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Implementing sustainability in the corporate strategy of textile companies: exploring the Portuguese reality

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Masters in Management

Supervisor:

PhD, Isabel Duarte de Almeida, Invited Assistant Professor
ISCTE Business School

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BUSINESS
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Department of Marketing, Strategy and Operations

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Resumo

Na última década, o panorama crítico da sustentabilidade ambiental tem se feito notar cada vez mais e a sociedade tem exigido que as empresas assumam o seu papel na resolução do problema. A integração da sustentabilidade na estratégia corporativa tem progredido significativamente e, atualmente, já é considerada não só um requisito, mas um fator-chave para atingir vantagem competitiva.

Uma das indústrias que mais se destaca pelo seu impacto destrutivo é a têxtil. O progresso é perceptível, mas lento e insuficiente face à dimensão do problema. Por isso, considerando os vários desafios do processo da integração da sustentabilidade, e a relevância do setor têxtil na economia portuguesa, esta investigação tem dois objetivos.

O primeiro, consiste em perceber quais os facilitadores e impulsionadores deste processo, bem como as suas limitações. O segundo, avaliar como as empresas podem beneficiar e prosperar através deste processo, alinhado com a premissa do *Shared Value Principle*.

Para atingir estes objetivos, o formato de *case study* foi adotado, e no final construído um modelo que permite identificar objetivamente fatores de sucesso e limitações da integração da sustentabilidade, a nível estratégico e operacional, bem como a contribuição para a visão e posicionamento de empresas têxteis no contexto Europeu .

Palavras-chave: Integração, Indústria têxtil, Sustentabilidade, Vantagem Competitiva, Estratégia corporativa.

Sistema de classificação JEL: Q56

Abstract

During the past decade, society has become increasingly aware of the dimension of environmental damage done over the years, and therefore demanding that corporations finally assume their part in the solution. The integration of sustainability into corporate strategy has evolved significantly, and nowadays, is seen not only as a requirement but as a key factor to achieving superior competitive advantage.

One industry that has stood out for its destructive and extensive impact is the textile industry. The progress has been noticeable, but slow, and insufficient when compared to the scale of the problem. Therefore, considering the many challenges this integration can have, and the considerable importance of the textile sector in the Portuguese economy, this investigation has two main purposes.

The first consists of understanding the enablers and drivers, as well as the limitations of the implementation of environmental sustainability into corporate strategy and operational structure. Secondly, how companies can benefit and even thrive through this process, aligned with the premise of the Shared Value Principle.

To achieve this investigative purpose, a case study form was adopted, and in the end, a final framework was elaborated, that allows to objectively and pragmatically identify key success factors of this integration, the ongoing limitations, and the contribution it can have in the strategy and positioning of Portuguese textile companies in the European context.

Keywords: Integration, Textile industry, Sustainability, Corporate Strategy, Competitive Advantage, Shared Value Principle.

JEL Classification System: Q56 and O31

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List of Abbreviations

4IR- Fourth Industrial Revolution

ATP- *Associação Têxtil e de Vestuário de Portugal* (Portuguese Textile Association)

IST- Integrative Sustainable Triangle

NGO- Non-governmental Organisation

SV- Shared Value

STV- Sector Têxtil e do Vestuário (Textile sector)

TAF- Textile, Apparel and Fashion

CHAPTER 1: INTRODUCTION

1.1 Context and theme relevance

It might have taken years, but the information that the world as it exists now might not be there soon is finally starting to be truly heard. Society has finally started making a noticeable effort in order to think ahead of the quality of life of the generations to come and carefully think about the environmental impact of its actions on the planet. The profile of the consumer is changing, and the environmental impact of products and services purchased is a key variable in the purchasing decision-making process.

As consumers change, companies are forced to change with them. Corporations are facing their responsibility in the quest for a sustainable world, not only to ensure their own survival but to properly perform their role in society. What in the past has been seen as a secondary objective with the only purpose was to augment the positive image of the firm is now being considered under a more serious tone, integrating the DNA of each company and using this concern as competitive advantage.

As a future manager myself, I am fascinated by how companies can enhance the integration of sustainability into their strategy. While investigating potential industries to consider as the scope of this research, it became evident which one should be the subject, for its atrocious impact: the TAF industry.

The dimensions of this impact are almost too many to mention: the abundant use of water (79 trillion liters per year), the CO₂ emissions that constitute 8-10% of the global total values, the use of toxic chemicals in the dyeing process which contributes to 20% of the global water pollution, the pollution of the oceans with microplastics and the sordid amount of waste generated (around 92 tonnes of textile waste ends in landfills or is incinerated each year) (Niinimäki et al., 2020).

These issues are only magnified with the rise of fast fashion that has been felt over the past decades, by incentivizing fleeting fashion trends allied to the use of cheap materials. The concept of owning garments for life was replaced with the craving to constantly consume more, and consequently, fashion industries make efforts to match their production to that level of demand, being the focus speed and price, and inevitably causing irreversible collateral environmental damage during the process (Niinimäki et al., 2020).

For the scope of this research, the Portuguese context will be considered. The

Portuguese TAF sector's importance has been exponentially rising over the past few decades and is being recognized in a world context as the "leader for high-quality technical textiles, especially performance fabrics and fabrics made from recycled materials" (Ministry of Foreign Affairs of Denmark, 2020). Although the Portuguese sector has already been marked by a growing concern about the environmental impact caused, considering its rapid growth, it is still relevant to establish the correlation of how sustainability is integrated into the process.

1.2 Research Motivation

Even though the theme of sustainability in the textile industry isn't an unfamiliar topic in strategy and business academic research, the advances obtained over the past few decades are still insufficient. The impact of these industries alone is concerning and the percentage of companies implementing these practices, even if substantially higher than in the past, still falls behind what is expected in order to continue reverting to the current paradigm.

The literature review on this topic mainly focused on describing the dimension of the negative environmental impact of the industry or evaluating specific changes made to the supply chain, being the number of papers that take a macro perspective of the issue scarce.

Therefore, the following research gaps were identified: few articles evaluated the sustainable initiatives implemented in the textile sector through a shared value point of view;

Besides this gap, some areas of research haven't been further explored, such as:

- Having a macro pragmatic perspective of the advantages and impact of pursuing sustainability in the corporate strategy, and consequently the main
- Connecting this implementation to consumer behavior and financial balance;
- Using the Portuguese sector as scope;
- Analyzing the role of Industry 4.0 in achieving sustainable goals.

1.3 Research questions

In order to outline the purpose of this investigation, the research questions that the dissertation intends to address are enlisted as follows:

- RQ1 - Could environmental value creation boost growth and innovation in the textile industry and have a positive impact on its supply chain?

- RQ2 - What are the limitations and bottlenecks to a practical implementation in the strategic and operational plan of fashion companies? And the success factors?
- RQ3 - How does the concept of sustainability impact the consumer perception of the brand and the company? What role does it play in the future of the industry?

1.4 Research Objectives

The main intent of this dissertation is to provide an overview of the application of sustainable practices in Portuguese textile companies and related supply chains, identifying the impact these have on several areas of the company and what are the main limitations.

Therefore, the following research objectives were drafted:

1. To identify the various bottlenecks and limitations of implementing sustainability in the corporate strategy of textile companies
2. To investigate whether and how sustainability can be a driver of competitive advantage and innovation.
3. To measure the impact of sustainability awareness on consumers' perception of company policies and products.
4. To develop a thoughtful analysis of the reality of the sustainability paradigm in the Portuguese textile sector, which has led key players in textile companies to gain experience in this area.

1.5. Methodological Approach

To provide an answer to the identified research questions and to attain the corresponding research objectives, the following methodology was followed:

- Secondary data collection through a systematic literature review to collect the insights of previous research on the topics of (1) integration of sustainability into the corporate strategy, (2) the environmental impact of the textile sector, and lastly, (3) the best practices to address the problem, namely through eco-efficient and eco-effective principles, and the role that 4IR technologies can have to leverage the effect of those practices. The technique will be a documental analysis, and consecutively, the content analysis instrument will be used, as well as the instruments B-on and Scopus.

- Sequentially, the collection of primary data will be obtained by a mixed-method approach, and through a sequential exploratory research design, the qualitative data will be collected through in-depth interviews, followed by an online survey to capture the quantitative data. The qualitative direct data will be collected, through in-depth interviews, using the instruments of an interview script (Annex A) and content analysis. The object of the study is textile companies located in continental Portugal that seek to address sustainability in their strategic and operational decisions. The interviews will take place with recognized companies' relevant employees to understand each approach's motivations and restraints. Finally, these interviews will take an inductive form to make space for other insights from the interviewee in case they identify insights that haven't been predicted by the literature review. Successively, the quantitative data will be collected through descriptive surveys using the questionnaire instrument (Annex B) and statistical analysis carried on SPSS. This part of the investigation assesses how these approaches impact the company's perception by its stakeholders.

1.6. Thesis Structure

This dissertation will follow a certain structure to support the line of reasoning intended. In the first chapter, the research questions, research objectives, and planned methodologic approach are presented. Progressively, the second chapter will expose a systematic literature review pursuing three topics considered the most relevant for this dissertation, allowing a complete understanding of the academic research conducted in these areas so far. Furthermore, the methodology will be dissected. Finally, a framework will be presented to address the research aim and be supported by the relevant conceptual maps. the dissertation will end by exposing the answers to the firstly outlined research questions, limitations, and suggestions, as well as the topic relevance and contributions.

CHAPTER 2: LITERATURE REVIEW

Before diving into the data collection and analysis phase, a literature review was carried out to understand and collect insights obtained in the field of sustainability and the textile sector.

Firstly, in section 2.1, the concept of sustainability is analyzed, as well as its evolution in the integration into corporate strategy. Consequently, there will be special attention to the emergence of the concept of the Shared Value Principle and how these changes affect the consumers' perspective of the firms.

Secondly, in section “[2.2.(Un)Sustainability in the textile industry]”, an analysis of the overlook of the textile sector and the entire scope of its impact on the environment was carried out. An analysis of the current state of the Portuguese textile sector and the trends and predictions according to several relevant sector entities was also considered to possess a vaster and more extensive understanding of the scope of the study.

Finally, in the third section “[2.3. Best practices]”, a look is taken into the approaches TAF companies use to implement sustainability, categorizing the efforts into two main concepts: eco-efficiency and eco-effectiveness.

To conduct this literature review, B-on and Scopus databases were used.

2.1. Integration of sustainability in the corporate strategy and consumers' perception and Shared Value Principle

2.1.1. Corporate Sustainability in the Context of Strategic Planning

Capitalism has brought to society a myriad of benefits, such as increasing efficiency, building wealth, creating jobs, and boosting economies (Porter & Kramer, 2011), but its unmeasured growth has caused just as much damage. The rise of the Internet has raised a magnifying glass to the “business scandals, environmental disasters, and the growing attention to malnutrition and starvation around the world, are emphasizing the criticism toward capitalism and the way business is approached.” (Corazza et al., 2017, p. 414).

As business legitimacy has fallen to unprecedented levels (Porter & Kramer, 2011), managers were forced to ponder on how they could address sustainability that not only waives the expense of businesses but also leverages its growth (Engert et al., 2016).

While the first approaches to sustainability were made with a “philanthropic” mindset, pursuing sustainable goals as a secondary objective, nowadays, the commitment to sustainability is being considered on a strategic level and has leverage for competitive advantage (Engert et al., 2016).

2.1.2. Bridging Sustainability to Corporate Strategy: some theoretical approaches

The approach to sustainability in corporate strategy has evolved greatly throughout the years, and it is relevant for this dissertation to assess that evolution as a way to forecast the necessary steps. This consolidation has come a long way over the decades. When the concept of corporate social responsibility first came to light in the 1970s, economists at the time didn't seem to recognize the subject's relevance. Milton Friedman explores in his popular article “The Social Responsibility of Business is to Increase its Profits” (Friedman, 1970, p.1) that an “executive is an employee of the owners of the business. (...) That responsibility is to conduct the business following their desires, which generally will be to make as much money as possible while conforming to the basic rules of the society” in other words, this responsibility falls on individuals and legislators, not on businesses. Corporate social responsibility was seen as an affront to the free-market ideology.

Naturally, this narrative no longer fits in a world that has become increasingly more complex and where businesses are required to address and balance several priorities in order to survive (Tepper, 2020).

One of the first and most popular concepts to contradict this ethos is the Triple Bottom Line theory, first published by John Elkington in 1997. The concept describes a business world with excellence in three main areas: social, environmental, and economic (Loviscek, 2021). It came about because of the bad reputation that companies had acquired.

