

REVERSE LOGISTICS AN OPPORTUNITY OF CONTRIBUTION FOR ENVIRONMENTAL POLICY FORMULATION

ABSTRACT

The research aimed to identify the perception of TJRO servers regarding the use of reverse logistics, check the degree of awareness of environmental issues, identify the existence of institutionalized disposal policy in TJRO. It is an applied study of a descriptive nature and has literature and field study features. To achieve the objectives of the investigation, it was structured a survey questionnaire which was divided into three distinct categories of information. In the first category was verified the socioeconomic profile of the respondents, the second was found the perception of respondents about the environment. The third category of the questionnaire relates to the perception of respondents on reverse logistics. In this final stage, we opted for the use of a measuring instrument called Likert scale, which revealed to be adequate to the type of evaluation object data. In processing the data, we used the method of descriptive statistics for frequency of verification that respondents expressed the degree of agreement on aspects of the investigation. The results indicate that TJRO servers have a low degree of awareness about environmental issues, ignorance of the concept of reverse logistics, the legislation applied to solid waste policy adopted by TJRO in relation to recommendation 11 of the CNJ and how TJRO performs the disposal of their waste, on the other hand ratified that the disposal of the goods may also be used are discarded in the form of donation.

Keywords: Reverse Logistics. Environmental awareness. Disposal.

1 INTRODUCTION

The variety of products with life cycles getting shorter, the growing awareness of the population in relation to the environment and the constant improvements in environmental standards, are factors that have contributed to the growth of social and environmental responsibility by private companies and public agencies. Public and private organizations have seen grow their responsibility to society and to keep up to date

in their productive processes and differentiated services to their clientele, the client citizen, are necessary changes in the production chain.

Greater interest of the industry environmental awareness has been observed due to increased pollution, preventive legislation innovations and growth of demand for products and sustainable production processes. Allied to this fact, there is a growing requirement of society in search of a more specialized level of service, where includes greater attention to the environment. In this context it is important that companies, public and private environments to deploy and invest in reverse logistics activities as a differentiating factor. According to Lourenço and Barrancos (2011) the change in consumer culture of the actors involved would be encouraging primarily the use of reverse logistics, which aims to facilitate the return of the goods or their materials to production cycles or business, with a vision of aggregate economic, social and environmental value. From this perspective, reverse logistics plays an opportunity to role in Public Administration generating significant benefits because the public administration is presented as a major consumer of products, considering the volume of purchases, resulting in the production of solid waste that must be disposed properly.

Both private and public organizations have sought to tailor their activities to social and environmental responsibility principles contributing to improvements that may influence the image of the institution, generating results, cost savings and competitive advantage. Public organizations produce a significant amount of waste and therefore, these organizations must seek new alternatives to the use of these materials. In this sense, it presents the question that guided this research: The Reverse Logistics is perceived by the servers of the Court of the State of Rondônia as environmental impact mitigation instrument? The study's goal is to identify the perception of servers the Court of Rondônia - TJRO regarding the use of reverse logistics.

The research is justified by the need to verify the perception of servers TJRO regarding the importance of carrying out the disposal of waste generated by this body properly. The judicial Power of Rondônia state is an organ that has a fleet of vehicles and a significant technology park (computers, printers, scanners), being necessary supplies for these goods operate effectively, it is therefore essential that waste is disposed of properly so that they can contribute to the environment and social responsibility in this context is part of reverse logistics as a management tool that can help the public authorities in raising awareness and mitigation of environmental impacts caused by improper disposal of waste that can be recycled in environment.

2 THEORETICAL FUNDAMENT

Recommendation No. 11 of 22 May 20007, of the National Council of Justice - CNJ recommended that all courts related to items II to VII of art. 92 of the 1988 Constitution,

[...] Adopt public policies aimed at formation and recovery of an ecologically balanced environment, beside awareness of own servers and claimants on the need for effective protection of the environment, introduce environmental committees for planning, preparation and accompanying measures, with fixing annual targets, aiming at the correct preservation and restoration of the environment. Guide to Social and Environmental Standards CNJ (2012, p. 7).

