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ANALYSIS OF SUSTAINABLE PRACTICES IN MICRO-ENTERPRISES OF THE INDUSTRIAL SECTOR OF THE CENTRAL REGION OF THE STATE OF RIO GRANDE DO SUL

ANÁLISE DAS PRÁTICAS SUSTENTÁVEIS EM MICROEMPRESAS DO SETOR INDUSTRIAL DA REGIÃO CENTRAL DO ESTADO DO RIO GRANDE DO SUL

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ABSTRACT

Nowadays companies are under pressure from the globalized market to have a sustainable, quality and value added attitude. The micro-enterprises along with the ones of small size are the most representative in the world, highlighting the importance of their role in the society according to the Brazilian Support Service for Micro and Small Enterprises - SEBRAE (2017). Therefore, this research aims to analyze the sustainable practices used by microenterprises from the industrial region of the central state of Rio Grande do Sul. To do so, the nature of research is classified as qualitative and quantitative, exploratory, and the methodology used was the multiple case study. The research was applied in five micro-companies of the industrial sector that make up the Metal Centro cluster, through semi-structured interviews with the managers. The obtained data were processed in the software Sphinx Léxica - v5, to aid in the interpretation, after analyzing the quantitative data, the content analysis of the results obtained with the theory approached was performed. .From the research it was evidenced that the micro companies have basic attitudes about sustainable practices, that is, they use those methodologies that are within their reach, because the practices that require a greater degree of dedication, commitment and investment, are not executed. Given this, the results achieved in this research indicate that the development of sustainable practices is not the priority in the business of companies, except in cases of legal norms or government requirements.

Keywords: Sustainability; microenterprises; environmental management; sustainable practices.

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RESUMO

Nos dias atuais as empresas são pressionadas pelo mercado globalizado a possuírem uma postura sustentável, de qualidade e com valor agregado. As microempresas, juntamente com as de pequeno porte, são as de maior representatividade no mundo, o que destaca a importância do seu papel na sociedade de acordo com o Serviço Brasileiro de Apoio às Micro e Pequenas Empresas - SEBRAE (2017). Nesse sentido, esta pesquisa tem como objetivo analisar as práticas sustentáveis utilizadas pelas microempresas industriais da região central do estado do Rio Grande do Sul. Para tanto, a natureza da pesquisa classifica-se como qualitativa e quantitativa, de caráter exploratório, e a metodologia utilizada foi o estudo de caso múltiplos. A pesquisa foi aplicada em cinco microempresas do setor industrial que compõem ao cluster Metal Centro, por meio de entrevistas semi estruturadas realizadas com os gestores. Os dados obtidos foram tratados no software Sphinx Léxica - v5, para o auxílio na interpretação, após analisados os dados quantitativos, foi realizada a análise de conteúdo dos resultados obtidos com a teoria abordada. A partir da pesquisa ficou evidenciado que as microempresas têm atitudes básicas sobre as práticas sustentáveis, ou seja, utilizam daquelas metodologias que estão ao seu alcance, pois as práticas que requerem um grau maior de dedicação, comprometimento e investimento, não são executadas. Diante disto, os resultados alcançados nesta pesquisa indicam que o desenvolvimento de práticas sustentáveis não é a prioridade no negócio das empresas, exceto em casos de normas legais ou exigências governamentais.

Palavras-chave: *Sustentabilidade; microempresas; gestão ambiental; práticas sustentáveis.*

1. INTRODUCTION

The word sustainability is becoming part of the business environment. According to Romano et al. (2011) sustainability can be understood as a complex system, as it involves a set of interrelationships between different variables, such as the economic, environmental and social dimensions. In the business segment, sustainability is still seen as an emerging theme, because companies need to internalize sustainability practices and not just present a peculiar discourse. Sustainable practices are related to the purchase of products and services that aim to reduce or even eliminate impacts on the environment. Thus, the number of companies that are realizing the impact of their activities and choosing to adhere to sustainable practices in their work routine has been growing (Almeida, 2002).

The use of sustainable practices in a company's activities is associated with the use of methods that preserve natural resources, safeguarding the environment that will be enjoyed by future generations. After a long period of exploration of resources without awareness of their finitude, it is gradually noticed that many individuals have realized the impacts that this lack of zeal will bring. (Almeida, 2002; Romano, 2014). In this sense, companies have the greatest responsibility for pollution and exploitation of the planet, where today some companies are adopting sustainable practices in their daily lives, avoiding polluting springs, streams, rivers or seas, preserving native forest, giving the right destination to garbage, capture rainwater, minimize the emission of gases, dust and foam, among others. In addition, they can be simple everyday habits and implement in any business size, such as saving water and electricity and caring for environmental cleansing with environmentally friendly products such as lemon, vinegar and baking soda. sodium (Francischetti, Camargo & Santos, 2014; Santos & Silva, 2017)

Such care must be prioritized, since attitudes that cause environmental impacts generate problems that need to be addressed and that mobilize a global extension. (Almeida & Remebida, 2014). In addition, some consumers already aware of these aspects opt for products or services from companies that adopt sustainable practices in their tasks in the workplace (Almeida & Remebida, 2014).

Despite the importance of introducing practices aimed at sustainability in the workplace, these are often not applied, especially speaking of microenterprises - ME. Micro and small busi-

nesses represent the most significant sizes of business throughout the world, employing a large number of individuals and providing goods and services that meet the needs of the population. According to Entrepreneur MPE (2017a) there are many microenterprises active today, being in Brazil 4,175,507.7 (representing 26% of Brazilian companies); RS 346,361.4 (representing 30% of gauchos). Such companies often find shortages of financial resources and qualified personnel to implement sustainable processes or even unaware of how they can implement them in their activities.

