


## Article

# Integrating Sustainability into Corporate Strategy: A Case Study of the Textile and Clothing Industry

Juliane Peters <sup>1</sup> and Ana Simaens <sup>2,\*</sup> <sup>1</sup> ISCTE Business School, Instituto Universitário de Lisboa, 1649-026 Lisbon, Portugal;

juliane\_peters@iscte-iul.pt

<sup>2</sup> Business Research Unit (BRU-IUL), Instituto Universitário de Lisboa (ISCTE-IUL), 1649-026 Lisboa, Portugal

\* Correspondence: ana.simaens@iscte-iul.pt

Received: 16 May 2020; Accepted: 22 July 2020; Published: 30 July 2020



**Abstract:** This paper aims to explore a set of institutional, organizational, and individual drivers of and barriers to the integration of sustainability into the corporate strategy of a European textile and clothing (T&C) company. The methodology is based on a case study of the exemplar VAUDE, a family-owned sustainable outdoor outfitter company. The results are in accordance with institutional theory and stakeholder theory as a theoretical framework explaining why companies deal with sustainability. The determined drivers depend on coherence at all levels of analysis, i.e., institutional, organizational, and individual. The barriers found are of an institutional and organizational nature only. The findings present significant practical implications for other T&C companies that seek to integrate sustainability into their corporate strategy and for the T&C industry to create a sustainability-friendly environment to drive more companies to become sustainable. It further supports T&C companies in identifying potential barriers, determining how to overcome them, and successfully integrating sustainability into their corporate strategy. To conclude, the results suggest that it only works if sustainability is strongly integrated into the corporate strategy and deeply anchored in all departments and daily tasks of a T&C company.

**Keywords:** sustainability; textiles; clothing; corporate strategy

## 1. Introduction

The textile and clothing (T&C) industry represents an essential part of people's everyday life and its goods are considered as the second most substantial object of human desire [1]. The industry itself has experienced extensive growth and success in the last decades, making it one of the largest, but also most polluting, global industries [2,3]. Its large size, variety of processes, and complex global production networks cause major environmental and social impacts. In 2015, 79 billion cubic meters of water, 1715 million tons of CO<sub>2</sub> emissions, and 92 million tons of waste were produced globally by the T&C industry [4]. By 2030, the numbers are estimated to increase by at least 50% [4]. Moreover, the industry regularly receives negative attention because of poor working conditions, low wages, and exploitation of workers, especially in low-cost countries, where the majority of production is outsourced [5,6]. The ever-increasing consumption of T&C goods intensifies the present social and environmental issues [7]. As a consequence of increasing awareness, a growing dialogue regarding sustainability arose within the T&C community [7]. Companies across all industry segments have started to implement sustainable approaches and align economic, social, and environmental responsibilities through their corporate strategy, taking into consideration not only increased profits and decreased costs, but also the sustainable development of the company itself and its environment [8,9]. Indeed, the impact these organizations have on society and the environment is such that it requires changes at various levels. In the framework presented by Dyllick and Muff [10] (p. 157), it means progressively “moving from

business-as-usual to ‘true business sustainability’” which focuses on the needs of the society and the planet.

The term sustainability is often linked to the concept of sustainable development, i.e., meeting “the needs of the present without compromising the ability of future generations to meet their own needs” [11] (p. 5). Triple bottom line (TBL) is a useful term to understand the concept of sustainability applied to companies, as it focuses on a company’s management of economic, environmental, and social responsibilities and represents an attempt to coordinate them for a complete view of business performance [12,13]. Although TBL has provided a foundation for many companies to develop a sustainable business model (e.g., [14,15]), Elkington [16], who coined the term, expressed criticism that TBL is often used as a balancing act to adopt a trade-off mentality and retracted the term. A different but related concept is corporate social responsibility (CSR). While sustainability is grounded in science, the concept of responsibility is grounded in ethics and deals with moral obligations, claims, and duties [8]. Over time, the distinction between the terms sustainability and responsibility in the corporate context started to blur and the words started to be used interchangeably by companies as well as researchers [8]. Strand et al. [17] see sustainability and CSR as umbrella constructs that encompass concepts such as sustainable development and TBL, among others. Whereas in the past it was common to implement isolated CSR practices, currently, companies choose a more holistic and strategic approach, which integrates all aspects of sustainability and responsibility with stakeholders into the corporate strategy and makes use of alliances for support [18]. Bansal and Song [8] argue that both responsibility and sustainability assume that the economic, social, and environmental responsibilities of a company can be aligned through its corporate strategy. Corporate strategy is generically considered as “the pattern of major objectives, purposes or goals and essential policies or plans for achieving those goals” as defined by Andrews [19] (p. 28).