Even though this approach has been considered obsolete over the years by many scholars, including the author himself, it remains important today to establish the baseline nature of a business's goals.

The theory's original format proved quite ineffective when implemented. Companies are not addressing sustainability as a goal but as punctual contributions, a way to bridge the damage done and restore the brand's image before the consumers. Not only the benefits from these actions are diminutive, but consumers' skepticism has also increased about the true impact they have.

Porter also points the finger at governments that enact laws that emphasize the trade-off between social and financial goals, urging them to heed the principle of common benefit.

The perceived trade-off between the economic development of the company and its societal and environmental goals often meant a disarticulation between research and practice. A new mentality originated by Porter and Kramer emerged as a solution to this problem: the Shared Value Principle (Corazza et al., 2017).

The concept can be defined as “policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates” (Porter & Kramer, 2011, p. 4). The concept has been gaining popularity among scholars, with the original article being quoted approximately 3200 times (Corazza et al., 2017).

The intention of this approach is to have “businesses acting as businesses, not as charitable donors” and have sustainability unlocking their full potential (Porter & Kramer, 2011, p. 4).

In the original research paper, Porter and Kramer recognize three main areas of implementation for Shared Value: the first is by reconceiving products and markets, since the under the light of the SV, new opportunities for innovation arise, as well as it opens new markets to explore. Secondly, by redefining the productivity of the supply chain: inefficiencies in the supply chain tend to be a great waste of resources but also areas where costs can be cut. This area is particularly important in the supply chain of textile companies, considering the atrocious impact they can have on the surrounding environment, as it will be explored ahead. Finally, companies can enable local cluster development by investing in the communities where they insert themselves and consequently collect the benefits once those communities are more developed.

In summary, to ensure their survival, businesses must embrace their new role in society.

2.1.3. Merging Sustainability into Corporate Strategies: Hypes and main hampers

As important as it is for companies to adapt to the new paradigm of sustainability in corporate strategy, it doesn't mean this implementation doesn't pose its own challenges, as it is important to reshape the company with a top-down approach (Porter & Kramer, 2011).

First of all, deciding how to integrate sustainability effectively with the corporate strategy can be incredibly challenging. It requires an analysis of the company's strengths, weaknesses, positioning, and the possibilities of innovation facing the panorama of the market to ensure this

approach secures the continuity of the value creation for the consumer. Contrary to the approach of Corporate Social Responsibility, which requires only isolated philanthropic acts, this approach often means rephrasing the company's vision, culture, governance, management, and performance systems. Only through these changes can the company truly embrace its role in making a change.

Following the planning phase's obstacles, the consequent restructure of many processes is required and a monitoring structure that allows the constant iteration and refinement of the learning curve. The size of these changes can be daunting as they imply a certain level of uncertainty and increasing complexity on top of the company's other posing challenges (Engert et al., 2016).

Moreover, even if the modern approaches allow companies to pursue both economic and environmental goals, some authors still consider it naive to ignore the frequent incompatibilities of conciliating environmental and economic goals.

On the other hand, as it has been discussed, the commitment to sustainability can also bring several advantages. Besides the main motivation of competitive advantage, there is often a reduction in costs, opportunities for innovation and tackling new markets, risk management; corporate reputation; and quality management (Engert et al., 2016).

2.1.4. Corporate Sustainability Strategy success factors

The concept of sustainability has been around for decades, and many have implemented it with no results or benefits. Therefore it is important to identify the main success factors behind the implementation of the process.

As it has been explored before, the main success factor relies on the commitment to adopting sustainability as a crucial part of the strategy and throughout the whole company, which can be enabled under the light of the shared value principle. Only by perceiving sustainability as a mean to collect benefits and generate profits can the concept be properly applied in a sustainable way for the business, as opposed to the approaches of corporate social responsibility used in the past.

When this main condition is fulfilled, there are other factors that can facilitate the implementation of this frame of thought, such as the proper support of governments, the continuous research of alternatives, the advancement of auxiliary technologies, the development of human capital, and, the baseline for everything else, the revamp of business models.

The beauty of this approach is that it can be applied in any industry since all industries have room for improvement in environmental sustainability, and all seek innovation as a way to achieve competitive advantage. However, in researching this topic, one stood out because of its negative impact on the environment and will therefore be the object of this research.

2.2. (Un)Sustainability in the textile industry

2.2.1. The root of the problem

The textile, apparel, and fashion industry have grown to be an industry that instigates consumerism on a large scale. The constant incentive placed on fleeting trends and impulse purchases (Niinimäki et al., 2020) has generated an exponential wave of consumerism, followed by industrial efforts to meet it. To sustain profit within the lowered prices, textile companies focused on having the lowest production costs possible, meaning the use of cheap materials, poorer (and even inhumane) working conditions, harmful production lines, and short-lived garments, all of which come with their own environmental implications (Niinimäki et al., 2020).

The importance of the industry to consumers is undeniable. Not only can clothing be considered a basic need, just like food or shelter, but it has grown to be an essential form of self-expression (Duarte et al., 2018), inhibiting even more the necessary changes.

Naturally, this refers to the phenomenon of fast fashion, a production pattern that leads to and exacerbates many of the environmental problems the industry faces today. Fast fashion is merely the natural consequence of an expanding growth in consumerism felt in the last decades. By the end of the 20 century, “private consumption had quadruplicated when compared with the levels of the ‘throw-away society in the 1960's” (Institute, Worldwatch, 2004), and from the '90s to the '00s, foreign direct investment alone had increased about 500% (de Brito et al., 2008). Currently “accounting for more than 37% of total European industrial activity and employing 1.7 million people in Europe only (“Prospering in the Circular Economy: The Case of European Textile & Apparel Manufacturing Industry,” 2017) and it is estimated that each consumer in Europe and USA can consume up to 16kg of clothing per year (Muthu, 2020).

The volatility of demand that characterizes the industry, allied with a commonly used push strategy, results in a worrisome level of overproduction. This means that not only the vast amount of resources consumed and the effect caused by harmful production lines are often in

vain, but it also means the creation of what can be called “Pre-consumer textile waste” (Niinimäki et al., 2020). Furthermore, this means that most articles can’t be sold at full price, generating even more efforts to lower production costs. Finally, the globalization of the supply chain has been exacerbating the problems caused by unmatched demand since distance often means more mistakes in the demand forecast (Niinimäki et al., 2020).

To conclude, the intense competitiveness felt in the industry is another aggravating factor. The rise of fast fashion also meant lower costs of entry, with their lower production costs and emerging ways of delivering faster and more agile delivery, especially considering the online shopping component (Niinimäki et al., 2020)

2.2.2. Assessing the problem

A traditional textile supply chain can have a disastrous impact on the environment in almost every phase of the supply chain. The fronts of the problem are many, which can be divided into three areas.

Firstly, manufacturing creates a concerning amount of toxic emissions and residues. The numbers speak for themselves: 1,7 billion tonnes of CO₂ emissions annually (WWF, 2017), which constitutes around 8-10% of global CO₂ emissions (Niinimäki et al., 2020), and it has The Intergovernmental Panel on Climate Change has accused that the industry alone is responsible for 10% of global greenhouse gas emissions (Niinimäki et al., 2020). Additionally, the dislocation of manufacturing facilities, a practice that has been adopted by many multinational companies, has naturally contributed to the harmful emissions caused by extra transportation. Traditionally, garments were transported by cargo boats, but over the last decade, with the surge of online shipping, transportation by air cargo, which is extremely noxious, has been an increasingly adopted practice (Niinimäki et al., 2020).

Secondly, the intense use and consequent pollution of water are undeniable. Textile manufacturing processes can consume amounts of water, responsible for 79 trillion liters per year. The World Bank stated “ that the textile industry is responsible for about 20% of all water pollution in the world.” (Periyasamy et al., 2017). Concentrating on ocean pollution alone, the sector can be responsible for around “35% (190,000 tonnes per year) of oceanic primary microplastic pollution (Niinimäki et al., 2020).

Finally, driven by the mentioned issue of the unmatched demand and overall careless production lines designed to answer, the industry is estimated to produce around 2.1 billion

tonnes of waste annually (WWF, 2017). The dilemma of unsold stock is heavily felt by textile companies everywhere; H&M stated that as of 2016, it held \$4.3 billion worth of unsold inventory in warehouses, most of which were reportedly incinerated before being even used.

These alarming effects become even more concerning when considering the growth of textile consumption. It is imperative that a change in the path occurs to sustain this growth without compromising the next generations to come.

2.2.3. Changing the panorama

The fact that the Fashion industry is extremely consumer-focused and therefore vastly exposed to public scrutiny pressures fashion brands to face their footprint and embrace the importance of their role in building a brighter future (Macchion et al., 2017).

The compass is changing, and as researchers broaden the topic of sustainability in management and scientists find more sustainable alternatives to deleterious practices, the transition becomes simpler. Practices such as design innovation with R's principle, circular fashion, cradle-to-cradle design, green sourcing, eco-friendly processing, green operations, and waste minimization, to name a few, make room for truthful change, and set examples that motivate companies to seek more (Islam et al., 2020). The change is clearly the future of the textile industry, and there are several ways to achieve it and even use it as leverage for competitive advantage.

2.2.3.1 Consumption Behavior in the Textile industry

The perspective of the consumer, when faced with corporate changes, poses one of the most important variables and drivers of the decision-making processes for textile companies due to the unique characteristics of their demand, as explored above.

The denouncements of scandalous social and environmental incidents caused by textile companies (with NGOs playing an important part), especially with the decentralization to the Far East, meant that consumers became more sensitive to how the products they purchased are manufactured and the values of their beloved fashion brands became an important variable in the purchasing decision (Grappi et al., 2017). The concern for how their purchasing decisions impact the world is expanding beyond ethical consumers and is becoming a normalized concept. Ignoring these externalities, not only can mean losing a competitive advantage to more

sustainable competitors, but the consumers have been commonly applying more drastic solutions to react to companies' behaviors, such as boycotts (and consequently purchasing and advertising purchases from sustainable companies).

It became evident that companies need to react to these externalities, and many companies are investing in efforts to demonstrate how they are making ethically conscious decisions. Others, resort to shortcuts and try to persuade a consumer with low visibility, of the same effect, through greenwashing mechanisms. Furthermore, the effect of brands issuing public apologies when faced with unethical accusations can be very powerful from the consumer's perspective. In other words, companies recognize the power that appearing to be “green” has to its consumers, and they are committed to investing in ways to achieve it, even though some prefer long-term, “real” efforts, while others settle for short-term ways to conceal the truth, by ignoring the pursuit of sustainability as the future, and considering it a fleeting trend.

On the other end, consumers also tend to find excuses to “forgive” or “ignore” their beloved fast fashion brands. The main motivator behind this behavior is the difference in price since ethical supply chains and ethically sourced materials mean higher manufacturing costs (Franco, 2017). It remains a challenge to justify the added value of sustainable products when there is an easy and dangerously convenient alternative to fast fashion when considering middle-class consumers (Franco, 2017). Moreover, the fact that high-priced brands were the first to mention the concern with sustainability fed an image of sustainability as an elitist cause that the average consumer cannot attain (Puspita & Chae, 2021).

To tackle these bottlenecks, companies that are concerned with sustainability are applying different approaches to reach the ethical consumer segment and simultaneously “educate” the average consumer. The baseline approach seems to be the emotional call-to-action campaigns that are common in sustainability campaigns. Other companies take the extra step and invest in increasing the transparency and traceability of the supply chain.

For example, the brand “Everlane has a “radical transparency” policy where they disclose all of their supply chain information to their consumers” (Puspita & Chae, 2021, p. 137).

The emergence of new communication channels such as viral marketing and influencers has played a crucial part in the awareness process (Puspita & Chae, 2021). Circular fashion initiatives have also been a popular approach adopted by consumers that many clothing brands are attempting to integrate into their daily flow. Similarly, other brands also promote the idea of long-lasting garments. In the case of Patagonia, a customer service reparation section was even introduced (Puspita & Chae, 2021).

All in all, brands that don't make an effort to address the consumers' sustainability concerns while simultaneously educating the remaining consumers about the importance of their decisions will fall behind their competition.

2.2.3.2. The textile industry: Hypes and challenges to integrating sustainability into corporate strategies

The industry still has a long way to walk to correct the damage it has done, and companies still perceive many obstacles to changing the paradigm. Many see financial investment as the main hinder. Others say the results are only noticeable in the long term, as many consumers still haven't shifted their mindset.

