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The context of the textile industry and sustainability: concepts, indicators and a parallel in the world

Abstract

Brazil is the 5th largest textile industry and 4th in the clothing segment in the world. However, its share in the global textile market is only 0.3% in terms of turnover, with a low gain in competitive capacity. Considering its importance to the Brazilian economy, this article seeks to analyze the context of the Brazilian textile industry, main concepts and a parallel with the world industry. The main results are: Brazil is a country with full capacity of farming raw materials in less harmful ways and after the pandemic, the sector started to worry more about the environment. New ways of creating the final product are already being used and the indictators show that it is possible to have a final product using less natural resources and without producing huge amounts of waste.

Keywords: textile industry, Brazil, indicators, sustainability

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Andrei de Azambuja Maraschin, Lucas Veiga Avila

Postgraduate Program in Production Engineering - PPGEP, Federal University of Santa Maria - UFSM, Brazil

Correspondence: Lucas Veiga Avila, Postgraduate Program in Production Engineering - PPGEP, Federal University of Santa Maria - UFSM, Brazil, Tel +5555999530575, Email lucas.avil@ufsm.br

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Introduction

In the emergence of the first factories, the idea was that the Earth's resources would be infinite. However, with the increase in consumer demand, factories began to use these resources unrestrictedly to meet this demand, resulting in an enormous and irreversible impact on the environment.[1] Given the global developments that contemporary societies are experiencing, it is inevitable that human behavior and market demands will have more environmental impacts, a matter of concern since the 1960s.[2] However, despite the emergence of the theme in the current discourse, it appears from the literature that sustainability is configured as a polysemy with different interpretations, resulting in a lack of discernment on the subject in some discourses.[3]

In the textile industry, the first industrial revolution started in the 18th century, mainly due to the modernization of manual looms with steam engines.[4] Along with this, the fashion industry has experienced significant development in the last two decades, mainly the consolidation of the fast fashion movement, which emphasizes the rapid acquisition of homogeneous, standardized, and mass-produced products and disposal. However, by encouraging people to wear clothes that are easy to change, fast fashion has disadvantages in terms of environmental and social sustainability.[5] Many companies see these practices as innovative strategies that aim to gain a good position in the market and draw the attention of consumers.[6]

According to the United Nations (UN) Global Compact, it is possible to see in its guide called Guide to Corporate Sustainability: Shaping a sustainable future, five steps that provide information on the topic of corporate sustainability. The first step embraces sustainability as a principle and integrity, respecting the areas of human rights, labor, environment and anti-corruption. The second believes that sustainable development requires strengthening society, going through corporate walls, and worrying about poverty, conflicts, scarcity of resources, etc. in the surrounding communities.

The third step, on the other hand, shows that all company directors and leaders must assume sustainability, adjusting policies and practices, employee incentives, production chains and dissemination of efforts and results. The last two steps directly require Global Compact participants to produce annual progress reports for company stakeholders to responsibly chart the boundaries of efforts to support society and local actions in countries and communities relevant to the model, having responsible businesses in the perspective of understanding the sustainability of each country.

Indicators

Indicators are management tools capable of monitoring and evaluating an organization and its projects. You can track achievement of goals, identify progress, quality improvements, bug fixes, and potential changes. Its two basic functions are: to describe the true state of the company's events and behaviors and to analyze the information based on the previous information.[7] Indicators must be meaningful to the project and, if not aligned to scope, may be expendable and may be used in the future, depending on the level of detail in the project. These indicators allow the definition of comfort, alert and correction ranges to help managers in decision making. According to the authors, the indicators are divided into three categories: planning, monitoring and control and performance or results.[8] Each strategic objective of the project has its own clearly defined performance indicators so that a complete analysis of the project is possible.[9]

The Global Report Initiative presents indicators that show the performance of companies in terms of sustainability, as shown in Table 1.