Prior research has analyzed cross-industry drivers of and barriers to a company’s integration of sustainability [13,20–22]. In line with the literature (e.g., [23,24]), these are aspects that act either as enablers or hindering factors, respectively, of integrating sustainability into a company. Examples of cross-industry drivers found in the literature include standards and regulations (e.g., [24]), competitive advantage (e.g., [20]), sustainability as a business case (e.g., [25]), corporate reputation (e.g., [13]), and top management (e.g., [13,26]). Examples of cross-industry barriers include standards and regulations (e.g., [27]), consumer behavior (e.g., [28]), sustainability as a business case (e.g., [20]), and top management (e.g., [20]). We argue that sustainability issues, practices, drivers, and barriers are industry-specific, and therefore, industry-focused research is appropriate [29]. There are plenty of studies on different industries in regard to sustainability, such as hotels [30–33], food and beverages [34–36], or cosmetics [37,38].

The T&C industry linked with sustainability has also been a focus of a variety of researchers in the past (e.g., [1,3,39–41]) along with industry-specific sustainable consumption behavior (e.g., [42–50]) and sustainable supply chain implementation [23,51,52]. Despite growing interest, to the best of our knowledge, there is scant literature focusing on European T&C companies with global value chains that successfully integrate sustainability into their corporate strategy, leaving a significant literature gap in that context [53]. The existing literature on sustainability in T&C companies often only focuses on consumers as drivers and/or barriers [29] or the implementation of sustainable business models or an industry-wide system [54,55]. Moreover, in the recent literature, the drivers of and barriers to the integration of sustainability into corporate strategy in both cross-industry and industry-specific cases are typically studied at one level of analysis at a time, mainly at the macro level (i.e., institutional or organizational level), not taking into consideration the micro level (i.e., individual level). As a result, it presents a fragmented overview, and there is a need for a multilevel review in which the diverse literature can be integrated into a coherent approach [56]. A welcome exception is the work of Pedersen and Andersen [53], who analyzed current challenges and opportunities in sustainable fashion and based their results on fashion experts from different sectors and geographies.

Increasingly, T&C companies have moved toward integrating sustainability into their corporate strategy and value chains (e.g., [9,51]). For example, from 1990 to 2009, companies in the T&C industry overall reduced their water, energy, and chemical usage in the processing of cotton by 50% [41]. However, such advances are not yet sufficient to consider the industry as sustainable, and many companies either have just started to use sustainable approaches or are still in the process of integrating sustainability into their corporate strategy. Hence, although the T&C industry linked to sustainability has been the subject of various studies, to the best of our knowledge, there is little research focusing on the integration of sustainability into corporate strategy with regard to European T&C companies with global value chains. Specifically, there is still a lack of convergent theoretical understanding of the specific drivers of and barriers to the integration of sustainability into the corporate strategy of an individual European T&C company. The objective of this research is to close that gap and create a better understanding of the topic. Therefore, we aim to answer the following research question: What are the drivers of and barriers to the integration of sustainability into the corporate strategy of a European T&C company?

To address the research question, the methodology used in this paper includes an exemplary case study of the European company VAUDE, to explore drivers of and barriers to the integration of sustainability into corporate strategy. VAUDE is a medium-sized, family-owned outdoor outfitter that develops, produces, and sells functional clothing, backpacks, bags, sleeping bags, tents, shoes, and camping accessories. It focuses on three business segments: mountain sports, bike sports, and packs and bags. The VAUDE brand and its products reflect mountain sport expertise, innovation, and social and environmental responsibility. VAUDE is particularly appropriate for this research and provides interesting insights, as it is considered to be an exemplar and a sustainability pioneer in its industry, and has sustainability integrated into its corporate strategy and all business activities. Among its distinctions [57], VAUDE has received multiple national and international awards and prizes in the last years for its excellent sustainability efforts (e.g., “Germany’s Most Sustainable Brand” in 2015, European Business Award in Environmental and Corporate Sustainability in 2017, GreenTec Award in 2018, and Environment Prize for Companies in 2019, ranked first in the German ranking of sustainability reports for the best transparency in the category small- and medium-sized enterprises). The paper starts with a literature review, followed by the research methodology, the findings, and a discussion of the case of VAUDE. Finally, a conclusion is drawn, discussing the main findings, limitations, and potential future research as well as managerial implications.