Regarding the size of companies, it can be said that microenterprises, along with small ones, are the most representative in the world, which highlights the importance of their role to society (Sebrae, 2017). According to the Ethos Institute (2017, p. 62), "climate change impacts will have a major influence on long-term business development. For this reason, society increasingly needs to gain a thorough understanding of this issue. "

The attention of the business environment with the environment is due to the worldwide concern about the scarcity of natural resources and the negative impacts of the productive system of companies that has been causing damage to the environment (Coral, 2002). Also according to the author, processes, green products and investment in environmental technologies is what will differentiate and keep companies in the market. Due to this, the insertion of sustainable practices in companies can emerge as a way to collaborate with the preservation of the environment by adopting considerably simple daily habits, such as reducing the consumption of raw materials, electricity, water, controlling the emission of pollutants and separating dry from organic waste. As pointed out by Araújo et al. (2014), this is an advantage for both the company that decreases its costs and increases its profit, for consumers and especially for the planet.

According to Caires (2016), as much as sustainable practices result in greater competitive advantage, microenterprises still face financial difficulties and a need for training so that their employees are aware of this importance, as they are the driving force behind operationalization. these practices every day within the company. Whereas today, independent companies of their size and line of business are charged for the dynamic environment in which they operate, where innovation, technology, and process transformations are part of the quality of high value-added products and an environmentally responsible stance. to stay in the market. In this sense, the present study has the problem of answering the following question: How do micro-enterprises in the industrial sector of the central region of Rio Grande do Sul develop their business by relating them to sustainable practices?

Aiming to answer the problem, the research was defined as a general objective: to analyze the sustainable practices used by micro companies located in the central region of the state of Rio Grande do Sul. This research seeks to map the profile of managers and micro companies, in the same way. It is intended to investigate the knowledge of the managers of microenterprises analyzed in relation to sustainable practices, as well as identify the sustainable practices used by microenterprises. From this angle, it is considered that the research is relevant because it investigates emerging themes and of great influence to society, since the preservation of the environment is of collective interest, as it affects all living beings on the planet.

However, through this research, we aim to make sure that the flexibility of micro enterprises can simplify the process of implementing sustainable practices and break this idea that only large companies can be sustainable (Sebrae, 2017). After all, through small attitudes it is also possible to become a sustainable company and ensure its survival in the market. The article is structured as follows: firstly, the guiding aspects about sustainability will be presented, followed by considerations regarding sustainable practices. Following, the methodology is presented; later the research results and finally, the conclusion of this work.

2. SUSTAINABILITY

From the mid-nineteenth century, concern began about the environmental impacts generated by man at the planetary level. In 1948, at the Club of Rome meeting, where it was found that natural resources were in bankruptcy, a study called Limits of Growth was requested, where it was found that environmental transformations occurred due to increasing population growth and overexploitation. and unaware of natural resources, and that if it had no population, economic and ecological balance, it would all be over (Tagore, 2009a).

Due to this concern, the United Nations - UN organized the International Conference on the Human Environment, in Stockholm, Sweden, in 1972, in order to debate and seek solutions to the environmental problem, where it was determined to the world that It is a fundamental right of present and future generations to exist in a healthy and preserved environment (Ministry of the Environment, 2017a; Tagore, 2009b). A few years later, in 1987, the first CMMAD already had a new concept of sustainable development where "one that meets the needs of the present without compromising future generations to meet their own needs" (CMMAD, 1988, p. 46).

The second CMMAD, which took place in 1992 in Rio de Janeiro-Brazil, became known as Rio-92, Eco-92 or Earth Summit that grouped 179 countries (Cordani; Marcovitch & Salati, 1997). At this conference, countries debated the concept of sustainable development and outlined the practices that should be implemented to reduce or eliminate the negative impacts on the planet, such as the goal of caring for the environment. Resulting from Rio-92, Agenda 21 was created on June 14, 1992, which is a document signed by 179 countries (Secretariat of the Environment and Water Resources, 2017). It can be described as a resource for planning aid for the building of environmentally sustainable societies in various parts of the world (Ministry of the Environment, 2017b). Since the World Conferences on Environment and Development, sustainable development has been consolidated, in line with the environmental, social and economic dimensions and its principles have been encompassed by several areas that have developed new spheres for knowledge, such as the area of corporate sustainability (Souza & Ribeiro, 2013).

In this sense, sustainability is an aspect that has been much debated in society, which shows that the preservation of resources has been emerging over time. Sustainability can be associated with the ability of humans to interact with the planet without harming natural resources for future generations, making conscious use of these resources for the production and profit making and also for the preservation of the planet. (Francischetti, Camargo & Santos, 2014).

It can be seen that companies that adopt sustainable practices, in addition to preserving the environment, gain competitive advantage because they gain conscious consumers who opt for those companies that show attention to environmental preservation (Araújo et al., 2014). Increasingly demanding consumers are demanding a sustainable attitude from companies, thus preserving the environment has become a market opportunity that brings multiple advantages to companies that can lower costs, increase profit and even give a company image. positive for its consumers (Sebrae, 2017).

2.1 Sustainable Business Practices

The importance of sustainable practices is indispensable and can leverage corporate profitability, reduce costs, raise the level of competitiveness between companies and still benefit humanity with a contribution to health (Razzoto, 2013). Organizations that intend to become sustainable should modify their management structures to gradually decrease their activities that

cause environmental impacts, minimizing their consumption of raw materials, electricity, water, and natural resources in the production of goods and / or services. , thus building an image of sustainable economic and social development (Sebrae, 2017).

Araújo et al. (2014) state that, in order to minimize the environmental crisis, companies - both public and private - have in recent years discussed social practices related to the preservation of the planet. The authors also point out that it has become common among companies to pursue environmental policies, such as Environmental Education Programs - PEA that gain high significance and the training indicated by the International Organization for Standardization - ISO 14,000.