The truth is there has been a substantial amount of research that enables companies to have options when planning the step to take next. The sub-chapter summarizes the best practices that can be taken to address the problem, as well as their nature and evolution.

2.2.4. The Portuguese context

Considering the scope of this research the Portuguese textile industry, it is relevant for this dissertation to evaluate the characteristics of the market and positioning in an international context, as well as its pre-disposition to pursue environmental goals.

The textile and clothing industry occupies a place of extreme relevance in the Portuguese economy. The role the market is occupying internationally is followed by a necessary need to innovate and keep up with the many market trends, with sustainability being no exception. To achieve this, reports from several regulatory entities were analyzed. Of the many investigated, the most important for this research was the “*Diretório Para a Ecoeficiência E a Competitividade No STV*” (2017) carried out by ATP.

The report highlighted the positive panorama of the Portuguese textile sector towards sustainability, with 62% of textile companies having integrated eco-efficiency measures into their corporate strategy. In a different report issued by the same entity, it is stated. The most relevant eco-efficiency tools highlight eco-efficiency mechanisms, eco-design, environmental accounting, and the importance of eco-efficiency indicators. It is reinforced the importance of companies addressing their environmental efforts in their external communications plan to leverage their growth, as sustainable efforts are only feasible if they allow growth.

Even though the positioning of the Portuguese market in sustainable pursuit is commendable, there are still some obstacles to its implementation. The main challenge identified is related to the lack of financial means to invest in the necessary equipment and obtain the necessary knowledge. There is concerning inaccessibility of knowledge in an ever-changing industry by medium and small companies, which constitute a considerable part of the Portuguese textile tissue. The report highlights the relevance of state support in this area. The second main inhibitor is the “Not recognizing the profits resulting from these changes”. The textile sector in Portugal still is constituted by extremely traditional companies, which contributes to an overall stigma that can hinder innovation and development by having difficulty attracting qualified and young talent, among other factors. Similarly, to the first point, the government can play an important role in mitigating this thinking by increasing access to information, providing financial incentives and support, or legislating according.

Overall, the Portuguese textile market is on the right track and with the right government support, it has everything to succeed as long as makes an effort to catch up with the necessary efforts.

2.3. Best practices

After conducting research regarding the importance of integrating sustainability into the corporate strategy and understanding the alarming panorama of the textile industry, it is relevant for the aim of this dissertation to analyze on a practical level what kind of measures can be adopted in practice. Therefore, the practices and philosophies addressed will be divided into eco-efficiency- which “seeks to reduce the unintended negative consequences of processes of production and consumption” (Braungart et al., 2007, p. 1). - and eco-effectiveness- “the transformation of products and their associated material flows such that they form a supportive relationship with ecological systems and future economic growth.” (Braungart et al., 2007, p. 1).

2.3.1. Eco-efficiency

One of the approaches to achieving a more sustainable supply chain is related to eco-efficiency. The concept of efficiency can be associated with the “zero-emissions” pursuit and Clean production lines initiatives.

A Clean production line aims to harness resources as much as possible while reducing the negative impact that can derive from the production, and there are several areas that can be targeted: water consumption, use of raw materials, energy consumption, rethinking unnecessary transportation or reducing the handling of toxic materials and emissions. This last point alone can create significant environmental change, considering the contamination and generation of waste created in textile companies’ production lines. This philosophy not only allows the reduction of the environmental impact caused by firms but also it can also directly impact the internal costs of the supply chain. When companies implement changes (either through business models or technology) that reduce the use of water, energy, raw materials, or even transportation, for example, they are also contributing to the reduction of their production costs in the long run (Porter & Kramer, 2011; Oliveira Neto et al., 2021).

As beneficial as eco-efficiency can be in the quest for a more sustainable supply chain, these efforts alone will not suffice. As Nike’s CEO stated, “What becomes abundantly clear is efficiencies alone will not suffice – for Nike, or the world. The world needs systemic change at scale. We must innovate.” (WWF, 2017).

2.3.2. Eco-effectiveness

While the concept of eco-efficiency has notorious advantages to both the environment and the economical goals of the company, some authors have identified some limitations in its use in the long run. Unlike the zero-waste approach, this concept not only allows to keep innovating and growing economically, but it is more aligned with the reality of the textile sector. As consumers' preferences are constantly changing, this approach allows companies to keep providing their consumers with innovative, trendy products, while addressing the environmental concerns of the modern consumer (Braungart et al., 2007). Moreover, linear production lines can make companies more vulnerable to risk, since they are more susceptible to variations in resource prices or other supply chain restrictions (Franco, 2017).

In order to further explore the application of eco-effectiveness, there are two concepts that are relevant to explore, both related to the perceived definition of the terms “waste” and “resources”: cradle-to-cradle and circular economy.

The cradle-to-cradle concept allows companies to create “metabolisms that enable materials to maintain their status as resources and accumulate intelligence over time (...) generating a synergistic relationship between ecological and economic systems”(Braungart, 2007, p. 418). The implementation of cradle-to-cradle can include steps such as reducing/eliminating toxic materials, assessing the materials/ ingredients of the product, and even implementing strategies for “Strategies for reinvention view products from the perspective of the services they provide and the needs they fulfill for customers and the broader context of social and ecological systems.” (Braungart, 2007, p. 431).

Another important philosophy extensively adopted in the textile industry is the circular economy. The European Commission has released the estimation that the adoption of circular economy models can generate 600 billion euros in annual economic gains for the EU manufacturing sector alone (Korhonen et al., 2018), and consequently, many countries are promoting this integration by creating laws that promote its adoption (Franco, 2017).

The concept of circular economy intends to contradict linear production lines by promoting a closed-loop system, waste becomes the input for new processes, thus reducing the need for virgin raw materials in new production cycles (Genovese et al., 2017).

The implementation of the concept implies a change of strategy on many fronts: product design, materials selected, technologies used, the alignment of supply chain partners, remanufacturing, or a recovery process at the end of life. Therefore, even with its undeniable benefits, the implementation of the concept comes with many challenges too.

When it comes to the reuse of fabrics nowadays, are blends from different fiber types to attribute to the characteristics of the garment that are relevant to their functionality. When attempting to re-utilize these fabrics, the dilemma often is how to separate them accurately. Consequently, this can mean that designers wishing to implement this philosophy can possess scarce options to fulfill their intended design and functionality for the product since many materials typically used cannot be remanufactured. Lastly, implementing this concept throughout the whole Supply Chain is a heavy task since it is important that either all parts share the same vision or that the interested player has sufficient power to instigate change in the remaining (Franco, 2017).

To conclude, even though the concept of eco-effectiveness is more aligned with the nature of the industry, it's positioning under the light of the Shared Value Principle favors its

subsistence in the long run. However, the implementation comes with its many challenges, and therefore it is fundamental that the employment of the mentioned practices is preceded by the implementation of the correspondent business models (Franco, 2017) and conciliated with eco-efficiency practices.

2.3.3. A new industry concept (Industry 4.0) and its impact on the textile industry

The concern to enhance the efficiency and effectiveness of the supply chain is overgrowing due to the increased interest in sustainability and the notorious economic benefits that derive from the enhancement of productivity. Moreover, the textile industry's unique characteristics related to its demand and consumer preferences caused it to be one of the industries that seek innovation to sustain its survival (Jin & Shin, 2021).

Due to the rise of fast fashion in the 2000s, the demand in textile industries is volatile, in constant change, and extremely hard to predict, creating the problem of unmatched demand and oversupply for many companies employing a push supply chain strategy (Jung & Jin, 2016). Seeking a way to bridge the gap that generates “heavy markdowns and excess inventory that erode profits” (Jin & Shin, 2021, p.4), textile companies have been seeking ways to perfect the accuracy of their demand forecast and integrate concepts such as mass customization. To achieve this, companies are resorting to the emerging technologies of the 4th Industrial Revolution (Jin & Shin, 2021).

The 4th industrial revolution, unlike the others before, is the first one to be evaluated a priori and is defined by technologies that increase the accuracy of assessment and forecasting within the supply chain, such as Cyber-Physical Systems (CPS), the Internet of Things (IoT) and Big Data (Duarte et al., 2018)). The 4IR technologies are mainly used to implement the “smart factory” or “intelligent factory” business model (B. E. Jin & Shin, 2021), which “has the principle of the integration between various stakeholders in a virtual and collaborative environment, the remote control and assessment of industrial activities through virtual copies of the physical environment and the intensive use of ubiquitous technologies in portable devices.” (Duarte et al., 2018).

To conclude, the emergence of Industry 4.0 can have an enormous impact on the textile industry, which should be addressed not only through the adoption of the technologies but also through the redefinition of the business models behind it, a facilitator of eco-effectiveness initiatives and bring to the light new business models designs.

CHAPTER 3: METHODOLOGY

3.1. Research Design and Strategy

The research philosophy used will be Realism. According to Saunders (2009, p. 114), the essence of realism can be defined as “what the senses show us as reality is the truth: that objects have an existence independent of the human mind”.

Moreover, the approach chosen will be inductive, “where theory follows data” (Saunders, 2009, p.126), as discussed in the methodology section since the objective is to “understand the nature of the problem” and elaborate conclusions from here (Saunders, 2009).

Finally, this dissertation will follow a case study structure for the research strategy selected. According to Robson (2002, p. 178), the case study is defined as “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real-life context. The need for a clear research strategy using multiple sources of evidence”. This dissertation is intended to be an embedded case study since specific areas of the company will be the subject of the analysis (Yin, 2017)

3.2. Methodology

As stated previously, the research design chosen for the methodology of this dissertation is a mixed-method approach. After analyzing the literature and elaborating on the chosen topics, which allowed to understand the evolution of base concepts and of the paradigm object of study, the data collection of primary data was conducted. A case study will be used to explore how some assumptions of the literature review are applied in reality, assess if there are any gaps between the theoretical and practical approach, to understand if the stakeholders of the sector are aware of the benefits and what are the main bottlenecks to the further implementation of environmental sustainability in the strategy of the sector.

Firstly, in-depth interviews will take place, in an inductive format, with the main objective of understanding the experience of Portuguese textile companies while handling the change in the paradigm of the industry, namely which and how they are adapting to these changes, as well as their perception of the competitive landscape of the industry.

Secondly, the quantitative data will be collected through descriptive surveys, using the questionnaire as an instrument, and statistical analysis will be made. The main objective is to

assess consumer perception and behavior when faced with the “revolution” of the industry, particularly within some aspects mentioned by interviewees.

It is expected that the insights collected by both groups, the company, and consumer perspective, allow the elaborate a panorama of the success factors and limitations of this integration into the present-day Portuguese textile sector.

3.3. Sample characterization

The choice of the sample is an important process in order to guarantee a relevant outcome of the data collection process. For the interviews, Portuguese textile companies were approached that varied in size and scope of the supply chain. The objective is to address companies with different degrees of implementation of sustainability into their strategy. The interviews will take place with relevant employees of these companies that have an appropriate overview of the company's strategy, vision, and structure of operations. the interviews will take an inductive and informal format.

The first interview was performed with the Head of Innovation of a medium-sized dyeing and finishing company located in Viana de Castelo, Tintex Textiles. Even though the company was founded in 1998, the concern for environmental sustainability was a strong pillar of its genesis, and it occupies a baseline requirement for every operational and strategic decision. The second interviewee is the Head of Sustainability and Circularity of the circular fashion project, Valerius 360, whose main intent is recycling textile waste. Valerius 360 works with several textile companies that intend to reduce their environmental footprint and therefore owns privileged visibility of what Portuguese textile companies are pursuing.

For the survey process, a diverse sample was sought, in order both to provide unbiased conclusions and to possibly establish the correlation between certain actions and specific segments. In the end, the following sample was obtained:

		N	%
Gender	Female	81	70,40%
	Male	33	28,70%
	Other	1	0,90%
Age	18-24 years old	40	34,80%
	25-45 yearls old	48	41,70%
	46+ years old	27	23,50%
College education *	Yes	89	77,40%
	No	26	22,60%
Total		115	100%

Table 3.1: Sociodemographic characterization of the survey's sample

*The segment of respondents with a college education includes all respondents that are currently attending or have finished any form of higher education.

3.4. Data Collection

Firstly, the qualitative direct data was collected, through in-depth interviews, using the instruments of an interview script (Annex A) and content analysis. The interviewees had access to a baseline script beforehand, even though some of the questions and structure were adapted accordingly to the scope of the company object of study, and in order to explore topics that the interviewees mentioned as relevant.