## 2. Integrating Sustainability into Corporate Strategy

### 2.1. Theoretical Frameworks Linking Sustainability to Corporate Strategy

An increasing number of companies have decided to integrate sustainability into their business through their corporate strategy [58]. Recent literature reviews on the topic also reveal the increasing relevance of the topic [59,60]. Porter and Kramer [61] argue that in order to understand competition in the market and develop a successful business strategy, companies have to integrate a social perspective into their existing core framework, hence their corporate strategy. The authors further claim that any sustainable approach that is fragmented or disconnected from corporate strategy and business operations will prevent a company from making use of opportunities to benefit society [61]. Cici and D’Isanto [20] (p. 54) define the integration of sustainability as “redesigning and redefining strategy and operative processes to face the changes and meet the needs and expectations of the market and society alike, with the ultimate goal of increasing competitiveness and supporting durable profitability.” Accordingly, sustainability is seen as a company’s capability to exist in the long term, sufficiently adapt to changes in the industry, and predict trends to exploit them to a maximum [20]. According to Murthy [21], integrating sustainability into corporate strategy not only creates value and a sustainable competitive advantage, but also responds to stakeholders’ demands concerning environmental and social issues. This is in line with Suriyankietkaew and Petison [59] (p. 18), who argue that when

organizations “embrace and embed sustainability-oriented strategies into their integrative strategy formulation and execution, they may gain benefits from sustainability outputs (i.e., sustainable competitive advantage, performance impact, and triple-bottom-line benefit) as well as achieving sustainability outcomes (i.e., balance, resilience and sustainable development).” Nonetheless, as Engert, Rauter, and Baumgartner [60] find, despite the increasing interest in the topic, there is still a lack of empirical studies on the integration of sustainability into strategic management. Specifically, there is scant discussion on the potential disadvantages or opportunity costs of integration [60].

Cici and D’Isanto [20] analyzed the meaning of integrating sustainability into corporate strategy in terms of business activities, and more than half of the 193 Italian companies they interviewed associated successful measurement and monitoring of economic, social, and environmental impacts on business with such integration. Additional business activities that the companies related to the integration of sustainability into corporate strategy were the creation of a sustainable product, adoption of a social and environmental management system, sustainable management of the value chain, satisfaction of unmet social needs, and reporting on financial and non-financial performance [20]. Moreover, around half of the companies already had a policy to integrate sustainability and had identified measurable objectives for the integration [20].

Other studies have supported the integration of sustainability into strategy (e.g., [62]), reinforcing that “competitiveness in today’s sustainability-rich world requires that business organizations develop strategies and processes that are economically competitive, socially responsible, and in balance with the cycles of nature, referred to as sustainable strategic management” [63] (p. 163). This shows an understanding by companies that in order to be successful and conclusively gain competitive advantage, sustainability initiatives not only have to be carried out, but have to be fully integrated into their corporate strategy. Along this same line of thought, Bonn and Fisher [64] and Folmer and Tietenberg [65] suggest that in order for a company to be effective and taken seriously, sustainability initiatives should be linked with corporate strategy right from the beginning and be continually addressed in planning and decision-making. Hosmer [66] even recommends a more specific approach and states that an ethical analysis is the only way to resolve conflicts in values and goals and therefore, is an essential aspect of corporate strategy.

The so-called leaders in sustainability, classified by Cici and D’Isanto [20] as those who have shown maturity in integrating sustainability into their corporate strategy, support these assumptions; currently, they are overall more successful in their markets than companies that do not yet have sustainability integrated.

### 2.1.1. Institutional Theory

According to DiMaggio and Powell’s [67] definition of institutional theory, society’s institutions serve as a set of working rules and provide a decision-making framework for companies. Hence, for a company to earn the legitimacy to survive, it has to conform to its institutional environment, which comprises normative, regulatory, and cognitive elements [67,68]. Normative elements include values, norms, and roles set by stakeholders that define the “rules of the game” [69]. Cognitive elements emphasize shared ideologies and cultural values that set the framework to form responsible corporate behavior [69]. Regulatory elements are legal rules and regulations that influence corporate behavior [69]. All elements together provide stability and meaning to social life [70].

By conforming to the forces of the institutional environment, companies within an industry become more homogeneous in process and structure over time. This homogeneity process is shaped by the following three mechanisms [68]: (a) coercive isomorphism: regulators, which companies depend on for resources, put pressure on them; (b) mimetic isomorphism: companies imitate other market players to reduce cognitive uncertainty; and (c) normative isomorphism: social factors such as media and trade associations put pressure on companies.