Due to this search for sustainable practices, standards have been created by public institutions, such as ISO 14.001, in which companies should follow parameters regarding environmental management, where pollutant emission levels are controlled, the way waste should be disposed of. discarded, prohibiting the consumption of environmentally toxic substances, the amount of water needed for waste-free use and other criteria is calculated (Molin, 2009). Following the reasoning of Pereira et al. (2013), ISO 14.001 is represented in a PDCA (Plan-Do-Check-Act) cycle, so that all environmental requirements are identified, controlled and monitored, always seeking an improvement. environmental management system and the company's environmental performance. According to Araújo (2005), any company can acquire ISO 14.001, simply: implement, implement and improve an environmental management system; ensures compliance with your environmental policy; demonstrate compliance with stakeholders policy; carry out the self assessment and issue a declaration of compliance with this standard; validate their self-declaration through independent bodies; certify the environmental management system by an external body. But for any practice, standard, and / or index to be successfully implemented, an effective way to raise awareness among all employees must be developed, taking into account levels of responsibility, skills, literacy, and risk (Martins & Silva, 2014).

Some examples of simple, inexpensive practices that can be implemented in any industry or department in everyday business, regardless of size, and which are a great start for microenterprises are according to (Sebrae, 2017): turn off the light after everyone leaves the room; catch rainwater; preserve springs, streams, rivers, seas and native forest; use self-closing taps for water saving; instead of the plastic cup for water and / or coffee, suggest that everyone take their cup home; have specific refuse bins; use environmentally friendly products for cleaning such as lemon, vinegar and baking soda; print only what is really needed and reuse as draft papers written on one side only; avoid leaving electronic devices in stand by; and use fluorescent or Light Emitting Diode - LED lamps. It is still possible to be inspired by other ideas, as described by Piana and Erdmann (2011, p.80), in the "adoption of practices related to the reduction of waste, the efficient use of resources, the pursuit of continuous improvement and the addition of value. to the production steps."

2.2 Microenterprises

Micro and small businesses represent the most significant sizes of business throughout the world, employing a large number of individuals and providing goods and services that meet the needs of the population. According to MPE Entrepreneur (2017a) there are many active micro enterprises today, being in Brazil 4,175,507.7 (representing 26% of Brazilian companies); RS 346,361.4 (representing 30% of Rio Grande do Sul population).

In order to classify the size of the companies, the National Development Bank - BNDES (2017) and SEBRAE (2017), which is the most used for size classification in Brazil, uses two crite-

ria, the Gross Operating Revenue (ROB) criterion. and the criterion of the number of employees for trade and industrial services, as shown in Table 02.

Table 02 – Criteria for Business Classification

SIZE	GOR (Gross Operating Revenue)	TRADE (n* Collaborators)	INDUSTRY (n* Collaborators)
Microenterprise	Less than or equal to R$ 360 thousand	Up to 9	Up to 19
Small Business	Greater than R$ 360 thousand and less than or equal to R$ 3.6 million	10 to 19	20 to 99
Medium Company	Higher than R$ 3.6 million and less than or equal to R$ 300 million	50 to 99	100 to 499
Big Company	Greater than R $ 300 million	100 or more	500 or more

Source: Adapted from BNDES (2017) and Sebrae (2017).

According to Table 02, micro companies have GOR less than or equal to R$ 360 thousand fewer employees for both trade (9) and industrial services (19) than other companies, while large companies have GOR over R$ 300 million, more than 100 employees for commerce and more than 500 employees for industrial services. Brazil has the largest biodiversity on the planet, the largest volume of drinking water, clean energy matrix and is the first in the world in sustainable energy technologies, because of this, the country has been attracting the interest of foreign investors, which is a right opportunity. for small businesses to strategically establish their names in the market (Sebrae, 2017).

Thus, the implementation of environmentally sustainable practices in the productive activities of microenterprises can create a new business area in Brazil, when the emergence of a new style of consumption, ecobusiness (IBGE, 2003). According to Dias (2013, p.8), "the involvement of SMEs, with practices associated with sustainable development, is fundamental for market survival in the medium term, as there is a strong tendency to increase the demand for sustainability."

Some authors (Srour, 2011; Vellani & Ribeiro, 2009) highlight as a survival strategy for SMEs in a market with increasingly demanding consumers by sustainable companies, that the implementation of productive strategies oriented by the green economy can bring economic and strategic benefits as well. : decrease in expenses such as water, electricity and raw materials; reuse or sale of secondary material, which will result in increased revenue; and minimization of possible environmental damage that can lead to fines. Increasing the value of the company's image, such as having a *Green Seal*; productivity evolution by discarding polluting or unnecessary steps; and expansion of domestic and foreign markets.

Nevertheless, even with all these gains and the help of possible environmental management tools, such as ISO 14.001, by any type and/or size of company, small businesses still face barriers to the insertion of practices by the company. Lack of examples related to their type of service, but this does not mean that there are no examples, lack of financial resources and lack of qualified employees to execute the processes and systems determined by the standard (Silva, 2014).

3. METHODOLOGY

The study consists of a research of quantitative and qualitative nature, because it was built from a numerical and descriptive survey referring to the information obtained in an industrial sector. To this end, we used an exploratory multiple case study to identify and analyze the sustainable practices that are applied in the microenterprises of the industrial sector of the cen-

tral region of the state of Rio Grande do Sul. In the qualitative research, there is an inseparable link between the objective world and the subjectivity of the subject that cannot be translated into numbers, making the interpretation of phenomena and the attribution of meanings the basis for obtaining the results (Silva & Menezes, 2001). Quantitative research, on the other hand, aims to measure or quantify some phenomenon of a given population, because it translates into numbers everything that can be measured or quantified to be possible to analyze and later reach a conclusion (Duarte, 2017).

Exploratory research is the first contact with the topic to be examined, the elements to be verified and the secondary data. For this research character, it is necessary that the researcher has a flexible, non-formalized posture and an accessibility to absorb information and data from social reality (Vieira, 2001).

Through a multi-case study it becomes possible to observe the evidence of different contexts due to the replication of phenomena (Yin, 2001). If compared to single case studies, the multi case study leads to more relevant and credible data, it is indicated when one wants to analyze a current phenomenon (Yin, 2001). For Casarin & Casarin (2012), field research characterizes data collection directly with informants through questionnaires or interviews.

