

RESULTS OF SOCIO-ENVIRONMENTAL STRATEGIES AND PRACTICES IN FLEXOGRAPHIC PROCESSES

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ABSTRACT

This study aims to identify the results of social and environmental sustainability strategies in flexographic printing processes of labels and labels. The research consisted of a literature review, followed by an exploratory-descriptive study of qualitative nature. Data collection took place in a primary way through a semi-structured on-site interview with the company's owner, and also involved access to documents. In conclusion, the article analyzes the results of two years in relation to social and environmental practices and the identification of sustainability practices obtained in the company.

Keywords: Strategies; Sustainability; Environmental Management; Sustainable Practices; Flexography

1. INTRODUCTION

The contemporary organizational environment presents a complex structure, requiring its manager's creativity in the formulation of models and management skills that allows to meet their objectives (Michael; 2013, Crossan & Apaydin, 2010). In this organizational structure, the perception of sustainability is of fundamental importance for the adequate provision of services under systemic conditions in the search for adequate service delivery (Maes, Guarido Filho & Costa, 2018).

In the area of science, we emphasize the importance of studies in the search for sustainable practices aimed at the performance of organizations and industries, having the role of improving professional development and institutional growth focusing on the economic,

social and environmental dimensions (Narazaki; et al, 2018, Amaral, Stefano & Chiusoli, 2018, Eidt & Coltre, 2018).

It is emphasized that sustainability is a strategic area of the organizational process, in order to provide improvements in the environment and in the processes of economic growth, which are related to society along with the efficiency in the use of natural resources (Lozano, 2012). Linked to this, (Reid et al., 2010) reports that sustainability has some challenges associated with the following criteria: (i) need for global coordination; (ii) relevance for decision makers; and (iii) leverage. Thus, there are numerous challenges, such as: implementing sustainable standards; make behavioral and cultural changes in organizations, balanced production, planning and holistic approaches (Sartori, Latronic & Campos, 2014).

In this sense, there is evidence of scientific productions related to sustainability in their different performances, but it is identified an opportunity for new studies on this theme that establish a relationship between theoretical and management aspects.

Analyzing this scenario, the main purpose of this study was based on the survey of cost results of social and environmental practices of the company Suppry Etiquetas do Vale do Vale Taquari of the state of Rio Grande do Sul, based on concepts of sustainable development and the processes associated with flexographic activity. The analysis focuses on the need for a link between the two terms to promote sustainable development within the flexographic printing process, based on direct production costs, waste and rework costs, investment in personal development and costs with electricity and waste treatment, in addition to human resources engagement.

The study has relevance given the deficiency of studies aimed at the analysis of theoretical and management aspects regarding the behavior of sustainable practices at regional levels. Also, there are more recent studies that have come to consider the importance of sustainability in aspects of competitiveness in the organizational sector, associating the complexity of social requirements designed in order to maintain development over generations.

As for the structure of this article, it will be given through four sections in addition to the introduction. At first, the theoretical framework on sustainable practices will be presented, contemplating its evolution in general scope and, soon after, emphasizing its importance in graphic companies. Next, we report the methodology used in the research, followed by the analysis and discussion of the results and the final considerations.

2. THEORETICAL FOUNDATION

2.1. Origin of the Sustainability Theme

The dynamics of the economy and customer expectations have changed the characteristics of the company's service and product flows. The perception of sustainability is no longer considered an accessory part and began to have a more strategic focus, as an element of differentiation, contributing to the competitiveness of organizations. (Guimarães; Severe & Vasconcelos, 2017). Competitive advantage is a constant search of organizations to be in a privileged position, presenting unique characteristics and processes of services and/or products, considering the company's relations with others (Porter, 1980).

From this scenario, it is emphasized that sustainability emerges as an attribute of competitive advantage, contributing to differentiation, through new socio-environmental practices and new organizational processes (Severo et al., 2015). However, sustainability is not a new theme and has been gaining ground in recent decades with international authorities and institutions (Pimenta & Nardelli, 2015).