Table 1 Indicators of performance, according to GRI

Economical	8 indicators	EC1, EC2, EC3, EC4, EC5, EC7, EC8 e EC9.
Environmental	21 indicators	EN1, EN2, EN3, EN5, EN7, EN8, EN9, EN10, EN11, EN12, EN13, EN14, EN15, EN16, EN17, EN18, EN22, EN23, EN26, EN28 e EN30
Human Rights	8 indicators	HR1, HR2, HR3, HR4, HR5, HR6, HR7 e HR8
Labor Practices	12 indicators	LA1, LA2, LA3, LA4, LA6, LA7, LA8, LA10, LA11, LA12, LA13 e LA14
Product	7 indicators	PR1, PR2, PR5, PR6, PR7, PR8 e PR9
Society	8 indicators	SO1, SO2, SO3, SO4, SO5, SO6, SO7 e SO8

Source: Adapted[10]

Paralel with the world

In the world, we have that the textile sector is led by China, when it comes to amounts moved in billions of dollars.[11] China handled 421.150 billion dollars in the textile sector and occupies the first

position in terms of world production, taking into account 50.20% of the world amount. India occupies the second position in both rankings, with 6.90% of world production, with an amount of 67.244 billion dollars handled. In third place, we have the United States, with 5.30% of world production and 53.523 billion dollars handled. Brazil occupies the fifth position in the ranking of production, with 2.40% of world production and the tenth position in the ranking of traded values, with 12,946 billion dollars.[11]

Factories returned to use their installed capacity and the sector is recovering after the pandemic period that affected the world, companies are seeking to reduce waste.[12] Old models of the agro-industrial sector are changing and being updated, something that was focused on production and efficiency is transforming into a model that is more concerned with environmental issues, preserving natural resources and also that is financially acceptable.[13] It was possible to identify that one of the steps that most affect the environment today, dyeing, could undergo changes to prevent the process from harming sustainable issues and with that, the authors brought the use of naturally colored fibers, the use of plants and flowers or even bleaching through sunlight as alternatives, but with the disadvantage of the process taking longer to complete.[14]

New ways of dyeing have been coming up, such as process using plasma or ozone. Using the plasma method, for example, could improve the amount of dye the fabric will absorb and at the same time, it can diminish the amount of chemicals and the amount of water used in the process. Moreover, the ozone process is a better solution for bleaching the fabric having the advantage of not using a big quantity of water and also a lower temperature.[15]

In addition, other factors have also been addressed by researchers, the issue of chemicals that pollute soil and water are brought up.[16] Along with that, some data prove what was brought before and together it also brings some projections. It is confirmed that the surface of the planet is suffering a degradation in productivity, which causes the loss of soil fertility, for example, and with that it is expected that by 2050 there may be a loss of 10% in crop yields and 50% in cereal regions, bringing an even greater challenge if it is necessary to restore biodiversity, species diversification and the quality of water and soil.[17]

Conclusion

It is possible to understand from this study that the countries are worried about the concept of sustainability and how the process of production is being harmful to the environment and may cause irreversible damage. In the beginning of the revolution, the process went through modernization in the textile sector and the mass-production started. It caused many industries to create standardized models, which led to a not so good quality and a big amount of disposal, which by any means, lack of sustainable preoccupations. With that in mind, the slow fashion movement started and solved the problem of lots of disposal in the sector. Also, the five steps from the UN Guide creates an impulse on the topic integrating with the GRI indicators. These indicators are responsible for showing how sustainable a company is, based on six items: Economical, Environmental, Human Rights, Labour Practices, Product and Society, making it possible to track goals and identify the progress in improvements within the sector allowing companies to understand the real impact they are making in the environment.

The textile sector is enourmous and has been affected by the pandemic during this period the world lives. It is also possible to see that it is recovering and at the same time the factories go back to normal, they are more worried about the reduction of waste by searching new ways to produce the raw materials and create the final product making it less harmful to the environment by using innovative processes.

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Conflicts of interest

Author declares that there is no conflict of interest.

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