According to Entrepreneur MPE (2017a) there are many microenterprises active today, being in Brazil 4,175,507.7 (representing 26% of Brazilian companies); RS 346,361.4 (representing 30% of gauchos). For this research, we selected the micro companies that belong to the Metal Centro cluster in the central region of the state of Rio Grande do Sul. Among these, five micro companies were selected according to accessibility. Therefore, it is characterized as a non-probabilistic sample.

A non-probabilistic sample, according to Mattar (1996), is one that depends only on the researcher's judgment to select population elements. In September 2018, structured interviews were conducted with managers of five micro-enterprises in the industrial sector, which are part of the Metal Centro cluster.

The instrument used in the interview was elaborated based on the Ethos Indicators for Sustainable and Responsible Business, as it was the most accessible instrument. The Ethos Institute is a non-governmental organization created in 1998 by entrepreneurs and executives of private companies. It is a self-diagnostic tool to help companies manage the social and environmental impacts of their activities (Compendiums and Sustainability, 2017).

The institute has indicators that help in the management, definition of strategies, policies and processes for organizations that aim to become sustainable and socially responsible. Its focus is on measuring the extent to which sustainability and social responsibility have been embedded in organizations (Ethos Institute, 2017).

This tool consists of a questionnaire for self-diagnosis of management with an online filing system for obtaining reports, later planning and management of goals for further management in CSR / Sustainability (Ethos Indicators, 2017). The questionnaires are organized into four major dimensions, based on the ISO 26,000 Standard, which first unfold into subthemes and then into indicators, totaling 45 indicators. The four major dimensions are: Vision and Strategy dimension; Governance and Management dimension; Social dimension; and Environmental dimension, according to Table 03:

Tabela 03 – Indicadores Ethos

Dimension	Themes	N of Indicators
Vision and Strategy	Vision and Strategy	3
Governance and Management	Organizational Governance; and Practices of Operation and Management	7;
Social	Human rights; Work Practices; Consumer Issues; and Involvement With the Community and its Development	4; 7; 3; 3
Environmental	Environment	11

Source: Adapted from Ethos Indicators (2017).

The environmental dimension that addresses the theme Environment has three subthemes: Climate Change, Management and Monitoring of Impacts on Ecosystem Services and Biodiversity and Impacts Caused by Consumption (Ethos Indicators, 2017). The environmental dimension is the third with the most indicators, behind social and governance and management. Its indicators measure climate change, environmental management systems, pollution prevention, consumption of materials, water and energy, use of biodiversity, restoration of natural habitats, education and awareness, transport impacts, logistics and distribution, and reverse logistics.

According to Ethos Indicators (2017, p. 62) the environmental theme of the environmental dimension can be understood by "Society currently faces many environmental challenges, including the depletion of natural resources, the emission of pollutants, climate change , habitat destruction, species extinction and the collapse of ecosystems as a whole. " The authors also conclude that, besides these, another important problem facing society is the process of degradation resulting from rural and urban human occupation, that is, from anthropization.

In the research, only the environmental dimension was used, due to its influence to measure the companies' level of sustainability, considering the variables that are related to the care with the environment and society. Microenterprise managers need to understand that sustainability is not just a matter of environmental and social aspects, but is related to the financial area, due to the reduction of unnecessary spending and increased profitability that sustainable practices promote when micro entrepreneurs understand this. sustainability will be valued even more (Ethos Institute, 2017).

According to Nunes (2005), an interview provides the interviewer with possibilities to explore explicit and implicit content in the interviewee's speech, being useful as a script to obtain assurance that relevant research topics will be addressed during the interview, making the flexible one.

The interviews were conducted as follows: contact via voice call, was also sent email with the presentation of the work and interview script. Already with the names, phones and emails, was made contact with all companies via email and WhatsApp. The interviews were conducted via email where the interview file was sent to the managers who responded and returned a scanned copy by email.

The collected data were tabulated in the software Sphinx Léxica - v5 which provided tables to assist in the verification and analysis of the data. From the information obtained in the tables it was possible to quantitatively identify the relationship of companies with the Ethos Indicators for Sustainable and Responsible Business. Based on the data, a content analysis was performed contextualizing the reality of microenterprises, with the existing scientific theoretical basis on the subject. A content analysis can be contextualized, according to Bauer and Gaskell (2002), as a technique used to produce objective conclusions from a text to a social context.

4. RESULTS ANALYSIS

The five industrial sector microenterprises located in the central region of the state of Rio Grande do Sul, members of the Cluster Metal Centro, will be treated as companies A, B, C, D and E, in order to maintain privacy. The research had its composition divided into three blocks of information which are: characterization of the micro enterprise profile; characterization of the manager's profile; and characterization of sustainable practices.

4.1 Characterization of Microenterprises and Managers Profile

To characterize the profile of micro enterprises, the year of establishment of micro enterprises, the number of employees, main manufactured products and the market in which they operate were questioned. While for managers, gender, age, education, year of entry into the company and how long they work in the field were asked. For a better demonstration of this information follow Table 04.

Table 04 - Characterization of Microenterprises and Managers Profile

ME	ME CHARACTERIZATION	MANAGER CHARACTERIZATION
A	It was founded in the year 2002, has seven employees, operates in the municipal market and its main products are: railings, gates and automated curtains.	The manager is male; its age range is 35-45 years old; have higher education; joining the micro enterprise in the same year of foundation, ie 2002; and working for 15 years in the area.
B	Founded in 1989, it operates with four employees, operating in the state market and its main products are the manufacture of counterweight and swing gates.	The manager of company B is male; his age is between 45-55 years old; have completed high school; joined his work at the same company in the same year of its founding, in 1989; and has been working in the field for 28 years.
C	Started its activities in 1997, today has two employees, working in the municipal market with the manufacture of railings, windows, gates and gutters.	The manager is male; aged 45-55 years; has a high school education; joined the micro enterprise in the same year of foundation, 1997; and has been working in the business for 20 years.
D	It was founded in 2008, has five employees to work in the domestic market with supply systems and two aircraft models.	The manager is also male; is 35-45 years old; has completed higher education; joined the microenterprise shortly after its founding in 2010; and has been working since then in the business, totaling 7 years.
E	Joined the market in 1992, operates in the state market, with four employees, to manufacture metal frames and modular products.	The manager is male; his age is between 25-35 years old; has a high school education; joined the micro enterprise in 2015; and has been working on it since then, totaling 3 years working in the field.

