistics. In terms of benefits to the society, the dimensions preservation of the environment and reduced pollution were highlighted. These dimensions demonstrate the concern of respondents about reverse logistics benefiting the environment, thus avoiding pollution, reducing costs for consumers, increasing the lifespan of landfills, in addition to social responsibility which creates jobs and improves quality of life. Other factors highlighted in the study were: the lack of understanding, from respondents, about the term reverse logistics and the association made by those who knew about packing recycling. The studied literature brought several examples of recycling practices in areas such as construction, metal-mechanical, plastics and others. Perhaps there should be a greater concern by institutions interested in promoting what reverse logistics is and explain to the population which materials can be recycled. As future studies, we suggest an increase in the sampling of this research and statistical studies to determine the correlation among dimensions, in addition to applying this same research to Alfa’s customers in order to measure the dimensions that they consider important in the practice of reverse logistics.

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