Secondly, the quantitative data was collected through descriptive surveys using the questionnaire instrument, followed by statistical analysis. The survey was conducted online and distributed through several social media channels. A script (Annex B) was elaborated with questions that would allow answering the research questions outlined. A pretest was made to accurate the questionnaire's final version. The outcome of the first stage of the data collection had also some influence on the nature and line of questioning of the survey. The questions are intended to evaluate consumer habits, variables in the purchasing decision, sustainable purchasing and practices habits, as well as the perception of brand reputation.

3.5. Data Analysis

Following the data collection process, a data analysis process is required to translate the

collected information into insights that will be able to provide answers to the initially drawn research questions.

For the data collection of this dissertation, the following steps will be taken: (1) Firstly, each answer will be divided by insight and compared between both interviews to identify trends and disparities that can be caused by the different sizes and scopes of both interviewed companies. (2) Secondly, considering the inductive method adopted for the interviews, the main insights will be identified. Some will correspond to confirmation of the hypothesis pre-identified during the literature review stage, while others are expected to emerge from the output of the interviews. (3) Sequentially, the output of the survey will be analyzed through SPSS in order to identify key insights that allow to establishment of patterns in consumers' perceptions and habits. (4) Furthermore, the correlation of several variables will be studied in order to obtain further insights. (5) After the analysis of both data collection methods, the outputs will be compared to evaluate possible correlations. (6) After all that is analyzed, the final framework will be elaborated.

CHAPTER 4: CASE STUDY

4.1. Case study context and object

As disclosed in the methodology, this dissertation will follow a case study approach whose main object is the change in strategy and operational process required to achieve environmentally sustainable goals. The context of this case study takes place in Europe, especially considering the particularities of the Portuguese market, its representativeness in the economies of several European countries, the increase in competitiveness in a global context, the constant innovation and the concern for ethics and sustainability.

In fact, Europe's efforts to develop sustainability have been noticeable over the past decade, with particular attention paid to the textile industry and several laws and incentives enacted. According to the European Commission's website, the plan is to "contribute to the EU's transition to a carbon-neutral circular economy in which materials are designed to be durable, reusable and efficient from an energy point of view" (EU Strategy for Sustainable Textiles, 2021). Of the many plans that have been published, the most recent Sustainable Textiles Strategy, presented in March 2022, stands out and according to our interviewees will bring many benefits to textile companies currently investing in sustainability. This strategy includes measures related to eco-design, harmonisation of requirements, stricter control of greenwashing and clearer information on textiles and textile waste management.

These new measures also had the main objective of helping textile companies to recover from the Covid crisis in a sustainable way by leveraging competitiveness and promoting innovation, investment, and development (EU Strategy for Sustainable Textiles, 2021). This strategy is being used effectively in Europe, particularly in Italy, where it serves as a survival strategy for more traditional companies that were severely affected by the pandemic.

In the near future, the textile industry, like many others, will be hit by a looming energy crisis, which will be reflected in further rising prices. Although the impact is inevitable, eco-efficient practises will play an important role in the solution and survival of many businesses.

4.2. Case study selection and methodology

Given the research questions and objectives formulated for this dissertation, in the case study chosen, the first research approach relates to the process of implementing sustainable practises

into a company's operations and strategy, and the second to examine the impact of sustainability on consumer habits and brand perceptions. Considering the aim of this dissertation to provide insights that can support textile companies in their journey towards a more exponentially sustainable development, the first part of the case study will have a greater emphasis, while the second part will underpin the conclusions of the first part in order to assess the potential for growth and innovation in this sector, considering the sensitive demand that characterises the industry. Subsequently, the results and conclusions from both approaches will be compared to develop a final framework.

Firstly, relevant members of two companies of the Portuguese textile industry were selected to conduct the interviews. In this context it is recalled that the first is a medium-sized dyeing company, with several active projects with direct environmentally sustainable projects, represented by their Head of Innovation. The second is a fiber-recycling project that belongs to a community of Portuguese textile brands with the aim of sharing and supporting sustainability practices, represented by their Head of Sustainability. The selection of these two interviewees was intended to first understand the limitations of implementing sustainability in-house in medium-sized, and secondly the perspective of a project that works with several Portuguese brands that intend to adopt sustainable practices.

Secondly, the survey was conducted in a sample diversified in age and in gender, in order to depict the complete reality of consumer perception by integrating various perspectives.

4.3 Data collection

4.3.1. In-depth interviews

a. Long-term results-oriented company culture

The first interview, carried out with the Head of Innovation of Tintex Textiles, which will now be referred to as “Respondent A. When questioned about the motivation behind the implementation the answer was straightforward:

“(The motivation came from) a self-assessment of the positioning of the company in the market, and consequently, of the positioning of the Portuguese market in the global context. As we can’t differentiate ourselves on a pricing basis, other differentiating factors were sought and sustainability came forward as the obvious answer”

When asked about what the main challenge of this path of sustainability was, the answer was simple: investments in sustainability (whether it is equipment, or investing in the development of alternative sustainable products and processes) tend to have results on a long-term basis. Even though this can pose a myriad of obstacles, since naturally, it is important to guarantee the financial stability and prosperity of the firm, the company considers its innovation culture and mindset a fundamental attribute to endure this challenge. By valuing the often not immediately visible benefits of innovative projects, expectations can be aligned on the realistic timeline of the return on investment. To achieve this, Tintex has a portfolio of short and long-term projects that enables the company's continued performance.

Similarly, this challenge and consequent solution were corroborated by the second interviewee, Valerius 360, which will be referred to as “Respondent B”, being the main challenges felt by the company the following:

“same of any company seeking innovation: we can’t predict when our actions will have a financial return, often we have restructured processes from square one, and we carry all the risks of not knowing how our efforts will be adopted by our clients and consumers”.

Equivalently, the longing for a more sustainable future is the main motivator throughout it all.

Lastly, the effective application of this framework requires the alignment of the whole company. It is fundamental to constantly reinforce the values of sustainability “in *internal communications and in the organizational culture. We believe that only by using a top-down approach, the message will propagate efficiently.*” states Respondent A.

Similarly, to the first case, also in Valerius all the employees of the firm are continuously trained in this sense. One of the examples provided was a company-wide briefing held to analyze the new European Union legislation *EU Strategy for Sustainable and Circular Textiles* and how it would impact the every corner of the company’s organization.

b. *Important enablers and accelerators of sustainability (4.0 Technologies, state support, and certifications)*

“The development of technologies that enable traceability has been a crucial propellant to embracing sustainability,”

- said Respondent B. The development of 4.0 technologies such as 3D simulators to produce samples, the use of Smartex cameras in looms or live monitoring of the dyeing process to assess when the desired color has been achieved are widely adopted by textile companies,

and the interviewees have no doubt about their value for the future of the industry. Not only do they help demystify the sustainability challenge, but they also bring clear benefits for increasing supply chain efficiency and reducing costs, as the traceability gained often enables waste to be reduced at multiple stages in the supply chain. This is a clear case for the principle of Creating Shared Value, where companies can seek financial and environmental value at the same time.

“Considering the crosswise challenges of the textile supply chain, technological start-ups play a crucial role in a very fast-paced industry(...) it is a very important path that is being traced, and many small and medium companies have yet to absorb that knowledge”- Respondent A.

Even if the benefits are more than clear, companies with a reduced scale can struggle to access the constant advancements that are made in the constantly innovating industry or even have the resources to implement them. In this context, the financial and legislative support of the national and European governments, as well as other mechanism and associations, are designed for that effect. Considering the impact of the advance brought by these technologies not only in terms of sustainability but also in the positioning of the Portuguese and European textile sectors in the global context, the issue goes beyond the companies' domain. Moreover, without this kind of support, many companies can't invest in the development of their own best practices, without the apprehension of harming their financial stability.

Lastly, the third enabler discussed by interviewees is the function played by environmental certifications.

“Environmental certifications have played a crucial role in the progress made in the last decade. The certifications required by our clients, pressure us positively to keep certain standards”- Respondent B. *“Certifications are important to standardizing practices and to ensure everyone is “playing by the same rules (...)We feel that pursuing certain certifications, encouraged us to follow paths that otherwise we wouldn't have followed”-* Respondent A.

Even if both parties recognize their importance, both also agree that the way many certifications are conducted has plenty of room for improvement.

“There are too many certifications that evaluate the same things, which is ineffective and time-consuming. Many certifications have become obsolete, and have requirements that not adapted to the European or the B2B context”- Respondent A.

All in all, it is urgent for the remodel certifications to ensure they keep causing the positive impact they once had.

To conclude, both interviewees were asked to add topics that believed were relevant to the near future of the Portuguese textile sector. Several keywords were identified such as the importance of eco-design, biotechnology, smart factories, hyper-personalization as a means to prevent dead stock, even more mechanisms of traceability, and consumer behavior post-covid. Lastly, Respondent B mentioned the importance that intra-sector collaboration:

“Companies alone can’t do anything. (...) We are involved in a global-scale project that joins manufacturers, clients, and other stakeholders of the industry, in order to discuss the common problems and joint possible solutions to speed up circularity. We are talking about a very serious global problem, that spreads across industries, and therefore it can’t be seen as an individual responsibility. Our company, even with the advancements in circularities and all the good practices it promotes, has an almost insignificant contribution when standing alone, and therefore our goal instead is to contribute to the progress already being made. Therefore, we continuously try to be involved in these kind of projects and contribute within and across industries to be a part of the change.”

c. Consumers’ mindset (comms, open-mindedness, change in mindset)

The evolution of the consumer-facing their environmental responsibilities has been brutal, and naturally, companies have been taking efforts to follow this evolution. However, there is still a long way to go to revert the damage of fast fashion. The interviewed companies have no doubts that being more sustainable is the future of the transition, but they also acknowledge that is still not enough. Therefore, even though none of the companies has the final consumer as their clients, there has been a significant effort to educate the consumer in their external communications. Companies are taking their part in accelerating the cycle of consumer awareness. Companies become more sustainable to follow consumers' demands, and consumers become more sustainable as they are made aware of their impact and as new paths become available (the examples supplied were the rise of “eco-influencers” and the popularization of second-hand apps such as “Vinted”), constituting a chain reaction that must continue to be incentivized, both on the consumers and companies level.

4.3.2. Survey

A big part of the benefit and incentive of companies to pursue environmentally sustainable goals is the added value they gain in the perception of the consumers. Therefore a survey was

conducted in a gender and age-diverse sample, in order to establish a connection between the experience of the companies, and how is this process actually affecting the consumer, positively, and negatively. Furthermore, it intends to answer the initial outline research question: “How does sustainability impact the consumer perception of the brand and the company? What is its role in the future of the industry?”. Questions were designed to assess the following areas: textile consuming habits, the importance of textile consumption, environmental conscience in the purchasing decision-making process, perception of the overall textile panorama, and finally circular economy habits (to assess consumer predisposition to embrace disruptive solutions in the name of sustainability). In the end, the following insights were collected:

- Firstly, it is clear the majority of respondents recognize the importance of being sustainable and express a desire to perform their part for the cause with 97,4% of consumers expressing that they care about the future of the planet. Additionally 86,60% state they try to reflect their environmental concerns in their purchasing habits, however, 63,7% of the latter group still shop at fast fashion chains.
- Consumers seem to be pleased when brands express their sustainability concerns: 75,60% of respondents expressed that when their brands expressed their efforts to be sustainable, there was a positive impact on their purchasing habits towards it and 71,3% expressed making an active effort to prioritize brands with sustainable values.
- When it comes to the transparency of the supply chain, around 70,5% of respondents stated that they appreciate it when brands make an effort to communicate their sustainability efforts in the supply chain, and 53% strongly agreed that the information available is not enough.
- There appear to be no doubts when it comes to proving the longing for sustainability, however, the results reflected by other questions seem to prove that these intentions not only correspond to the practice. When it comes to consumer frequency, 23,50% of the surveyed expressed that they shopped for clothes 1-3 times a month, and 6,1% expressed more than 3 times a month. From this latter group, 100% consider themselves satisfied with their frequency of consumption.
- This disconnection between intention and practice is recognized by 73% of respondents who state their wish to make more sustainable purchases but they can't due to deterrent factors. The staggering factor is price, which was selected by 70,2% of respondents, followed by convenience by 14,3%. Curiously, only 10% of the respondents that

identified price as the main dissuading factor, recognized that there could be benefits from the innovative solutions the textile industry is developing in order to address sustainability, proving that a large portion of consumers don't see value in making sustainable fashion purchases for the price they are paying.