It can be affirmed that this theme arose in 1968 with the creation of the Club of Rome, an organization formed by scholars and intellectuals with the objective of discussing issues related to sustainable development. This meeting originated the Meadows report, known as "The Limits of Growth", prepared by scientists from the Massachusetts Institute of Technology (MIT), which was intended to communicate on the forecast of population growth tied to the development without limits and the decrease in natural resources (Oliveira; et al, 2012). However, this study was criticized because it preached the idea that it would be unfair to prevent the growth of poor countries, since the problem had been provoked by developed countries (Solow, 1974).

However, the first attempt to conceptualize the theme of sustainable development began in the 1980s, with the preparation of Brandt's report, known as "Our common future" at the United Nations Conference on Environment and Development (UNCED), held in 1987. Through this document, sustainable development is "one that meets the needs of the present without compromising the possibility of future generations meeting their own needs". Since then, the theme has been discussed as a priority by virtually all countries, emphasizing the importance also for organizations in the business world.

Tied to its importance, the theme still generates reflections and different understandings, which represents little time for discussion in recent decades for a better understanding of national and global environmental problems, as well as for verifying the effectiveness of actions aimed at minimizing social and environmental impacts (Leal, 2009).

2.2. Conceptual Approaches to Sustainability

Throughout the human awareness of the conservation needs of natural resources, different conceptions and approaches have emerged that should be analyzed from different perspectives (Ekincioglu; et al., 2013). Camargo, Capobianco and Oliveira (2015) define sustainability as a transformation process in which the exploitation of resources, investments, orientation of the technological development process and institutional changes harmonize and encourage the thinking of the present and future, with the objective of understanding human needs and aspirations.

Over the years, the growth of industrial activities has contributed to the emergence of studies and discussions on the risks of environmental processes and their relationship with industry (Zhong & Wu, 2015). Thus, society began a process of awareness, with the purpose of understanding the adversities of the harmful effects of industrialization and disordered urban expansion (Bork, Junior Beard & Gomes, 2015).

In this context, there is a concept of the Triple Bottom Line (TBL), which creates a model aimed at organizations that had not yet become sensitized (Hardi, 1997, Becker, 2004). Since then, many companies have started to perform professional development tied to institutional growth with a focus on the economic, social, environmental and interrelations dimensions (Narazaki; et al, 2018, Amaral, Stefano & Chiusoli, 2018, Eidt & Coltre, 2018; Isenmann, Bey & Welter, 2007).

In this context, sustainability is a global concern and has become familiar to most people, especially in developed countries. It is discussed in the sense of reducing environmental degradation, considered as an immediate consequence of economic growth. The term has been used in the sense of human survival on Earth. It can then be interpreted as the need to conserve natural resources from limits to the growth of human activities, which, consequently, would lead to a reduction in the rate of environmental degradation. Under this approach, the main challenges to be faced would be the problems related to increased consumption and population (Nardelli, 2001, p. 3).

Given this scenario, the term sustainable development is revealed as a subject of debate, gaining space in recent decades, having the role of improving the professional development

and growth of organizations, tied to debates with world authorities (Pimenta & Nardelli, 2015; Oliveira, et. al, 2012).

According to Arayici et al. (2011), sustainable development is all action responsible for conserving, maintaining or balancing, noting that developing implies growth, generation, production and progress. However, sustainable development refers to the idea of maintaining itself in a balanced way (Taborianski & Prado, 2012).

Tied to its importance, the theme also generates reflections and different understandings, which represents little time for discussion for a better understanding of national and global environmental problems, as well as for verifying the effectiveness of actions aimed at minimizing social and environmental impacts (Leal, 2009).

3. METHODOLOGY

The present research, which was the result of socio-environmental concerns, was constituted in an exploratory-descriptive study due to the description of the characteristics of the case. exploratory because it intends to develop a better understanding and deepening with relations with social and environmental concerns. According to Gil (1991) some descriptive studies approach the explanations, serving to provide a new view of the research problem.