Source: Research Data (2018)

As can be seen in Table 3, of the five microenterprises presented, microenterprise B was founded in the late 1980s, microenterprises C and E in the 1990s, and microenterprises A and D in the 2000s. employees vary, microenterprise A works with seven employees, microenterprises B and E have four employees each, microenterprise C has two employees, and microenterprise D has five employees. The main products manufactured by micro companies are railings, gates, automated curtains, security railings, counterweight gates, tilters, windows, gutters, supply systems, aircraft (two models: Alto and Tucano R), metal frames and modular products. As for the market, it was found that micro companies A and C operate in the municipal market, micro companies B and E have operations in the state market and micro enterprise D operates in the international market.

Regarding the gender of managers, 100% are male, their ages range from 25 to 55 years; 60% of the managers, belonging to companies B, C and E, and with higher education, 40% of the managers, companies A and D. The period in which each of the five managers joined microenterprises was: microenterprise B in 1989; micro enterprise C in 1997; micro enterprise A in the year 2002; micro enterprise D in the year 2010; and microenterprise E in 2015. Finally, the period in which each manager works in the area: microenterprise A for 15 years; microenterprise B for 28 years; microenterprise C for 20 years; microenterprise D for 7 years; and micro business E for 3 years. In this sense, it is possible to see that in this industrial sector the male gender is predominant, the dates of foundation are very different with a difference of 36 years between the date of foundation of company B and the date of foundation of company E. Of the managers who aged 35-45, the predominant number are those with higher education.

4.2 Characterization of Sustainable Practices in Microenterprises

In the tables shown below, we present a synthesis of microenterprises about the results obtained regarding the characterization of sustainable practices.

In the search to know if the micro companies make inventory of their direct and indirect emissions, it was evidenced in the research that 100% of the micro companies said that they do not do. This can be explained by the fact that micro companies are not required to control their emissions, according to the Brazilian Association of Technical Standards - ABNT (2012), micro and small companies are not subject to mandatory emission restrictions, however, can join voluntary efforts. with the nation. Because they are not subject to these restrictions, they end up not caring for their emissions and not getting involved as much as they should. It is believed that they needed to be complied with these mandatory restrictions with the medium and large companies, so that they have a greater involvement and a reduction of their emissions. Regarding the assessment of risks, impacts and opportunities for their business and considerations on climate change, we can observe the data obtained in Table 05.

Table 05 - The assessment of risks, impacts and business opportunities related to climate change.

RISKS, IMPACTS AND OPPORTUNITIES	FREQ.	%
Yes	1	20.0%
No	4	80.0%
TOTAL	**5**	100%

Source: Research Data (2018)

It can be seen from table 05 that of the five micro enterprises, only 1 of the sample represented by E assesses the risks, impacts and opportunities for their business related to climate change, while 80% of micro enterprises (A, B, C and D) do not evaluate. It is believed that most micro enterprises do not have abundant knowledge about climate change and due to this lack of knowledge, do not assess the risks, impacts and / or opportunities within their climate change business as Franco (2008). About the knowledge related to the impacts of the environmental changes in its sector and in the region of operation, follow information researched in Table 06.

Table 06 - Knowledge regarding the impacts of environmental changes on the sector

KNOWLEDGE	FREQ.	%
Yes	2	40.0%
No	3	60.0%
TOTAL	**5**	**100%**

Source: Research data (2018).

Of the five micro enterprises, 40% of the sample (A and B) claim to be aware of the impacts of environmental change on their sector, while 60% of microenterprises (B, C and D) claim to be unaware of the impacts, according to data presented in Table 06.

In order to provide knowledge regarding the impacts of climate change, Sebrae, together with the Ministry of Science and Technology, launched in 2008 a booklet on Climate Change and Business Opportunities aimed at enhancing business opportunities for micro and small businesses seeking Preservation of natural resources thus enables micro and small businesses to gain greater insight into the impacts of climate change and learn how something negative can serve as an opportunity for their business (Franco, 2008). Table 07 shows the companies' adherence to the orientation given to employees regarding the negative impacts of their activities.

Table 07 - Guidance to your employees regarding negative environmental impacts

GUIDANCE	FREQ.	%
Yes	4	80.0%
No	1	20.0%
TOTAL	**5**	100%

Source: Research Data (2018)

According to Table 07, 80% of managers (A, B, D and E) stated that they advise their employees on negative environmental impacts, while 20% of the sample, represented by company C, the microenterprise manager states that they do not advise employees. . Thus, it is evident that more than half of micro enterprises are aware of guiding their employees regarding the negative impacts of their activities, according to Martins & Silva (2014).

It was evidenced in the research that 100% of the managers of the micro companies affirm that they do not perform any kind of training in environmental education to capacitate the collaborators in relation to the environmental impacts. The survey data corroborate Caires (2016) statement that micro enterprises face financial difficulties to perform sustainable training with employees. Next, Table 08 presents the measures adopted by the micro companies B, D and E.