The Law n. 12,305 August 2010 establishing the National Policy of Solid Waste (PNRS) that sets goals, guidelines and mechanisms for the proper management of waste throughout the national territory by public and private companies, also specifies how should be established the methods to implement the reverse logistics, through sectoral agreements between the Government and the participants of the production chain aimed shared accountability for product life cycle.

The 1988 Federal Constitution art. 37, item XXI provides for the obligation for the Union, States, Federal District and Municipalities the duty to bid, except in cases provided by law.

According to Biderman et al., (2008, p. 21) the implementation of sustainable procurement in public bodies "is a solution to integrate environmental and social considerations in all stages of the purchase process and hiring of public officials (government) with the goal of reducing impacts to human health, the environment and human rights. "Sustainable procurement is a processor that seeks to minimize environmental damage and generate economic and social benefits. (SANTOS et al., 2011).

Before the decision-making is necessary to assess whether there is a real need to acquire the product subsequently identify whether the decision could be taken based on the circumstances under which the product was generated, taking into account the materials with which it was done and the working conditions of those who generated it. Third, an assessment should be made in relation to its future, ie how this product will behave during its service period and after its final disposal.

Public administration can create sustainable procurement criteria one example is adopted in Instruction No. 1 of January 19, 2010, of the Department of Logistics and Information Technology of the Ministry of Planning that under Article 3 of Law No. 8666/93 which defines and establishes environmental sustainability criteria to be adopted in purchases by direct administration, autonomous agencies and foundations of the federal government.

For Ferreira (2012) the inclusion of environmental, social and economic criteria in the bidding process fulfills the social function, since this may override the administrative, financial and technical interests as evaluation criteria.

2.1 Reverse Logistics

For reintegration to the production cycle most dropped goods there some necessary conditions, or recycling technology or market for materials applications etc. Such conditions may well be put in place with the positive influence of the government in order to establish the reverse logistics (MILK, 2003). To Mansor et al., (2010, p. 25) "[...] reverse logistics is defined as a socioeconomic tool for development and environmental management, characterized by a set of actions, procedures and means to facilitate the collection and restitution of solid waste to the producers [...] ". The goal of reverse logistics, according to the author, is the reuse in new products aimed at not forming or reducing waste.

Piazza et al., (2007), with the trend of the use of reverse logistics, the companies in order to remain on the market will need to upgrade in the search for new alternatives to reduce environmental impacts of processes and products, from the materials and inputs energy used in production to recycling and final disposal of the waste and the products themselves.

Organizations sighted in reverse logistics an economically viable option for both consuming and for those who produce. Reverse logistics is concerned with the integral development of enterprises, in that it aims to incorporate into its management the disposal of solid waste in a conscious way, by recycling, reusing and concern the development of new returnable packaging. It also includes channels reverse post-sale and post-consumption, thus anticipating environmental laws and reducing costs. Another benefit of this practice is to improve their image. Thus, the awareness and commitment of those

involved in the production chain, brings significant results (Lacerda, 2002 apud SANTOS, 2009, p. 19).

Reverse logistics aftermarket stands out as an important service provided by companies that have adopted greater operational flexibility and provided high levels of value in relation to its customers. According to Leite (2003, p. 25) "Reverse logistics aftermarket, can be interpreted as one of the modernization criteria key to a lasting relationship aimed at customer loyalty." Thus, the companies believe that the maintenance of post-sales reverse cycle adds greater fidelity of the target customer.

The logistics of post-consumer seeks to add value to an asset that can be sourced from durable or disposable assets in its end of life or used with reusability, covering the flow of reverse channel reuse, remanufacturing and recycling to final destination . Reverse logistics of post-consumer "and equates also operationalize the physical flow and related information post-consumer goods discarded by society in general returning to the business cycle or production cycle through specific reverse distribution channels" (LEITE , 2003, p. 206).