Data collection took place in the primary way, through a semi-structured on-site interview with the company's owner, and also involved access to documents.

The research observed issues that involved the sustainable development of a flexographic printing printer in order to make its manufacturing process less impactful to the environment. Demonstrate that it is possible for a company to develop internal policies focused on environmental management, seeking new forms of sustainability that avoid environmental degradation.

4. ENVIRONMENTAL SUSTAINABILITY ACTIONS

4.1. The Company

The company Suppry Etiquetas is located in the municipality of Estrela in the state of Rio Grande do Sul, which is one of the fastest growing diversification centers in the state of Rio Grande do Sul and serves, with its services, the entire national market.

Its competitive differentials are the existence of state-of-the-art machines, skilled professionals and a sales team attentive to market needs. It was noticed that intellectual capital,

and the valorization of the individual with an integral part of the process, are fundamental for the development of the company.

Aware of the need to reinvent itself in all its processes and the implications in people and the need to keep in developing social and environmental actions, the company seeks to write a new page of its history in a multidimensional way.

5. ANALYSIS OF RESULTS

The results that will be presented are related to socio-environmental actions implemented by the company Suppry Etiquetas in the years 2017 and 2018, being made a comparison of the two years in question.

5.1. Results of the Company's Social and Environmental Actions

The data that will be presented, allow an analysis of possible variations of results, with characteristics of sample elements collected in Suppry Etiquetas, over two years (2017 and 2018), a period marked by a series of changes in the company, socio-environmental issues begin to be addressed in a strategic sphere, emerging a multidimensional management model.

In this future, the company's great challenge is to seek an environmentally sustainable development, which is one of the strategic priorities defined in the strategic scope of Suppry Etiquetas. Through it the company intends to promote an economy that is not only competitive, but also efficient in terms of resource use, making its socio-sustainable actions both in economic, social and environmental.

For a better analysis of the results, all collected data were segmented into four groups: direct production costs, waste and rework costs, investment in personal development and costs with electricity and waste treatment.

The suggested segmentation model allows the realization of a multidimensional analysis of the company's production processes, which are being worked strategically, seeking to highlight whether or not there was a change in the habits of its employees, from the implementation of social and environmental management practices.

Table 1 presents data on direct production costs for the years 2017 and 2018 measured in Suppry Etiquetas.

Table 1: Direct production costs 2017 versus 2018

Description	Year 2017	Year 2018	% Repres. Fat 2017	% Repres. Fat. 2017
Master Box	R\$ 24.009,00	R\$ 24.355,00	0,64%	0,51%
Paints/Solvents	R\$ 63.349,00	R\$ 56.901,00	1,68%	1,18%
Paints/Water	R\$ 21.354,00	R\$ 52.098,00	0,57%	1,08%
Shipping/Sales	R\$ 57.371,00	R\$ 59.873,00	1,52%	1,24%
Overtime	R\$ 23.456,00	R\$ 5.647,00	0,62%	0,12%
Total	R\$ 189.539,00	R\$ 198.874,00	5,03%	4,13%
Billing/Sales	R\$ 3.767.067,00	R\$ 4.819.068,00		

Source: Prepared by the authors, based on the research conducted in 2020

The data presented in Table 1 show that the production costs analyzed in 2017 represent 5.03% of Suppry Etiquetas revenues. In 2018, these costs represented 4.13% of the company's total revenue, demonstrating that there was a reduction in the consumption of the company's available resources, considering an increase of 21.82% in its sales revenues, compared to 2017.

Among the factors that impact this reduction, we highlight reverse logistics actions that the company performs with its customers, in which it is possible to mention the reuse of master boxes used for the transportation of shipped products. According to Fontoura e Silva (2018), reverse logistics is characterized as a procedure designed to enable the collection and refund of solid waste to the business sector so that they are reused in their production cycles or destined for disposal in an appropriate place in order to preserve the environment.