Table 08 - Corrective Measures Adopted by Microenterprises

CORRECTIVE MEASURES	FREQ.	%
Separation of dry and organic waste	3	60.0%
Material reuse for other activities	3	60.0%
Sewerage installation	1	20.0%
Control the atmospheric emissions	1	20.0%

Source: Research Data (2018)

According to Table 08, 60% of micro enterprises adopt the following corrective measures: separation of dry and organic waste and reuse of materials for other activities are practices performed by micro enterprises (B, D and E); Sewerage installation is a practice performed by the micro-enterprise (D); and the control of atmospheric emissions is an action developed by the micro enterprise (B). It is evident that all are simple practices and can be implemented in the daily life of a micro enterprise, according to Sebrae (2017).

All micro enterprises, that is, 100% of managers say they have no environmental policy and do not mitigate negative impacts. As stated by Silva (2014), micro and small companies face several difficulties to implement an environmental stance, three of which are the most recurrent

difficulties: economic difficulties, which prevent them from acquiring more advanced technologies to adapt and improve their production processes; compliance with environmental legislation; and the greatest of all difficulties, the people.

In addition, 100% of micro enterprises do not apply practices related to monitoring the environmental performance of their value chain. According to Rosa, Ferreira & Possamai (2015) environmental management in micro and small companies seems a bit impossible in the reality of Brazil, but gradually this market has been receptive to practices that preserve the environment, although the number of conscientious entrepreneurs to perform Environmental management systems, not only for the sake of legislation, but also, in order to use natural resources effectively and sustainably, monitoring environmental performance is simple and provides an observation of major environmental and financial opportunities and gains. Table 09 shows the adherence of microenterprises to pollution prevention programs based on 4R's.

Table 09 - 4Rs-based Pollution Prevention Programs (Rethink, Reduce, Reuse and Recycle)

POLLUTION PREVENTION	FREQ.	%
Yes	2	40.0%
No	3	60.0%
TOTAL	**5**	**100%**

Source: Research Data (2018)

According to the data in Table 09, it is observed that 40% of micro enterprises (D and E) use pollution prevention programs; and 60% of micro enterprises (A, B and C) stated that they do not have pollution prevention programs. In sequence, Table 10 shows the programs used by micro companies D and E.)

Table 10 - Pollution prevention programs adopted by microenterprises

PROGRAM. POLLUTION PREVENTION	FREQ.	%
Rethink	1	20.0%
Reduce	2	40.0%
Reuse	2	40.0%
Recycle	2	40.0%

Source: Research Data (2018)

Among the pollution prevention programs adopted by microenterprises, shown in Table 10, it appears that the rethink program is used by microenterprise E, while the reduce, reuse and recycle programs are used by microenterprises D and E. It was evidenced in the research that micro enterprise E is the only one that uses all 4R's, this can be explained by the fact that the manager of this micro enterprise is the youngest in the area, bringing ideas of experiences in other areas. Table 11 shows the adherence of micro enterprises to the indicators for continuous monitoring of waste generation.

Table 11 - Indicators for continuous monitoring of your waste generation

INDICATORS	FREQ.	%
Yes	2	40.0%
No	3	60.0%
TOTAL	**5**	100%

Source: Research Data (2018)

According to the data in Table 11, it is observed that 40% of micro enterprises (B and E) claim to have indicators for continuous monitoring of their waste generation, while 60% of

micro enterprises (A, C and D) claim to have no indicator for this purpose. As for the calculation and inclusion of the value of benefits or negative impacts in their decision-making process, the adherence of microenterprises is shown in Table 12.

Table 12– Value of benefits or negative impacts on the decision making process

BENEFITS OR NEGATIVE IMPACTS	FREQ.	%
Yes	2	40.0%
No	3	60.0%
TOTAL	**5**	**100%**

Source: Research Data (2018)

Table 12 shows that 40% of micro enterprises (A and E) calculate and include the value of benefits and / or negative impacts on their decision making, in contrast, 60% of micro enterprises (B, C and D), claim not to perform this kind of analysis. It is evident from the research that the micro enterprise manager E, being the youngest and least experienced in the field, is the manager who has the greatest concern with environmental issues, along with the micro enterprise manager A. Srour (2011), Vallani & Ribeiro (2009) highlighted that environmental practices bring to a company numerous economic and strategic benefits. Adding to the previous analyzes, Table 13 shows the adherence of micro enterprises to have initiatives to reduce pollutants.

Table 13 - Pollutant Reduction Initiatives

Pollution Reduction	FREQ.	%
Yes	4	80.0%
No	1	20.0%
TOTAL	**5**	100%

Source: Research Data (2018)

Table 13 shows that 80% of micro enterprises (A, B, D and E) stated that they have specific initiatives to reduce pollutants, while 20% of the sample, represented by micro enterprises (C), do not have initiatives to reduce emissions. pollutants. The reduction of pollutants is a simple strategy that is positive in all aspects, being the main aspect for managers the financial one. And Table 14 presents the initiatives used by microenterprises as a way of saving and reducing pollutants.

Table 14 - Initiatives for savings and pollutant reduction

TYPES	FREQ.	%
Materials	3	60.0%
Water	1	20.0%
Electricity	1	20.0%
Dust	1	20.0%

Source: Research Data (2018)

Table 14 shows the types of initiatives undertaken by microenterprises with the objective of saving and reducing pollutants: 60% of microenterprises (A, B, D and E) reduce materials; water saving 20% micro enterprise (E); Electricity saving 20% Microenterprise (E); 20% micro companies (B) perform practices to reduce dust in the workplace. As pointed out by Araújo et al. (2014) pollutant reduction is an advantage for the entire business supply chain. Table 15 shows the adhesion of micro enterprises to reverse flow.

Table 15 - Realization of Reverse Flow

Reverse Flow	FREQ.	%
Yes	1	20.0%
No	4	80.0%
TOTAL	**5**	**100%**

Source: Research Data (2018)

In table 15, it is observed that 20% of the sample, being represented by the micro company B, performs the reverse flow of solid waste, and on the other hand, 80% of the micro companies (A, C, D and E) do not reverse flow. Reverse flow or reverse logistics represents a more complex and modern sustainable practice, even unknown to large companies. However, microenterprise B, being the longest in the market, has knowledge and makes use of this practice.