2.2 Reverse logistics and the environment

Reverse logistics is intended to make companies worry about the environmental impact in the production cycle of its products, minimizing damage to the environment and meeting its customers with more sustainable products. For Leite (2009, p.116), "Perception and growing sensitivity to the environment have become mandatory in statements of trade missions".

Ecological sensitivity is part of the consciousness of all those involved in the process of production and consumption, thus sharing, responsibilities at all stages of the production chain, so that does not cause damage to the environment. According Razzolini

Filho and Berté (2009) is the consolidation of globalization emerging concerns about the ecological issue, because the problem that occurs in one place can affect other places.

The ecological sensitivity presents itself in all product life and involves the commitment of all involved; manufacturers, businesses, consumers, and governments, (LIMA, 2012). Reverse Logistics is the tool that assist businesses in their logistics processes with a concern that these products will return to its productive cycle at the end of his life, without harming the environment.

When purchasing products consumers need to demand environmentally friendly products, thus encouraging the companies to rethink the process of manufacture of its products; They must take care to not discard their trash anyway, without thinking, the environment and need to return the product to the manufacturers, which in turn will give the appropriate destination. It is up to governments to support companies and foster support measures so that they can implement reverse logistics in their production processes. Companies should be alert to environmental legislation so that their products will not negatively affect the environment and thus provide a sustainable corporate image to their customers who are increasingly aware and demand sustainable products (LIMA, 2012). They must rethink the way they manufacture their products, reducing harmful impacts on the environment.

3 METHODOLOGY

The Court of Justice of the State of Rondônia - TJRO is an organ considered new before the other country's Justice Courts, has only 33 years. Created on December 22, 1981, through the Federal Complementary Law n. 041/81, was initially composed of seven (7) judges, currently TJRO is composed of 21 (twenty-one) judges. Is still being

structured mainly with respect to the middle area, ie, the administrative area. There are 23 Counties installed and 19 Outposts Quick justice throughout the state. Of these 23 Counties two (2) are 3rd Instances, thirteen (13) 2nd and 8 (eight) are 1st Instance, the Court of Headquarters is located in the state capital. (TJRO, 2015).

In this work, were initially performed exploratory studies to know and obtain more information on the subject related to the research problem. It is a nature study applied qualitative how to approach the problem and descriptive in describing the process of reverse logistics of the Court of the State of Rondônia, featuring as well as field study (SIENA, 2007).

To achieve the objectives of the research, it was designed a questionnaire survey, structured into three distinct categories of information. In the first category there was the socioeconomic profile of the respondents in the second there was the perception of respondents about the environment, and the third category of the questionnaire was to identify the perceptions of respondents about the reverse logistics. The questionnaires were applied to the servers of the Court of the State of Rondônia of the Logistics Support Center, the Purchasing Department and the Department of Economy and Finance of the Court. These sectors were chosen because they are directly responsible for the purchase orders, the procurement and execution of the expense.

The research universe consists of 102 (one hundred and two) servers and the sample reached a total of 97 (ninety seven) respondents, which corresponds to approximately 95.09% (ninety-five point zero nine percent) of the universe.