Another aspect, which has an impact on this reduction is the consumption of inks, which represent one of the main raw materials of the printer for printing labels and labels. The use of solvent-based paints in 2017 represented 1.68% on the company's revenues, in 2018, this consumption came to represent 1.18%, in contrast the use of water-based paints went from 0.57% of the company's revenue in 2017 to 1.08% in 2018, almost doubling its consumption, and water-based paint is approximately 35% cheaper than solvent-based paint.

According to Freitas (2014), the use of raw materials from renewable sources, in a weighted way, would allow natural resources not to be exhausted. In a social analysis, reducing the use of solvent-based paints would also allow a reduction in the emission of volatile organic compounds that emit pollutants in the air of the company's productive areas, improving working conditions for the people who work there.

After the analyses regarding direct production costs, we started to survey the investments related to the development of people, which is presented in Table 2, referring to the years 2017 and 2018.

Table 2: Investments in people development 2017 versus 2018

Description	Year 2017	Year 2018	% Repres. Fat 2017	% Repres. Fat. 2017
Vocational Training	R\$ 5.678,00	R\$ 17.896,00	0,15%	0,37%
Uniforms EPIs	R\$ 3.456,00	R\$ 9.678,00	0,09%	0,20%
Safety of Work	R\$ 4.569,00	R\$ 15.657,00	0,12%	0,32%
Total	R\$ 13.703,00	R\$ 43.231,00	0,36%	0,90%
Billing/Sales	R\$ 3.767.067,00	R\$ 4.819.068,00		

Source: Prepared by the authors, based on the research conducted in 2020

The data presented in Table 2 show a significant increase in investment related to people development by Suppry Etiquetas. In 2017, 0.36% of the company's total revenue was invested in people development, already in 2018, this investment increased to 0.90%.

The investment, with professional training of the company in 2017 represented 0.15% of its revenues, in 2018, now represents 0.37%. This increase in investment happened through the understanding of the company's management, that its main competitive differential in the market is people. In this sense, Porter (1989) points out that there is a competitive advantage when a strategy is perceived by internal people, customers and the market, giving rise to a positive response as a reaction. Mintzberg et al. (2000) add to this thought of Porter that this competitive advantage is instituted using all strategic means fixed by the organization and that they are difficult to imitate, as is the case of quality, management models and models of the social sphere that involve resources from the management of company workers, such as good internal communication and culture.

Another aspect, which deserves to be highlighted is the investment in occupational safety made by Suppry Etiquetas, considering that in 2017 0.12% of the company's revenues were invested, already in 2018 this percentage began to represent 0.32% of its revenues, this increase had as main objective to ensure the prevention of occupational accidents that harm the physical and mental integrity of the worker, making work environment healthier.

After analysis of the investment in people development, we start to analyze the costs of waste, rework, returns and repositions, which will be presented in Table 3, referring to the years 2017 and 2018.

Table 3: Costs of waste, rework, returns and repositions 2017 versus 2018

Description	Year 2017	Year 2018	% Repres. Fat 2017	% Repres. Fat. 2017
Waste/Rework	R\$ 88.217,00	R\$ 81.217,00	2,34%	1,69%
Returns/Replacements	R\$ 19.129,00	R\$ 21.324,00	0,51%	0,44%
Total	R\$ 107.346,00	R\$ 102.541,00	2,85%	2,13%
Billing/Sales	R\$ 3.767.067,00	R\$ 4.819.068,00		

Source: Prepared by the authors, based on the research conducted in 2020

The data presented in Table 3 show that the costs of waste and rework, in 2017, represented a percentage of 2.34% of Suppry Etiquetas revenues, already in 2018 this percentage was reduced to 1.69% in relation to its revenue, considering that the company had an increase of 21.82% in its revenue year compared to 2017.

According to Cantidio (2008), the use of resources adequately, as well as the reduction of waste, such as rework, directly influences the result of the company's productivity, demonstrating the importance of having a committed work team concerned with conscious consumption of all available raw materials.