5. CONCLUSION

Companies are currently seeking technological innovations that promote economic development and also contribute to the reduction of environmental damage. In this sense, the approach proposed in this article to analyze the sustainable practices used by industrial sector microenterprises located in the central region of the state of Rio Grande do Sul, evidenced the use of some basic sustainable practices and the non-use of slightly more complex practices.

In the survey, it was found that some of the managers have knowledge about sustainable practices and seek to apply methods that are within their reach, while other managers have no knowledge or seek information about sustainable practices. All managers in this research are male, their age ranges ranged from 35 to 55 years, three of them have completed high school and two have completed higher education. From these results, it is possible to identify that the younger and less experienced manager is the one that implements the most sustainable practices in their activities.

It was evidenced in the work that the reduction of pollutants, waste commercialization to third companies and guidance to employees regarding environmental impacts, are some of the sustainable practices adhered to by micro companies. On the other hand, the inventory of direct and indirect emissions, training with employees and the definition of policy and monitoring of environmental performance correspond to practices that are not applied in the five micro companies.

In this sense, the implementation of sustainable practices in companies bring several benefits for companies, as well as for the environment and the society where they operate. For this, the manager is responsible for identifying the need for changes in internal and external processes, and From the diagnosed scenario you should establish implementation programs with the work team. . There are numerous studies available on the Internet and social media that can guide managers in managing their microbusinesses efficiently and effectively in order to survive in the market without harming the environment.

Even with a small sample, survey data show that the development of sustainable practices is not a priority in corporate business, and that environmental factors are not part of corporate organizational scope, except in the case of legal norms or governmental requirements.

Given the current market scenario, where companies need to reinvent themselves technologically and that it is necessary to adapt to changes in the external environment, it is suggested that a new research be conducted with the same theme, but with a larger sample, enabling a deepening of the study and thus identifying the reasons that lead microenterprises in the state of Rio Grande do Sul, to have such a low percentage of adherence to effective sustainable practices.

REFERENCES

Almeida, F. (2002). *O Bom Negócio da Sustentabilidade*. Rio de Janeiro: Nova Fronteira.

Almeida, J. & Premebida, A. (2014). Histórico, Relevância e Explorações Ontológicas da Questão Ambiental. *Revista Sociologias***,** Porto Alegre, RS, v. 35, p.14-33.

Araújo, A. A. *et al*. (2014). O Sistema de Gestão Ambiental Como Impulsor da Educação Ambiental: Um Estudo de Caso em Uma Empresa do Polo Industrial de Manaus (PIM) a Partir da Percepção de Seus Colaboradores. *Revista Monografias Ambientais - Remoa*, Santa Maria, RS, v. 13, n. 4, p.3580-3590.

Araújo, G. M. (2005). *Sistema de Gestão Ambiental ISO14001/04.* Rio de Janeiro. Editora Gerenciamento Verde.

Bauer, M. & Gaskell, G. (2002). *Pesquisa qualitativa com texto, imagem e som:* um manual prático. Petrópolis: Editora Vozes.

Banco Nacional de Desenvolvimento Econômico e Social. *Classificação De Porte Dos Clientes.* 2017. Available in: http://www.bndes.gov.br/wps/portal/site/home/financiamento/guia/quem-pode-ser-cliente>. Accessed on: August, 22. 2018.

Casarin, H.de C.S. & Casarin, S. J.(2012) *Pesquisa Científica da teoria à prática*. Curitiba, PR. Intersaberes.

Comissão Mundial sobre Meio Ambiente e Desenvolvimento. (1988). *Nosso futuro comum.* Rio de Janeiro: Fundação Getúlio Vargas.

Compêndio e Sustentabilidade. (2017). *Brasil - Indicadores ETHOS.* Available in: <http://www.institutoatkwhh.org.br/ >. Accesed on: May, 20 2018.

Coral, E. (2002). *Modelos de Planejamento Estratégico para Sustentabilidade Empresarial*. 282 f. Tese de doutorado, Curso de Engenharia de Produção, Universidade Federal de Santa Catarina, Florianópolis, SC. Available in: https://repositorio.ufsc.br/xmlui/handle/123456789/82705

Cordani, U. G.; Marcovitch, J & Salati, E. (1997). Avaliação das ações brasileiras após a Rio-92. Estudos Avançados, [s.l.], v. 11, n. 29, p.399-408,. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/s0103-40141997000100019.

Diário de Santa Maria. *Santa Maria o 4 Maior Potencial de Consumo do Estado***.** Santa Maria, 14 jul. 2016. Available in: <http://diariodesantamaria.clicrbs.com.br/rs >. Accessed on: May, 21 2018.

Dias, R. (2013). Sustentabilidade como condição para que uma empresa permaneça no mercado. *Produção e Consumo Sustentáveis:* Oportunidade e diferencial competitivo a partir do empreendedorismo sustentável, Brasília: SEBRAE, p. 95.

Duarte, V. M. N. (2017). Pesquisa Quantitativa e Qualitativa. *Revista Brasileira de Gestão*. V. 27. pp.628 – 646.

Empresômetrompe. *EmpresômetroMPE:* Confederação do Comércio Nacional de Bens, Serviços e Turismo. 2017. Disponível em: http://empresometro.cnc.org.br/estatisticas>. Accessed on: Apr, 12 2018.

Francischetti, C. E., Camargo, L. S. G & Santos, N. C. (2014). Qualidade de Vida, Sustentabilidade e Educação Financeira. *Revista de Finanças e Contabilidade da Unimep – Reficon* Piracicaba, SP, v. 1, n. 1, p.33-47.

Franco, N. M. (2008). *Mudanças Climáticas e Oportunidades de Negócio Para Pequenas Empresas*. Brasília: Sebrae.