4 PRESENTATION AND ANALYSIS OF RESEARCH RESULTS

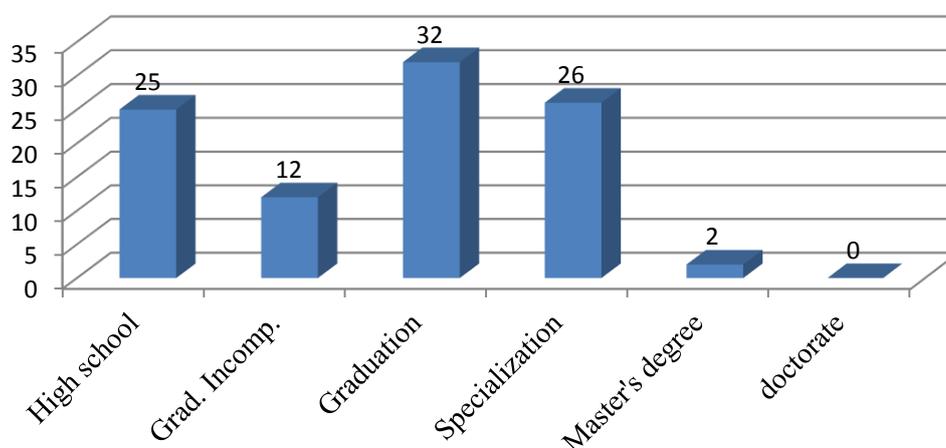
This section was divided into three parts. The first was evidenced the socioeconomic profile of the respondents, the second showed the perception of respondents with regard to environmental issues, already the third was found the perception of respondents about knowledge of the concept of reverse logistics.

4.1 Profile of Research Respondents

For the research it was found that respondents predominantly (61%) are aged over 35 years old and mostly (52.58%) are male. As for the educational level is observed in chart 1 the prevalence of people with a high level of education, including post-graduation and strict sense. Only a minor portion has high school. As for the respondents function of time in your work sector, it was shown that 66% of respondents are in the range of 1-10 years, a reflection of staff turnover in these sectors and the admission of new servers.