- While 33% of respondents respond they strongly agree that they buy fewer garments of superior quality instead of many of inferior quality, only 14% stated that were completely committed to paying a superior price in order to achieve it.
- Additionally, 33% of respondents agreed that they tend to ignore the information that their clothes are unethically produced for their own convenience, and 35% stated they consider making sustainable purchases an important practice, but that they take time and effort that are not willing to invest. Lastly, a concerning fraction of 44% of respondents are unable to establish a connection between the innovation of the textile sector and the benefits they collect from it.
- The last section of the survey, it evaluated the engagement of consumers in circular economy practices. The aim of this section was not only to evaluate the accession of this practice, but also to assess how much consumers are willing to adopt completely disruptive consuming habits, and what were the main drivers behind their adoption. The results clearly reflect the gain in popularity of the practice, with 57,4% of respondents stating that they have purchased previously owned garments, with 26,5% of those stating they used this option every time it is possible. While consumers agreed that price and the ability to find unique garments are obvious drivers, the main recognized factor behind this choice seems to be its environmental impact, chosen by 34,7% of the surveyed. When asked about the triggers to adopt this habit, the majority (34,7%) indicated the emergence of platforms designed for the effect, that came to bring convenience to the practice. Likewise, the main inhibitor to engaging in this practice, selected by 43,9% of the surveyed seems to be the lack of convenience.
- Lastly, a Principal Components Analysis was conducted to understand the perception consumers have of sustainable brands and consequently what actions they take based on that perception. To assess this relationship, the results of question 25 of the survey script (Annex B), which directly assesses whether consumers have a positive perception of sustainable brands, were correlated with questions 26 and 27 question results, allowing us to assess how reactive consumers are to this perception, i.e. what priority sustainable brands have in respondents' buying habits and how likely they are to boycott brands that exhibit non-environmentally friendly behaviour. The following correlation

was established:

	Average	Std. Deviation	N
25. When my favourite brands announce their sustainable concerns, I feel..	5,2	1,482	115
26. When I become aware that my usual consumption brands are involveld in environmetal scandals, I feel...	4,88	1,44	115
27. Within the brands I usually consume, I prioritize the ones with the most environmental concerns.	5,06	1,32	115
Sustainability Index	5,05	1,41	115

Table 4.1: Sustainability Index

The answers to the selected questions belonged to a range of 1-7, where “7” corresponds to a completely positive response and “1” to a completely negative response. The KMO value obtained for these measurements was 0,662, which translates to a reasonable correlation between the positive perception of sustainable brands and how it reflects brand adherence. The measures obtained from this variable were used to create a synthetic index which was given the name “Sustainability Index” that assesses the overall positive response of consumers to sustainable brands, by actions and by perception, which presented a result of 5,05, confirming that brands efforts towards sustainability actually contribute to their positive reputation and to consumer retention.

4.3.3. Connection between both

There are several correlations that can be made between the results of the qualitative and quantitative data.

The first is, similar to what was stated by the interviewees, the survey confirm that consumers are indeed much better informed about sustainability and that this variable is gaining importance in the purchase decision process.

The second point concerns the efforts brands make to educate and inform consumers. Both interviewees indicated that consumer education plays an important role in the implementation of their external communication plan, even if the end consumer is not a direct customer. Consumers appreciate companies' call to action and becoming more informed about the journey

garments take before they reach the shops and the extent to which this reflects their core values or not.

Thirdly, the biggest constraint for sustainable purchases identified by consumers was price. Both interviewees said they felt the constraint of competing on a price basis while being environmentally sustainable. Even though sustainable clothing will never be (and should never be) as cheap as fast fashion, the burden may be too great for countries where consumers have reduced purchasing power, as is the case of Portugal. For this reason, the interviewees explained that their respective brands mostly operate abroad, where sustainability thinking and purchasing power are more advanced.

Last but not least, one of the interviewees explained that the emergence of enablers and motivators for sustainability (online resale apps and eco-influencers were mentioned as examples) is important for the increase in motivation and accessibility to sustainable purchasing practices. This assumption is confirmed when respondents identified the emergence of circular fashion platforms as the main motivator to engage in the practice.

4.4. Data analysis

4.4.1. Discussion of results

The aim of this research is to provide insights into the reality of implementation of sustainability in the textile sector in the Portuguese market context, including the limitations, the impact on the positioning and vision of the company, and the success factors.

By developing a framework that takes all these considerations into account, the outcome of this dissertation is intended to support the strategic process of companies that want to pursue sustainability as an end goal, and to understand how externalities can facilitate this process. With this goal in mind, the next section analyses the identified success factors as well as the limitations. Finally, the impact that sustainability can have on the positioning of textile companies is examined from the perspective of Creating Shared Value.

4.4.1.1 Success factors

Critical success factors can be defined as the elements necessary for businesses to achieve their mission. In that sense, this dissertation intends to identify the fundamental elements, or success

factors necessary for companies to succeed with the implementation of sustainability. The identified success factors can be divided according to whether they can be implemented internally or whether they depend on an external ecosystem.

a. Internal success factors

Sustainability as a core value and consequent company alignment through organizational culture

The first success factor is related to the vision, values, and culture of the organization. When asked about the motivators and their path to the implementation of sustainability, both interviewees fully agreed that sustainability constituted a baseline value upon which all strategic decisions were based. This holistic approach to sustainability is fundamental. Being sustainable should be considered a pre-existing condition, something that is part of the identity of the company and not a side goal, which is the way to guarantee sustainability is present everywhere. Naturally, the path to being sustainable is long and endless, but considering it a pre-existing condition, it will ensure progress.

Consequently, to ensure the presence of the message, it is crucial that all members of the company are aware of the importance of this value and understand their part in it, and therefore it is important its integration into the organizational culture.

Innovation mindset/ Shared Value Principle perspective

One of the most important insights we gained from the qualitative data collection is the importance of an innovative mindset to persevere through the many challenges of the sustainability integration process. Sustainability means trying new processes and products that involve many risks, complex restructuring and high investments. The key to success is to approach the uncertainty and liabilities with the same mindset as companies seeking to innovate.

This pursuit of innovation is entirely in line with the Shared Value Principle (Porter & Kramer, 2011): The innovation required to create social value (in this case, environmental value) opens doors to new, unexplored markets and grounds for the development of new products and services that promote the strategic growth of the company. Pursuing sustainable goals from a Shared Value perspective has therefore proven to be an effective way to maximise the potential of this investment.

4.0 Industry Technologies

As was clear from the initial literature review, Industry 4.0 technologies play a fundamental role in the journey toward sustainability in any industry. Given the unique characteristics of demand in the textile sector and the amount of waste generated due to the lack of visibility in the process, this role becomes even more important.

During the interviews, it was possible to corroborate these theories and realize the importance, the benefits brought by these advancements and the role they play in facilitating the process.

Contributing to the education of the community

Even though the development of consumer awareness is one of the main factors for the implementation of sustainability by companies, there is still a long way to go before consumers are fully educated. The gap between consumer perceptions and consumer habits revealed by the results of the survey conducted, show that consumers still do not have the knowledge, channels or means to act on their gained perception of environmental impacts. This gap means that there is a segment of consumers that is highly susceptible to greenwashing attempts and other marketing maneuvers that are often carried out by fast fashion brands. Closing this gap is an important step towards a greener paradigm, especially in Portugal, where consumers are not yet as educated in this regard as in Scandinavian markets, for example. In order to reap the benefits of this progress, textile companies also need to do their part, which was recognised as an important practise by both interviewees, by targeting their communication towards the end consumer (even if they are not their target audience) and by promoting supply chain transparency and traceability. Ultimately, brands are not only strengthening their positive reputation in the eyes of consumers, but they are also building a future landscape in which they can thrive.

In fact, both respondents and interviewees agreed that the increasing “*trendiness*” gained by the subject, had an important impact on consumer awareness. The constant presence on social media and the constant appearance of “*eco-influencers*” is important for the cause, and brands can only benefit from integrating these channels into their communication plans.

Secondly, the impact that companies can have on their stakeholders does not go unnoticed. One of the interviewees explained how important pressure from their customers was for some changes that were implemented.

All in all, there is a “positive peer pressure” effect that can be exerted on the whole market to move forward together.

b. External success factors

Governmental subsidies and legislation

During the interviews, the companies interviewed mentioned several times the importance that government support had in achieving their environmental goals. According to the interviewees, supporting innovative projects in the field of sustainability meant a high investment that would only pay off in the long run. The existence of private and public funding meant that the company could make these investments comfortably and reduce the pressure on its financial condition. In addition, Valerius 360 mentioned the importance of European legislation that facilitates and mandates certain practises at the European level, such as supply chain transparency.

The role that government and other conglomerates play in developing sustainability in all markets is undeniable. Governments have the power to facilitate and accelerate the weight that many companies are feeling, and this will have clear environmental benefits.

Certifications

Environmental certifications have played an ambiguous function in the pursuit of sustainability according to the respondents in this study. On the one hand, certifications have been an important driver for the adoption of many practises. Either by raising awareness of unaddressed areas, by enforcing certain service standards that companies would not otherwise enforce, by reinforcing the same requirements for common goals, and by becoming an authority that gains the respect of consumers, producers and other relevant stakeholders, forcing companies to adopt them in order to gain relevance in the marketplace. Certifications have been the driver of much of the progress in the last decade.

Both interviewees agree, however, that the format in which some of these certifications are held is anything but efficient and often detrimental to the companies themselves. The pressures mentioned are many, but it is possible to highlight the irrelevance and obsolescence of some of the requirements, which disregard the current panorama and the European context. Finally, certifications tend to be repetitive and time-consuming.

It is of utmost importance to restructure the key certifications so that they maintain their role as motivators and enablers of sustainability, while being practical for companies to implement.

Intra and inter-industry collaboration

Last but not least, one of the testimonials of Valerius 360 stood out as a significant facilitator:

“Companies alone can’t do anything. (...) We are talking about a very serious global problem, that spreads across industries, and therefore it can’t be seen as an individual responsibility.”

This makes the final success factor for collaboration within and between sectors/industries. As I said, the challenge of sustainability is strenuous, and by collaborating, companies can achieve better and faster solutions, that bring shared benefits and enable the creation of an eco-system in which Portuguese brands continue to thrive and succeed.

In addition to the noble ambition of becoming ever more sustainable, this collaboration also brings an important benefit: the enhancement of the importance and relevance that the Portuguese textile sector has in the European and global context. This brings clear economic benefits that enable the exponential growth of Portuguese companies. Even more, environmental sustainability is not only a challenge for the textile industry. Therefore, the inspiration to solve textile industry problems can also come from completely different sectors. Take the case of eco-efficiency and the application of 4.0 technologies, which are examples of applications that can be easily implemented in most industries.

All in all, the sharing of knowledge and best practices is a fundamental part of sustainability and beneficial to all parties involved.

4.4.1.2. Limitations

One of the main goals of this dissertation was to understand what are the main limitations of the implementation of sustainability in the corporate strategy and in the organizational structure. Only by identifying the pain points, one can evolve, and further investigations can be held to address the challenges. Saying this, the following adversities were identified

a. Financial limitations (consumer and companies)

Logically, "sustainable companies" cannot compete on price basis. Fast fashion prices are possible due to extremely unethical procedures, sloppy processes and poor manufacturing designed for short-lived garments, everything sustainable fashion is against. Although this factor seems unavoidable, consumers do not always have the same view, and many still do not see the added value in paying a higher price for eco-friendly clothing. This practice is linked

to the increasing convenience of fast fashion, greenwashing attempts and the deeply rooted mentality of frequent consumption.

Additionally, even if the perceived value is understood, consumers with limited purchasing power will continue to recognize it as unattainable. Especially for this limitation, the success factors of government support and consumer education are crucial.

On the business side, the changes needed to achieve sustainability are undoubtedly costly, whether through investment in technology or disruptions in production caused by process restructuring. While it is true that this is a constraint that was recognised a long time ago, and therefore there is already support that companies can access to cushion the financial investment, this will continue to be a barrier for smaller businesses in the near future.

b. Unreachable knowledge

The second limitation identified is that it can be very difficult for companies with rather limited resources, which constitutes the majority of companies to access the innovations that are being developed in an ever-changing industry. The weight new technologies and innovations in the implementation of the process has been discussed and therefore this is a worrying factor.

To address this, success factors such as government support and collaboration can be extremely helpful in ensuring the overall progress of Portuguese industry in a global context.

c. Consumer pre-disposition

The last apparent limitation is related to consumer predisposition/preference. It seems ambiguous to note this bottleneck when much of the evidence obtained seems to express the consumer desire for change. This happens because the advancements in consumer consciousness are not homogeneous. The progression of this process can only be set in motion through symbiotic efforts and incentives between companies and consumers.