Instituto Brasileiro de Geografia e Estatística. *As Micro e Pequenas Empresas Comerciais e de Serviços no Brasil.* Coordenação de Serviços e Comércio, Rio de Janeiro, 2003. Available in: <http://www.ibge.gov.br/ >. Accessed on: Apr, 28 2018.

Indicadores Ethos. *Indicadores Ethos:* Para Negócios Responsáveis e Sustentáveis. 2017. Available in: < http://www3.ethos.org.br>. Accesed on: May, 13 2018.

Martins, M. R. S & Silva, J. G. F. (2014). O sistema de gestão ambiental baseado na ISO 14000: Importância do instrumento no caminho da sustentabilidade ambiental. *Revista Eletônica em Gestão, Educação e Tecnologia Ambiental - REGET/UFSM***,** Santa Maria, RS, v. 18, n. 4, p.1460-1466.

Mattar, F. (1996). *Pesquisa de marketing*. Ed. Atlas.

Ministério do Meio Ambiente. *Agenda 21.* 2017. Available in: <http://www.mma.gov.br/responsabilidade-socioambiental>. Accessed on: Apr, 25 2018.

Molin, M. (2009). *Diagnóstico Ambiental para a Implementação de um Sistema de Gestão Ambiental.* Estudo de Caso: Gabriella Revestimentos Cerâmicos LTDA. Universidade do Extremo Sul Catarinense - UNESC.

Nunes, M. L. T. (2005). Entrevista como Instrumento de Pesquisa. In: M. M. K. Macedo & L. K. Carrasco (Orgs). *Textos de entrevista:* olhares diversos sobre a interação humana. São Paulo: Casa do Psicólogo.

Pereira, A. C. *et al*. (2013). Percepções de gestores sobre as contribuições do processo de certificação ISO 14001 nas práticas de gestão ambiental. *Revista de Contabilidade e Organizações,* São Paulo, p.73-88.

Piana, J; Erdmann, R. H. (2011). Fatores geradores de competitividade na manufatura: uma relação entre práticas e resultados. Revista de Administração da Universidade Federal de Santa Maria, Santa Maria, v. 4, n. 1, p.73-90.. Available in: <https://periodicos.ufsm.br/reaufsm/article/view/2130>. Accessed on: Aug, 14. 2019.

Romano, A. L. et al. (2011). Investimento em Sustentabilidade Corporativa versus retorno financeiro: Abordagem integrada, VII Congresso Brasileiro de Sistemas - Franca, SP, Brasil, 2011. Available in: < http://www2.facef.br/ocs/index.php/CBS/7CBS>. Accessed on Aug, 10 2019.

Razzoto, E. *Práticas Sustentáveis.* 2013. Available in: <http://www.bandab.com.br/evandro-razzoto/praticas-sustentaveis/>. Accessed on: Apr, 01 2018.

Richardson, R. *et al.* (1989). *Pesquisa social:* métodos e técnicas. São Paulo: Atlas.

Rosa, C., Ferreira, G. L. B. & Possamai, O. (2015). Plano de Gestão Ambiental Baseado em Indicadores de Desempenho Ambiental Aplicado à Microempresas*. XXXV ENEGEP - Encontro Nacional de Engenharia de Produção: P*erspectivas Globais para a Engenharia de Produção, Fortaleza, p.1-16, 13-16.

Santos, E. H & Silva, M. A. (2017). Sustentabilidade Empresarial: Um novo modelo de negócio*. Revista Ciência Contemporânea*, v.2, n.1, p. 75 – 94.

Sebrae. *Critérios de Classificação de Empresas:* MEI - ME - EPP. 2017. Available in: <http://www.sebrae-sc.com.br/leis/default.asp?vcdtexto=4154>. Accessed on: Apr, 25. 2018.

Silva, E. L & Menezes, E. M. (2001). *Metodologia da pesquisa e elaboração de dissertação.* Florianópolis: Laboratório de Ensino à Distância da UFSC.

Silva, V. A. R. (2014). *Desmistificando a Implantação de SGA em MPEs:* Aplicação de ferramentas de Gestão Ambiental em empresas do Projeto Adensamento da Cadeia Produtiva do Petróleo, Gás e Energia no Estado do Maranhão. 87 f. Dissertação (Mestrado em Energia e Ambiente) - Universidade Federal do Maranhão, São Luís. Available in: https://tedebc.ufma.br/jspui/handle/tede/674

Souza, M. T. S & Ribeiro, H. C. M. (2013). Sustentabilidade Ambiental: uma Meta-análise da Produção Brasileira em Periódicos de Administração. *Revista de Administração Contemporânea - RAC,* Rio de Janeiro, v. 17, n. 3, p.368-396.

Srour, R. H. (2011). Por que empresas eticamente orientadas? *Organicom,* São Paulo, v.5, n.8, p. 60-67.

Tagore, V. (2009). O que é Desenvolvimento Sustentável. *Revista Meio Ambiente.*

Vellani, C.;Ribeiro, M. (2009). Sustentabilidade e Contabilidade. *Revista Contemporânea de Contabilidade*, Florianópolis, v.1, ano 6, p.187-206.

Vieira, V. A. (2001). As Tipologias, Variações e Características da Pesquisa de Marketing. *Revista da FAE,* Curitiba, v. 5, n. 1, p.61-70.

Yin, R. K. (2001). *Estudo de caso:* planejamento e método. Translated by Daniel Grassi. 2.ed. Porto Alegre: Bookman.

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1. Definition of research problem	x		x		
2. Development of hypotheses or research questions (empirical studies)	x	x			
3. Development of theoretical propositions (theoretical work)	x	x	x	x	x
4. Theoretical foundation / Literature review	x	x			
5. Definition of methodological procedures	x	x	x		
6. Data collection	x	x			
7. Statistical analysis	x	x	x		
8. Analysis and interpretation of data	x	x	x	x	x
9. Critical revision of the manuscript	x	x	x	x	x
10. Manuscript writing	x	x			
11. Other (please specify)					