Figure 1 - Level of Education

Level of Education

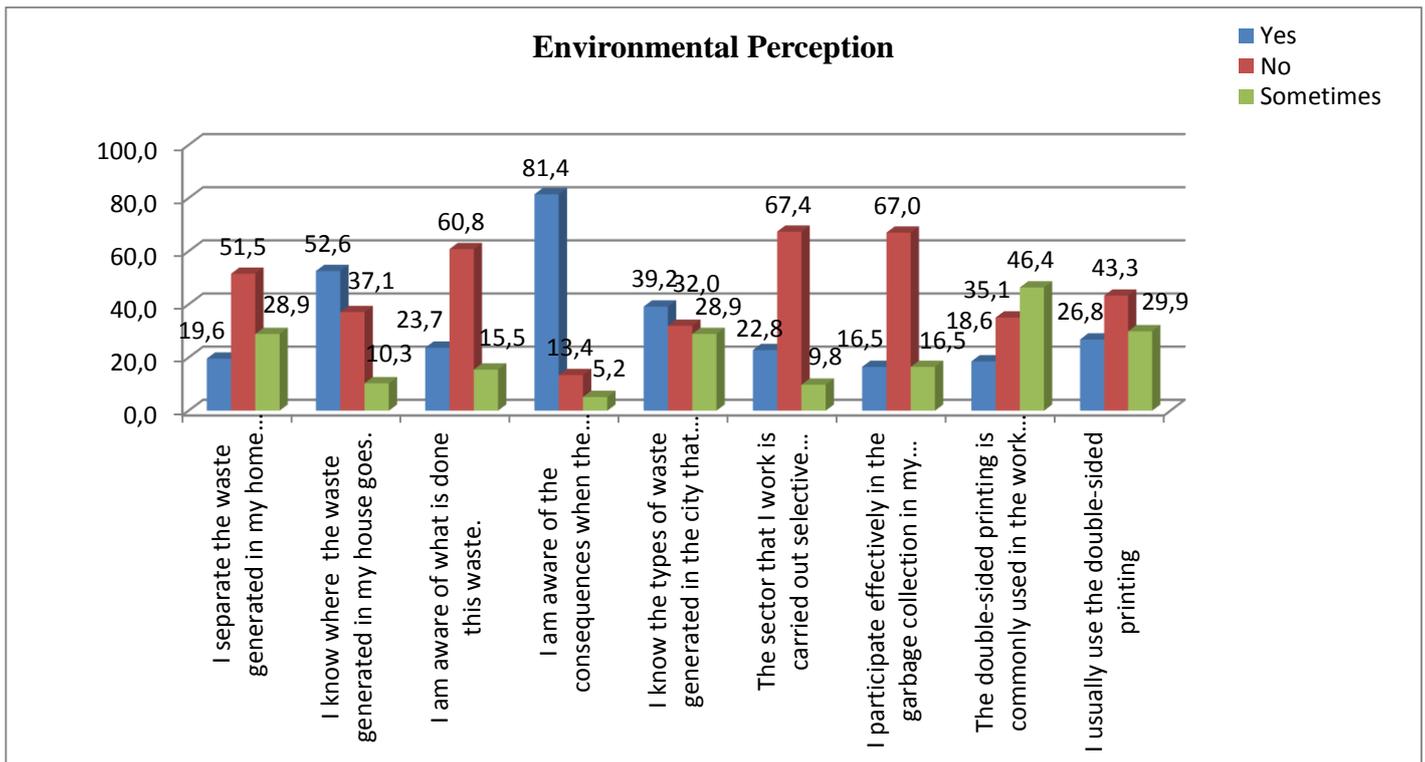


Source: Survey data (2015).

4.2 Environmental Perception of Respondents

The set of information related to environmental perception of TJRO servers that are included in the realization of procurement and contracting procedures are represented in Chart 2. It is observed that 81.40% of respondents said it is aware of the consequences when the garbage is thrown in inappropriate place, but it appears that a significant percentage of respondents does not have adequate environmental awareness to environmental issues. This is corroborated by most respondents claim that by not separating the waste generated in their homes and 51.50% do not perform selective collection 67.40% or participate in selective collection in your work sector 67%.

Chart 2 - Environmental Perception



Source: Survey data (2015).

4.3 Perception of the concept of Reverse Logistics

Table 1 demonstrates that the concept of reverse logistics and the laws of solid waste are little known, since most respondents are indifferent to the subject. The degree of knowledge of the respondents in relation to how the TJRO performs the disposal of waste such as batteries, batteries, tires and goods that are still in working condition as computer equipment, furniture and others are also low, considering that the result showed that most respondents are indifferent to how the TJRO performs the disposal of such waste. The results show that respondents have little knowledge about the 11 2007 recommendation of the CNJ and the policy adopted by TJRO to comply with this resolution. The survey results it appears that the TJRO not have environmental commission, and information about how it is done disposal are difficult to access in TJRO.

Table 1 - Perception of the concept of Reverse Logistics TJRO.

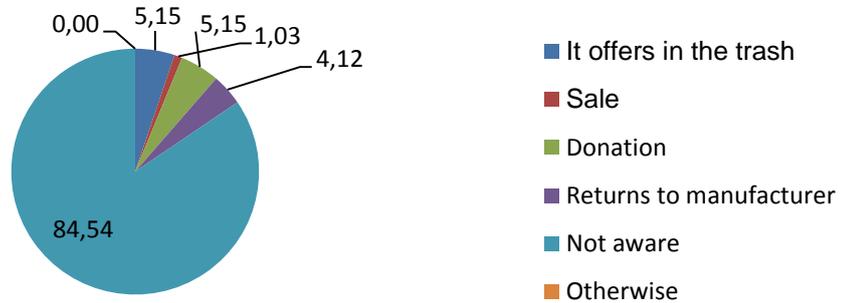
ISSUES	CT	CP	I	DP	DT
I understand about the concept of Reverse Logistics.	12,37	22,68	45,36	13,40	6,19
I Have knowledge about the application of Law No. 12,305, August 2010	7,22	13,40	51,55	16,49	11,34
I know how the TJRO performs the disposal of their waste.	5,15	8,25	49,48	21,65	15,46
I know how the TJRO performs the disposal of assets.	16,49	28,87	32,99	8,25	13,40
Have knowledge of the Recommendation No. 11 22/05/20007 - CNJ, which recommends that all courts should adopt public policies aimed at forming and recovery of an ecologically balanced environment [...]	10,31	10,31	51,55	17,53	10,31
I am aware of the policy adopted by TJRO aimed at meeting Recommendation No. 11 of the CNJ	6,19	8,25	46,39	24,74	14,43
I understand that the TJRO already instituted environmental commission for the planning, preparation and accompanying measures, with fixing annual targets, aiming at proper preservation and restoration of the environment in compliance with Recommendation No. 11 of the CNJ	9,28	5,15	38,14	14,43	32,99
There is easy access to information related to the disposal carried out by TJRO.	12,37	10,31	32,99	21,65	22,68