For this reason, the highlighted success factor is the effort that brands must make to influence the community.

It is important to emphasize that the proposed success factors are only appeasements for each limitation, methods used by companies to get around the obstacles, especially on a short-term basis. Most of the limitations are highly dependent on the economic context of the country under study and are therefore difficult to overcome completely.

4.4.2. Final Framework

To consolidate the framework presented, the following diagram has been elaborated (Figure 4.1). It is possible to note the constraints identified, the success factors proposed and the constraints addressed in each case.

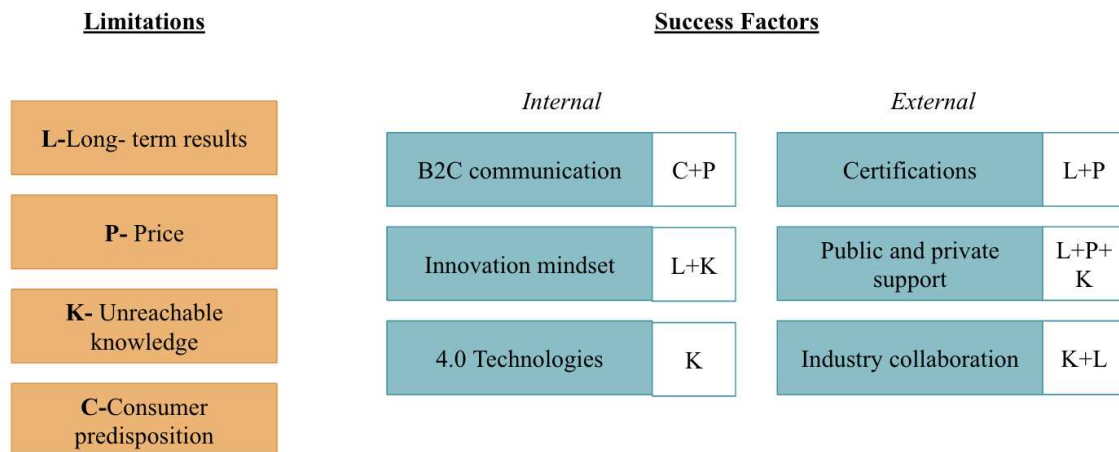


Figure 4.1: Framework concerning the Success Factors and correspondent limitations of the integration of sustainability into the corporate strategy

To support and deepen the framework of success factors and constraints developed earlier, two conceptual maps were created. The first is a SWOT analysis, which aims to summarise and practically apply how the implementation of environmental sustainability in corporate strategy will affect the company's positioning and future potential. Secondly, Porter's Five Forces were used to depict the panorama of the Portuguese textile sector, especially considering the scope in which sustainable companies operate. This aims to provide a better understanding of the ecosystem.

4.4.2.1. SWOT Analysis

The SWOT analysis is a market-sensing tool, being cited in numerous academic journals since 2000 (Everett, 2014). It can be claimed as the most widely used strategy in modern times (Sarsby, 2012). There are many reasons for the popularity of this model, namely its ease of application and communication of complex decisions due to its descriptive nature, its relevance

to multiple levels of the organization and its applicability at the desired level of complexity depending on the defined context and its pertinency as an application of corporate strategy (Sarsby, 2012). As Robert Everett (2014, p. 58) stated, the SWOT “relies on the ability to both explore markets with unbiased curiosity and focus sensing efforts where there are the greatest possibilities of success.”.

The SWOT analysis is divided into two axes: the “in-control” and “out-of-control” - corresponding to the internal and external factors, and the “helpful” and “harmful” factors- corresponding to the positive and negative factors. The combination of these two axes, originates four dimensions: Strengths, Weaknesses, Opportunities, and Threats.

Following these criteria, the above explained analysis was carried out in order to access how the integration of sustainability impacts the competitive position of the textile company that adopts it. Based on the results of this approach, (i) the challenges and obstacles to the implementation of sustainability in the company’s strategy, (ii) their impact on the positioning and future potential of the company, and (iii) the critical paths to be followed accordingly are summarised as follows.

- Strengths
 - The resilience and flexibility that an innovation culture brings will enable companies to weather the volatility of consumer preferences that characterizes the textile industry;
 - An eco-efficient and cost-effective supply chain that enables continued profit maximisation;
 - A technologically advanced company that continues to thrive thanks to increasing efficiency and constant innovation;
 - A solid reputation as an environmentally conscious company that reflects the values of its buyers;
 - A solid differentiator that builds a company prepared for the future of the industry;
- Weaknesses
 - A large investment that only yields a return in the long run;
 - The vulnerability created by the risks of a culture of innovation
 - It is difficult to compete with fast-fashion chains, both in terms of cost and turnover of trends;
 - Adapting to environmentally conscious shopping is slow.

- Opportunities
 - Consumers are becoming increasingly aware of the importance of sustainability in the decision-making process;
 - The Portuguese textile market is gaining reputation and market share in Europe and worldwide, mainly because of its environmental awareness;
 - The exponential development of technological progress, especially in the field of 4.0 technologies;
 - The emergence of new markets and solutions due to the rapid innovation of the industry.
- Threats
 - The diminished purchasing power of a large section of consumers;
 - The predicted impending recession;
 - The energy crisis;
 - The enticing marketing and customer loyalty strategies of the fast-fashion multinationals.

The above points can be summarized in Figure 4.2 below:

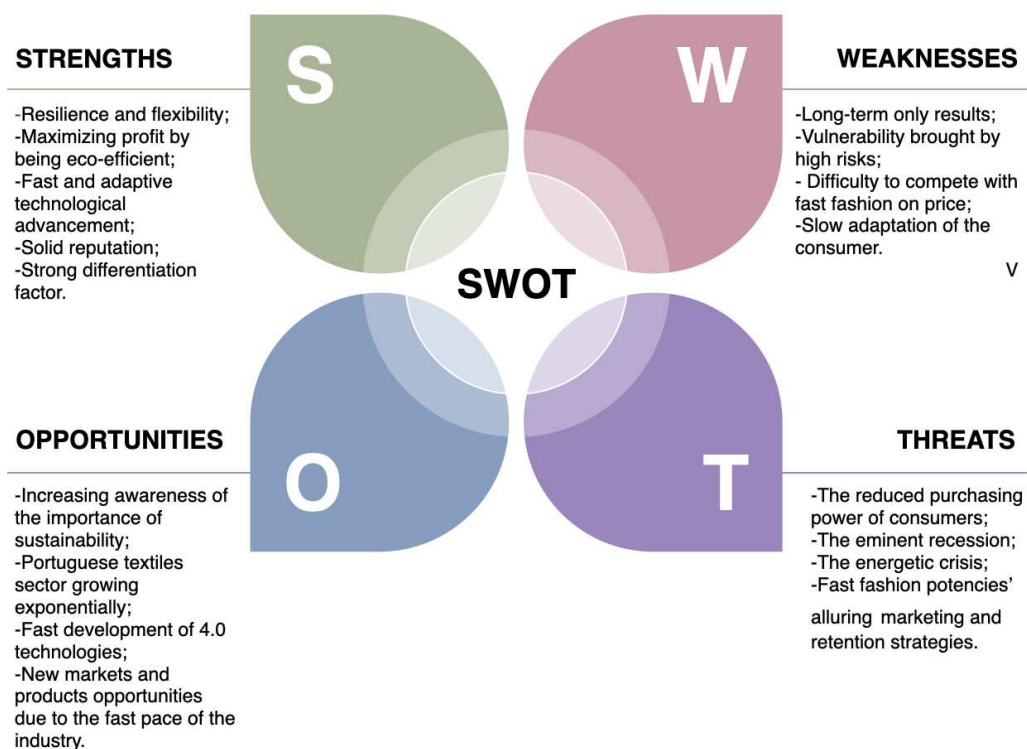


Figure 4.2: SWOT Analysis of Portuguese textile company that integrates sustainability into its strategy and operational structure

4.4.2.2. Five Forces of Porter

Created by Michael E. Porter in 1997, the Five Forces of Porter was developed on the assumption that awareness of the competitive landscape is key when defining the corporate strategy- “The essence of strategy is coping with the competition” (Porter, 1997, p. 2). The model is characterized by five factors that influence the state of competition, being “the collective strength of these forces determines the ultimate profit potential of the industry.” (Porter, 1997, p. 2).

In order to provide a more complete picture of the Portuguese textile sector, with particular attention to the pursuit of environmental sustainability, this model couldn't be more relevant. Based on this approach, on the systematic literature review and on the data analysis, the results are explained as follows:

- *The threat of new entrants*

The threat from new entrants is significantly high. While this would not be the case if this model were applied to the entire textile sector, the same cannot be said when it comes to the Portuguese sustainable context. Considering that these companies do not compete on price but on the quality and sustainability of their products, there is no need to achieve economies of scale to be successful. It can be noted that small online brands, usually based on social media (mostly Instagram), are becoming more popular. Even if the Portuguese panorama of sustainable products is not crowded, competition can present some obstacles, as the target segment of consumers is still niche.

- *The threat of substitutes*

In the case of the textile industry, the threat of substitutes is present within the industry. In this context, the threat of substitutes is high given the strong competition in the industry. Considering that it is a segment of sustainable consumers, it can be difficult to build brand loyalty as long as a brand meets certain requirements that are valued by the buyer.

Considering the definition of substitutes as "subject to trends that improve their value for money relative to the industry's product" (Porter, 1997), second-hand clothing companies can also be considered substitutes. This also contributes to the high status of this force, considering its discrete price range.

- Industry rivalry

Rivalry in the Portuguese sustainable sector is extremely high. There are numerous sustainable brands that can satisfy the needs of the small segment of well-informed sustainable consumers, and switching costs are very low, resulting in a brand fighting for the loyalty of its customers while facing the many adversities that sustainability can bring. As consumers become more informed and concerned about sustainable purchases, the remaining textile brands will also begin to adapt their strategies and communication plans accordingly, which means that the competitive battle is likely to continue.

- Bargaining power of suppliers

The bargaining power of suppliers can be quite low. Even though most sustainable Portuguese brands aim to source locally, there are many suppliers, both at home and abroad, who supply raw materials while complying with the environmental requirements followed by the brands.

However, the fact that many sustainable textile manufacturers develop their own innovative materials and processes - such as Tintex, which has developed its own patented dyeing process that "incorporates compounds of natural origin into substrates to produce a functional, ecological and sustainable technology" (Tintex Portfolio, n.d.) - may be a factor that appropriately increases the bargaining power of these suppliers.

- Bargaining power of Buyers

The bargaining power of the buyers is moderate. Buyers are numerous, have less individual power and are rarely exclusive to one brand. However, the unique and volatile nature of demand, combined with the high threat of substitutes, means that brands must constantly fight to retain customers. In addition, as noted earlier, the sustainability process is highly dependent on customer propensity.