Another aspect presented in Table 3, which deserves to be highlighted, is the reduction in returns and repositions that occurred in Suppry Etiquetas. In 2017, the costs related to returns and repositions represented a percentage of 2.85% of its revenues, already in 2018, this percentage represented 2.13% of its revenues, with a significant reduction, providing the company to increase investment with people development.

After analyzing the costs of waste and rework, returns and repositions, the costs related to electricity and waste treatment for the years 2017 and 2018 were analyzed.

Table 4: Costs with electricity and liquid waste treatment in 2017 versus 2018

Description	Year 2017	Year 2018	% Repres. Fat 2017	% Repres. Fat. 2017
Electricity	R\$ 33.515,00	R\$ 22.992,00	0,89%	0,62%
Liq Waste Treatment.	R\$ 15.119,00	R\$ 25.546,00	0,40%	0,53%
Billing/Sales	R\$ 3.767.067,00	R\$ 4.819.068,00		

Source: Prepared by the authors, based on the research conducted in 2020

Table 4 finds that the costs of electricity at Suppry Etiquetas, in 2017, represented 0.89% of the company's revenue, already in 2018 this percentage came to represent 0.62%. This reduction is related to internal production adjustments in which it can be highlighted the decrease of hours worked at peak times, use of LED lamps, better use of machine setup and greater awareness of employees in relation to conscious energy consumption. Although energy is fundamental both for productive means and for improving people's quality of life, it is important to consciously use this resource, especially by the industrial sector (Menkes, 2004).

Another relevant aspect in the research is the increase in investment for the treatment of liquid waste by Suppry Etiquetas. In 2017, the investment represented 0.40% of revenues, already in 2018, this investment now represents 0.53% of the company's revenue, and paint residues constitute one of the main environmental liabilities generated by Suppry Etiquetas.

According to Verma et al. (2012), wastewater has high staining, turbidity, strong odor and contains high loads of organic and toxic chemicals such as taut agents, bactericides, oils, solvents, and preservatives. The release of these effluents directly into the bodies of water can give rise to ecological instability and serious presences of toxic substances in bodies of water can cause the death of several living beings.

6. FINAL CONSIDERATIONS

One of the main axes of development of social and environmental actions involves the limitation of economic issues, which involve a set of actions between companies and the reordering of capitalism. To do so, there must be a connection between predatory capitalism and concerns about the environment, which consider animals, plants and microorganisms as economic wealth, without affecting future generations. With this, the concept of sustainable development enables the reconciliation between the conservation of the environment, the production of wealth and well-being for society (Ferro, Bonacelli & Assad, 2006). This in nation is supported by Elkington (1994), because sustainable development contributes to generate the triad of economic, social and environmental development.

From the analyses and results of the research, which occurred in the company Supply Etiquetas, it can be verified that sustainable development practices are associated with organizational changes, such as the substitution of production processes, changes in investments in processes and perceptions and relationships in the development of people. This implies organizational investment, technology and internal training and in partner companies. With this, for sustainable development, it is necessary to have innovation actions associated with efforts to replace predatory mechanisms that restrict the environmental sphere.

This research highlights factors that favor the reduction in environmental impact, highlighting reverse logistics actions, in which the company carries out activities with its customers, such as the reuse of boxes for the transportation of products. With this, it is noted that logistics reserve is an important sustainable business strategy, in order to tie the main actors in supply chain management together with technological and managerial innovation strategies.

In this sense, it is perceived that social and environmental sustainability has become a strategic function for the continuities of organizations in the competitive and dynamic business environment. As a result, sustainable development practices began to influence strategic planning and supply chain management, becoming a decisive factor for organizations.

From the analysis of the proposed study, which comprised the sustainable development associated with flexographic activities processes, changes and substitutions of sustainable actions were noticed, in order to use resources in an appropriate way, as well as the reduction of waste, influencing the result of the company's productivity. With this, it was found that Suppry Etiquetas implements conscious consumption actions with social and environmental practices in flexography processes.

In conclusion, it is important to note that this research is pertinent to only one company, and it is relevant to conduct research involving a statistically reliable sample of companies so that the results can be generalized to sustainability actions and practices.

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