Legend: CT = Agree; CP = Partially agree; I = indifferent; DP = Disagree Partially; DT = Strongly Disagree.
Source: Survey data (2015).

The chart 3 shows how to dispose of products after use, adopted by TJRO. The vast majority of respondents are unaware of how it is done the disposal of waste generated by TJRO; Additionally, 5% of respondents confirmed that such waste is disposed of in the garbage, showing improper disposition for those wastes.

Graph 3 - Waste disposal form

The TJRO performs the disposal of their wastes such as tires, batteries, and others as follows:

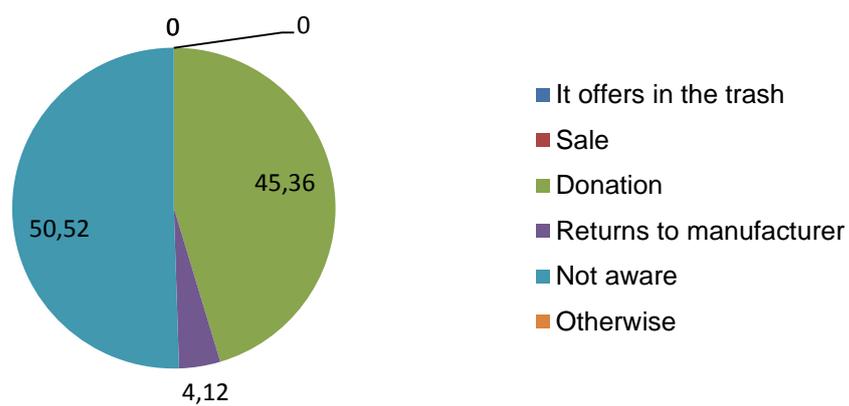


Source: Survey data (2015).

At Graph 4 identifies how the TJRO performs the disposal of goods which are still with the possibility of being used. The result shows that 50.52% of respondents are unaware of the disposal of these assets, on the other hand 45.36% of respondents confirmed that the disposal of these assets is held in the form of grants, such information can be confirmed in frequent publications in the Journal Justice of the State of Rondônia.

Graph 5 - Disposal methods of goods that can still be used

The TJRO performs the disposal of assets that can still be used as follows:



Source: Survey data (2015).

5 CONCLUSIONS

The study concludes that the reverse logistics is little known by the servers of TJRO sectors, Logistics Support Center, the Purchasing Department and the Department of Economy and Finance. Whereas the servers surveyed mostly have good academic background (university degree and expertise) would expect a different result. It was found that the respondents have a low degree of awareness of environmental issues; perform a few actions that could mitigate damage to the environment, such as separating waste in their homes and participate in selective collection in your workplace, and unaware of the concept of reverse logistics and the rules of solid waste, and unaware of the 11/05/2007 recommendation of the CNJ. Also confirmed that the TJRO has no public policy adopted to meet this recommendation, ie, to minimize the waste generated by this body, which corroborates this result. In the final part of the survey revealed participants have no knowledge of how TJRO performs the disposal of their waste, on the other hand ratified that the disposal of the goods may also be used are discarded in the form of donation.

Finally, you can opine that the public manager needs an environmental awareness and the use of Reverse Logistics could be a powerful tool for contributing to a reduction of environmental impacts of policy.

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