All in all, the complete model is depicted in Figure 4.3:

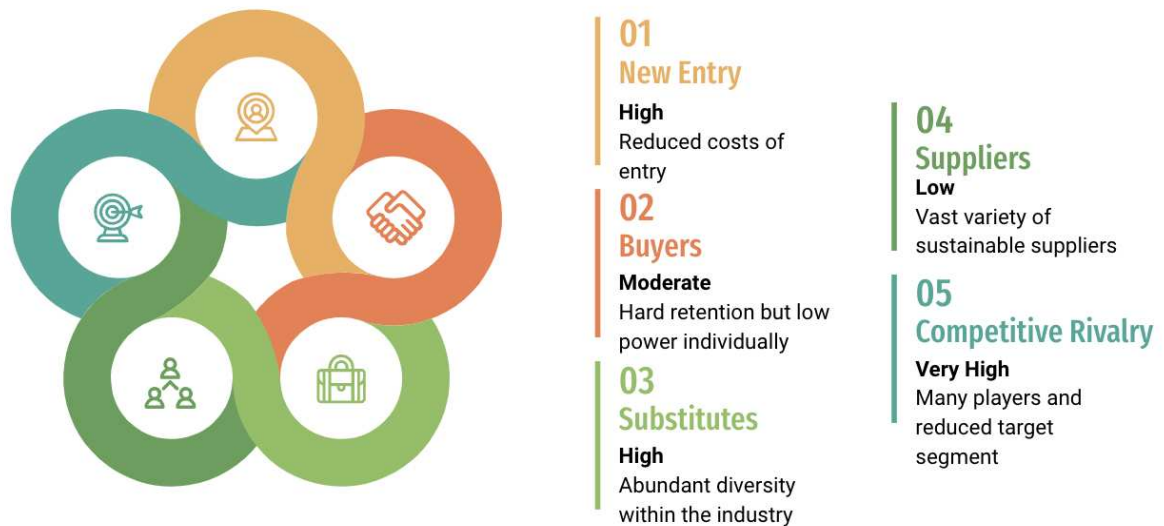


Figure 4.3: Five Forces of Porter analysis of a Portuguese textile company that addresses sustainable consumers

4.4.2.3. Integrative Sustainability Triangle

The Sustainability Triangle Model was originally developed to help companies with the arduous task of incorporating the three dimensions of sustainable development - social, environmental and economic. The original model promotes the simultaneous pursuit of all three dimensions so that companies can develop a strategy that meets the needs of stakeholders in the present and in the future, ensuring steady growth (Freeman & McVea, 2001, Kleine & von Hauff, 2009). An updated model is presented in Figure 4.4:

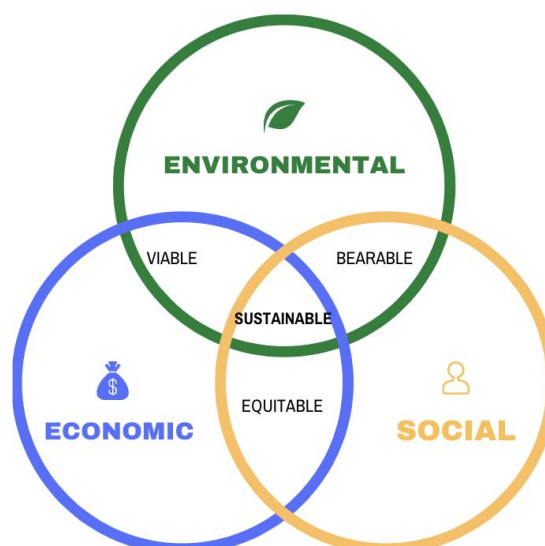


Figure 4.4: Sustainability Triangle (Salameh, 2018)

Even though the main objective is to integrate all pillars at once, it is common to interpret each one in isolation and disregard the possibility that each one can be weighted differently, which could lead to taking into account the interests of different stakeholders with a 'trade-off' perspective. (Kleine & von Hauff, 2009).

As this dissertation intends to look at sustainability through an integrative lens, the model of the Integrative Sustainability Triangle seemed more appropriate. By systematising the sustainability dimensions in a triangle, elements can be continuously classified between two dimensions. These systematisation concepts are based on different, partly overlapping sustainability dimensions and thus represent the complexity of sustainability - the interdependencies and connections between all three dimensions (Kleine & von Hauff, 2009).

An Integrative Sustainability Triangle (IST) model includes discrete fields within the classical sustainability triad (Figure 4.5). The IST is divided into four types of fields. The first focuses on only one dimension (social, economic, and ecological), the second focuses on one dimension but is also influenced to some extent by the others (mainly social, mainly environmental and mainly economic). The third type relates to two dimensions (socio-ecological, socio-economic, ecological-economic), while the fourth type is almost equally influenced by all three dimensions (socio-ecological-economic). This allows for a classification of elements, such as indicators or fields of action, in and between all three dimensions.

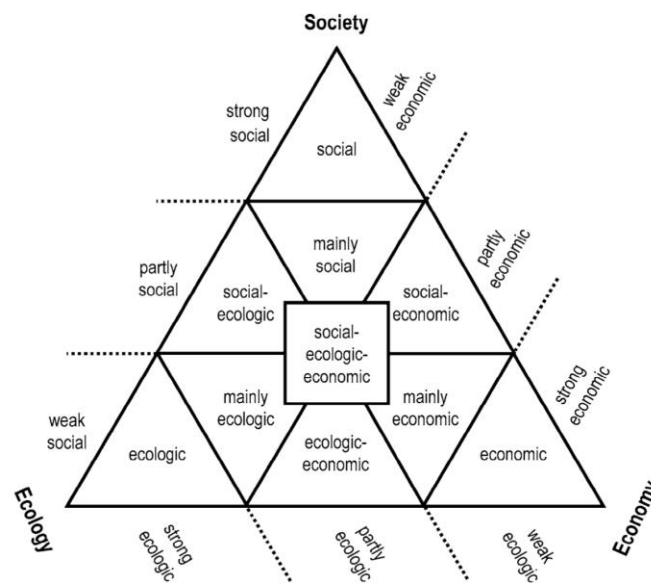


Figure 4.5.: The Integrative Sustainability Triangle (Kleine & von Hauff, 2009)

According to the analysis of (i) the different IST dimensions, and (ii) the interviewed companies experts, the attitude that a textile company should adopt is partly ecologic, corresponding to the "ecologic-economic" attitude, in which the company pursues the

sustainable development principles and aims to ensure a good balance between economic and environmental objectives. According to the authors Kleine & von Hauff (2009), the stakeholders of this segment are called "green customers".

The chosen ecologic-economic dimension is aligned with the election of the share value principle as the preferred sustainability implementation strategy throughout this dissertation. It is also possible to conciliate this theory with the social-economic and the social-ecologic-economic dimensions. Naturally, textile companies can and should also pursue social goals, but considering that this dissertation refers to Portugal, the social impacts of the industry are lower compared to the environmental, and therefore not included in the scope of the framework.

CHAPTER 5 - CONCLUSIONS

5.1 Considerations

The research conducted allowed us to draw important conclusions and insights into the practices of the textile industry in terms of sustainability. Considering the literature review conducted, the practical results have fortunately confirmed most of the theoretical approaches investigated, which is an important consequence for the progress in this study field. In addition, it was also possible to make some observations that are completely independent of this background.

The first relates to the holistic view of several areas of implementation, working simultaneously towards a common goal. The literature is rich when it comes to exploring areas of intervention such as strategy or digitisation of operations, but the findings of this dissertation aim to make the connection between multiple changes implemented simultaneously. Furthermore, the proposed framework also aims to show the connection with the identified constraints. Last but not least, the proposed framework allows us to identify the importance of externalities for the solution and prosperity of the sector.

Secondly, although the integration of sustainability into business strategy is not an unexplored topic in academic research, the results of the study aim to highlight the importance of an integrative approach to sustainability in the company's identity, its vision for the future and in the values it transmits to employees through strong organisational culture, in order to ensure that all decisions are taken in accordance with the principle of environmental sustainability.

Thirdly, the thesis has enabled us to understand the limitations of environmental certifications, especially given its enormous role in promoting the progress of sustainability. It is important that they are considered and managed appropriately in order to maintain their role.

In summary, the two companies studied have shown a comprehensive awareness of the success factors gained from the study, but also of the limitations that need to be overcome.

5.2. Addressing the Research Questions

Considering the originally drafted Research questions, this investigation allowed to provide the following answers:

RQ1 - Could environmental value creation boost growth and innovation in the textile industry and have a positive impact on its supply chain?

The interviews conducted with the Portuguese sustainable textile companies were able to confirm this initial research question. Both companies interviewed cited growth potential as the main trigger for the decision to integrate sustainability into their business strategy. This decision has allowed them to develop and gain prestige alongside the Portuguese industry in a global context, to develop and patent new innovative processes (as in the case of natural dyeing technology in the case of Tintex Textiles) and to enter new markets (as in the case of Valerius 360 and the recycled fibre market). Conversely, the pursuit of innovation has also been identified as a driver for overcoming the challenges of implementing sustainability, creating a kind of synergy between the two concepts.

It is undeniable that sustainability has impacted the prosperity and identity of these two companies. For this reason, the application of the share value principle and an innovation mentality has been identified as a crucial success factor in the effective implementation of sustainability.

RQ2 - What are the limitations and bottlenecks to a practical implementation in the strategic and operational plan of fashion companies? And the success factors?

The answer to this question was drawn with the elaboration of the proposed framework. The constraints identified were:

- A. Financial limitations (consumer and companies);
- B. Unreachable knowledge
- C. Consumer pre-disposition

Even though the proposed success factors can address these limitations, their overtaking will not be immediate, simple, or straightforward, since all of them depend on economical and social factors much bigger than the industry itself. However, it is crucial to clearly identify them in order to direct and continue the efforts to tackle them.

Moreover, there were identified six success factors, three internal and three external that pose as enablers for successful integration of sustainability in the corporate strategy:

Internal success factors

1. Sustainability as a core value and consequent company alignment through organizational culture
2. Innovation mindset/ Shared Value Principle perspective

3. 4.0 Industry Technologies

External factors

4. Contributing to the education of the community
5. Governmental subsidies and legislation
6. Certifications
7. Intra and inter-industry collaboration

RQ3 - How does the concept of sustainability impact the consumer perception of the brand and the company? What role does it play in the future of the industry?

The answer to this question was found in the literature review phase and through the survey conducted.

Based on the literature review conducted, it was possible to understand the enormous importance of consumer perception for the textile industry, as one of its main characteristics is an extremely volatile demand, mainly due to the emergence of fast fashion. In the first attempts to integrate sustainability into corporate objectives, the main motivator was to promote and improve reputation. Companies felt compelled to take on their role in society in order to improve their image in the eyes of society.

The data collected in the survey confirmed this hypothesis. Consumers seemed to welcome and support brands' efforts to be more sustainable. The aim of the survey was to determine consumers' willingness to integrate sustainability into their fashion purchases and to find out what obstacles they perceive in doing so and to what extent these constitute a barrier to this practise. It was found that consumers have fully integrated environmentally conscious behaviour into their daily lives and that they have a strong desire to constantly improve and find solutions. However, the higher price and added inconvenience of buying sustainably is something that consumers still struggle to overcome.

The crucial role that consumers play in environmental protection in the industry is undeniable: only by raising awareness in society can sustainable businesses thrive. On a positive note, consumers are sensitive to the problem and are willing to act. It is now up to government institutions, non-profit organisations and the textile brands themselves to create the necessary awareness, promote innovation and accelerate the process.

5.3. Theme relevance and managerial contributions

The aim of this dissertation is to provide guidance on how to implement sustainability into the corporate strategy of Portuguese textile companies, by summarizing solutions that facilitate the

application of an arduous process to adopt, as well as pragmatically identify the deterrents so they can be taken into consideration and use as the object of further research.

These results might have a scientific impact on an academic, practical and ecological level.

At the academic level, this dissertation aims to contribute to the development of the field of environmental sustainability in management and operations, not only in the context of the textile industry, but across industries. While many studies have been conducted on this topic, there was a gap when it came to looking at development through a shared value perspective. Furthermore, many studies looked at the integration of sustainability into business strategy from a theoretical perspective or using a practical approach, usually focusing on specific factors or enablers. The aim of this dissertation is to illustrate the reality of implementing sustainability from a holistic perspective, considering its impact on strategy, operations, marketing, finance and even human resources.

Following the last point, this dissertation has been designed to have a strong practical impact. By illustrating the application of sustainability with a weighted and pragmatic approach, the findings of this research are intended to provide guidance to managers and other decision-makers of textile companies on how to manage this difficult, long and complex process of adaptation, which is often difficult to align with corporate vision and success.

Last but not least, this dissertation aims to contribute to the noble cause of environmental protection. Only if we keep the discussion open on this issue, which is so important for the future of humanity, is it important to highlight the importance of the role of individuals, companies and governmental organisations.

5.4. Limitations and suggestions

All scientific work is susceptible to limitations and this one is no exception.

The first identified limitation is related to the limited pool of interviewees in the data collection process. Ideally, the study should have been carried out with more collaborators of more diverse backgrounds and positions, representing more diverse companies both in size, the scope of the supply chain, and even the degree of sustainability present in operations.

Secondly, the quantitative data collection was narrow. More scenarios could have been explored in order to assess the response of consumers in different scenarios. The study has failed to establish relevant connections between the variables of purchasing decision-making, brands' perception, perception of the importance of sustainability, and availability to engage in innovative solutions, as it was the example of second-hand purchases and sales.

Finally, one suggestion that can be made for future studies, is to address how these success factors and limitations, as well as innovative solutions, can or cannot be transversal to unrelated industries.

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ANNEXES

Annex A-Interview script

Questões introdutórias

1. Papel do entrevistado na [empresa alvo do estudo];
2. Há quanto tempo está na empresa?
3. Qual é a sua Formação?
4. De que forma é que os valores da sustentabilidade são integrados na cultura organizacional? E nos colaboradores como indivíduos?
5. Como se organizam internamente para endereçar a sustentabilidade?
6. Pode falar mais sobre como integram a sustentabilidade na [empresa]?

A. Implementação: obstáculos e dificuldades

1. Quais foram as principais motivações para integração da sustentabilidade no planeamento estratégico? Houve algum trigger?
2. Qual é o impacto no dia-a-dia das operações de ter estas iniciativas?
3. Como descreveria o processo desta implementação e que tipos de desafios foram apresentados?
4. Adotam algum tipo de indicadores que medem a performance das iniciativas de sustentabilidade? Se sim, pode designá-los?
5. Que fatores ajudam na difícil adoção deste processo pela indústria?

B. Linha de produção

1. Quanto à linha de produção da [empresa], que áreas têm sido alvo de maior avaliação e progresso ao longo dos anos?
2. Quais os maiores desafios de uma linha de produção de uma empresa têxtil na sua perspetiva?
3. Até que ponto as tecnologias da Indústria 4.0 (the Internet of Things (IoT), Cloud Computing, inteligência artificial, Sistemas Ciber-Físicos and Big Data) .podem ser implementadas na sua empresa? E se tem perceção do impacto que essas novas tecnologias poderão ter na sustentabilidade da sua empresa, na vertente ambiental, social e económica?

C.Cadeia de Abastecimento e stakeholders

1. Quais os principais fatores por trás da escolha dos seus fornecedores e distribuidores atuais?

2. Sentem que há pressão por parte dos stakeholders para se tornarem mais sustentáveis? Ou vice-versa, sentem que a pressão parte de vocês?
3. Qual o impacto que essa pressão tem nas decisões estratégicas?
4. Porque é que obter certificações ambientais é importante seria importante para a Valerius?
5. Qual é na sua opinião sobre a importância destas certificações? E quais as limitações?

D.Perspetiva do consumidor

1. Atualmente, como descreveria o vosso consumidor alvo?
2. E que mudanças têm notado no publico alvo na última década face à sua preocupação com sustentabilidade?
3. E no futuro?
4. As alterações de sustentabilidade da [empresa alvo do estudo] permitiram explorar um novo segmento de consumidores?
5. Qual foi a adaptação do plano de comunicação externa da [empresa alvo do estudo] faces às inovações sustentáveis implementadas?

E. Conclusão

1. Para finalizar, como vê o futuro da sustentabilidade na indústria textil e qual o papel que a [empresa] poderá vir a desenvolver nesse panorama?-
2. Agradeço o seu tempo e disponibilidade para esta entrevista, e se gostaria de saber se tem alguma sugestão para acrescentar a este trabalho e desenvolver futuramente.

ANNEX B-Survey Script

Introdução

No âmbito da minha dissertação do mestrado de Gestão no ISCTE, estou a realizar este questionário que tem como objetivo avaliar o comportamento do consumidor face à implementação da sustentabilidade na estratégia corporativa na indústria têxtil. O questionário é completamente anónimo. Considere que “marcas sustentáveis” são todas as marcas que consideram manter a sustentabilidade como uma prioridade, e “compras sustentáveis” correspondem a decisões de compra que têm, de alguma forma, intenções sustentáveis.

Obrigada desde já pela colaboração!

Interesse por moda/ hábitos de consumo

1.Com que frequência compra peças de roupa? Assinale a opção mais adequada:

- ☐ 1-3 vezes por ano
- ☐ 4-6 vezes por ano
- ☐ 1-3 vezes por mês
- ☐ Mais do que 3 vezes por mês

2.Sigo de perto as tendências de cada estação e procuro fazer compras para que tenha peças de roupa de acordo com as mesmas. Assinale de acordo com o seu grau de concordância (considerando 1= ”Discordo completamente e 7 = “Concordo completamente”).

3.Considero o meu vestuário como uma forma de auto-expressão. Assinale de acordo com o seu grau de concordância (considerando 1= ”Discordo completamente e 7 = “Concordo completamente”).

3.1 (Se sim na anterior)) manter essa linha de auto-expressão, requiere fazer compras? Assinale “ Sim” ou “Não” conforme concorda ou não com a afirmação.

4. Compro roupas principalmente em... Selecione até duas opções mais relevantes:

- ☐ Marcas de ultra fast-fashion (Primark, Shein);
- ☐ Marcas de fast-fashion (Zara, Mango);
- ☐ Marcas de luxo;
- ☐ Marcas portuguesas ou marcas de nicho.

5.Estou satisfeito com a minha frequência de consumo. Assinale de acordo com o seu grau de concordância (considerando 1= ”Discordo completamente e 7 = “Concordo completamente”).

6.A alocação e priorização do meu rendimento para compras de roupa, vem logo a seguir a bens de primeira necessidade. Assinale de acordo com o seu grau de concordância (considerando 1= ”Discordo completamente e 7 = “Concordo completamente”).

Preocupação com a sustentabilidade

7. Preocupo-me com o futuro ambiental do planeta. Assinale “ Sim” ou “Não” conforme concorda ou não com a afirmação.

7.1 (Se sim) Tento refletir essa preocupação nas minhas decisões de compra. Assinale “ Sim” ou “Não” conforme concorda ou não com a afirmação.

7.2 (Se não) Não me preocupo com o futuro ambiental do planeta porque... Assinale a opção com quem mais se identifica:

- Não é uma preocupação relevante;
- Não é um problema real/ não acredito;
- Não tenho tempo / paciência.
-

8. Gostava de fazer compras mais sustentáveis, mas existem fatores dissuasores. Assinale a opção com que mais se identifica:

- Não, mesmo quando existem fatores dissuasores, continuo a fazer compras com fins sustentáveis em mente, já que é um fator fundamental para mim.
- Não, não tenho interesse em fazer compras mais sustentáveis do que as faço de momento.
- Sim, se não houvessem fatores dissuasores faria compras mais sustentáveis.

8.1 (Se sim) No seguimento da pergunta anterior, identifico o(s) seguintes fatores como dissuasores?

Assinale a opção mais adequada:

- Preço;
- Conveniência;
- Lealdade a marcas que já consumo;
- Outra

9. Valorizo marcas portuguesas ou marcas que colaborem com produtores portugueses.

Assinale de acordo com o seu grau de concordância (considerando 1= ”Discordo completamente e 7 = “Concordo completamente”).

10. Valorizo quando vejo que as roupas que compro têm algum tipo de certificação ambiental reconhecida. Assinale de acordo com o seu grau de concordância (considerando 1= ”Nunca reparo/não dou importância e 7 = “Concordo completamente”).

Perceção da importância da sustentabilidade na indústria têxtil

Nas seguintes questões Assinale de acordo com o seu grau de concordância (considerando 1= ”Discordo completamente e 7 = “Concordo completamente”):

10. A indústria têxtil causa um grave dano ambiental e social.
11. A indústria têxtil portuguesa tem uma preocupação com a sustentabilidade ambiental.
12. Tenho notado uma mudança de mindset quanto à sustentabilidade vindo das marcas de roupa que me rodeiam.
13. A indústria têxtil portuguesa ocupa um lugar importante em termos de representação no panorama internacional.
14. Sinto que a indústria têxtil é inovadora.
15. Sinto que posso beneficiar das soluções apresentadas pelas empresas têxteis para serem mais sustentáveis.
16. Sinto que o futuro da indústria têxtil (em termos de prosseguir fins necessários) não vai de encontro aos meus interesses como consumidor, e eventualmente pode-me prejudicar.

Variáveis na decisão de compra

Nas seguintes questões Assinale de acordo com o seu grau de concordância (considerando 1 = "Discordo completamente e 7 = "Concordo completamente"):

17. Considero as preocupações sustentáveis das marcas de roupa na decisão de compra.
18. Prefiro comprar menos peças de roupa com materiais com qualidade superior e duradoura, em vez de várias peças de roupa com menos qualidade a menor preço.
19. Não me importo de pagar um preço superior (dentro das minhas possibilidades financeiras) se sei que significa que tenho garantia que a peça de roupa foi produzida com interesses sustentáveis em mente.
- - 1 a 7. Se obtenho conhecimento de que uma das marcas que consumo teve um comportamento antiético, deixo de consumir pois não reflete os meus valores.
 - 1 a 7
20. Considero marcas sustentáveis elitistas ou desenquadradas com a minha classe social, e por isso não faço mais compras sustentáveis.
- 1 a 7
21. Apesar de saber que provavelmente a roupa que obtenho não é feita de forma sustentável, ignoro essa informação porque me é mais conveniente.
- 1 a 7

23. Considero fazer compras sustentáveis uma prática importante mas não tenho tempo nem paciência.

- 1 a 7

24. Considero que tenho meios financeiros para obter roupa sustentável, mas prefiro comprar fast fashion e usar o dinheiro para outras coisas.

- 1 a 7

Percepção de marcas (tendo em conta as minhas marcas de consumo preferidas /que mais consumo)

Nas seguintes questões Assinale de acordo com o seu grau de concordância mais adequado:

25. Quando as minhas marcas favoritas anunciam campanhas/ preocupações sustentáveis, sinto-me...

- 1 a 7 (1- completamente indiferente, 7- priorizo as compras na marca em questão)

26. Quando tenho conhecimento de notícias que falam de escândalos que envolvem as minhas marcas de consumo habitual, sinto-me...

- 1 a 7 (1- completamente indiferente, 7- não volto a comprar (boicote))

27. Dentro das marcas favoritas, dou preferência às que têm preocupações sustentáveis.

- 1 a 7 (1-não é de todo um fator relevante na minha escolha, 7- é o critério mais importante de escolha)

Obtenção de informação/ Rastreabilidade da cadeia de abastecimento

Nas seguintes questões Assinale de acordo com o seu grau de concordância mais adequado:

28. Valorizo quando as marcas que consumo se preocupam com a transparência da sua cadeia de abastecimento (ex: se é feita por produtores nacionais, se é feita de tecidos recicláveis, se é feita a racionalização de água durante a produção).

- 1 a 7 (1- É me completamente indiferente, 7- Procuro proativamente essa informação)

29. Gostava de ter mais informação sobre o impacto ambiental da cadeia de abastecimento têxtil (ex: divulgação de números sobre o gasto de água, matérias primas inutilizadas, desperdício causado).

- 1 a 7 (1= não concordo de todo; 7= concordo completamente)

30. No seguimento da pergunta 29, procuro ativamente informação sobre a cadeia de abastecimento das marcas que consumo (ex: divulgação de números sobre o gasto de água, matérias primas inutilizadas, desperdício causado).

- 1 a 7 (1= Não tenho qualquer interesse nessa informação; 7=é uma informação crucial que procuro ativamente)

Economia circular na moda

31. Compro ou já comprei roupa em 2ª mão. Assinale “ Sim” ou “Não” conforme concorda ou não com a afirmação:

- Sim/ Não

31.1 (Se sim) Compro roupa em segunda mão com a seguinte frequência:

Assinale a opção mais adequada:

- 1 ou 2 vezes
- Anualmente
- Sempre que possível
- Raramente compro roupa em 1º mão

31.2 (Se sim) Gosto de comprar roupa em segunda mão principalmente porque:

Assinale a opção mais adequada:

- É mais escolha mais económica
- Encontro peças únicas
- É uma escolha mais sustentável

31. 3 (Se sim) Comecei a comprar/ vender roupa em segunda mão porque:

Assinale a opção mais adequada:

- Surgiram plataformas que permitiram a prática mais conveniente (ex: Vinted)
- Influencers
- Sempre o fiz
- É mais económico
- Outra (aberta)

31.4 (Se não) Não gosto de comprar/ não compro com mais frequência roupa em segunda mão porque:

Assinale a opção mais adequada:

- Não é conveniente
- Não encontro nada que gosto
- Não gosto da ideia de não ter roupa nova
- Não me deixa expressar da forma que pretendo/ prefiro seguir as tendências

32. Já vendi roupa que já não utilizava. Assinale “ Sim” ou “Não” conforme concorda ou não com a afirmação:

- Sim/ Não

33. Gostava de vender mais roupa que não utilizo, mas não o falo porque:

Assinale a opção mais adequada:

- É difícil lidar com a logística de entrega;
- É difícil atribuir preço/ regatear;
- Não me adiciona assim tanto valor;
- Outra (aberta).

Caracterização socio-demográfica

34. A minha idade é:

- ☐ 18-24 anos
- ☐ 25-40 anos
- ☐ 40+ anos

35. Frequentei/concluí o ensino superior:

- ☐ Sim
- ☐ Não

38. Sexo:

- ☐ Mulher
- ☐ Homem
- ☐ Não me identifico