Additionally, it is observed that conforming to the institutional environment results from a conscious decision process of the company. In the case of sustainability, a company can succeed in

the market if it is aware of sustainability trends and policy changes in the industry and conforms to them [68]. The institutional environment supports a common understanding and definition of sustainable behavior in an industry, which companies can then use to formulate their own sustainable strategy [69]. Institutional theory further suggests that especially in an uncertain and rapidly changing environment, companies are under pressure to mimic the behavior of other market players. Through this behavior, companies can develop a sustainable strategy quickly and cheaply. Moreover, normative pressure from institutions like the stock exchange market can lead to more companies investing in sustainability initiatives [71]. Institutional theory has been used to investigate the relationship between institutions and strategic choices of companies [72]. It has been observed that a company's formulation of an environmental plan is positively influenced by pressure exerted by stakeholders and there is a positive relationship between normative elements and the adoption of environmental management standards [73,74]. As institutions vary from nation to nation and rely on different norms, regulations, and communal factors, drivers of sustainability integration into corporate strategy can vary among countries [75].

### 2.1.2. Stakeholder Theory

Freeman's [76] (p. 46) stakeholder theory states that stakeholders are "any group or individual who can affect or is affected by the achievement of a corporation's purpose." Moreover, it states that most, if not all, companies have a set of integrated stakeholders they are responsible and obliged to [77]. Freeman et al. [78] further argue that values are an inevitable part of doing business, and value creation for these stakeholders is the main objective of a company [78]. Mitchell et al. [79] point out that stakeholders, who are considered important by managers concerning their power, legitimacy, and urgency, influence a company's strategy. Based on resource dependence theory, Freeman [80] generated four types of stakeholder influence strategies, i.e., how stakeholders can directly or indirectly influence a company. Resource dependence theory [81] posits that stakeholders can gain leverage over a company according to the degree it is dependent on them. On the one hand, direct influence takes place if stakeholders are able to manipulate the flow of resources to the company [80]. On the other hand, stakeholders who neither control resources nor are considered to have a primary role in the company mainly exert an indirect influence through other stakeholders [80]. According to Cooper et al. [82], stakeholder theory used as a managerial tool is particularly concerned with detecting the kind of influence stakeholders exert on a company and identifying which stakeholders are more important and should receive more management attention. Clearly, different stakeholders can present different, and even conflicting, needs and interests [83].

Conclusively, stakeholders can directly and indirectly influence the sustainability practices of a company to different extents [84]. For example, consumer concerns about sustainable business practices have a significant impact on how businesses operate [40]. Nevertheless, a company that aims to create sustainable value by integrating sustainability into its corporate strategy has to consider a wider group of internal and external stakeholders, more than a company with a conventional business model would focus on. The conventional perspective of creating value for customers and shareholders must be expanded, for example, to nongovernmental organizations (NGOs), the environment, and local communities [85]. The study by Cici and D'Isanto [20] shows that by integrating sustainability, relationships with a wider group of internal and external stakeholders can be effectively developed or improved. This extended group of stakeholders puts greater pressure on companies to react to their demands. The majority of them are aware of environmental and social impacts caused by global industries and that water scarcity and water pollution are considered global concerns, many natural resources are endangered, and natural resources are becoming more expensive [47,86]. Moreover, their interests go beyond traditional ideas of corporate generosity and companies' efforts to counteract negative social and environmental impacts. As Renukappa et al. [13] (p. 64) state, stakeholders nowadays require companies "to be a positive force, to contribute to broader societal development



goals and to work in partnership with others to solve humanitarian crises and endemic problems facing the world such as disease and poverty, climate change and environmental stewardship.”

## 2.2. Drivers of Integrating Sustainability into Corporate Strategy

Across industries, the drivers of integrating sustainability into corporate strategy have become a common area of research in the last years. The same happened with T&C, and for the purpose of this paper, we focus on the European T&C industry with its variety of processes. However, as the processes inside the industry’s value chain are typically spread out globally, certain global data, statistics, and facts will be highlighted as well. The upstream and downstream processes of the T&C industry, which range from the production of raw material to disposal or reuse, will be called the value chain. Hence, in the following subsections we present the drivers that have been identified both generally and across sectors as well as specifically for the T&C sector (Table 1). The intention is not to be exhaustive, but rather to take stock of drivers that have been identified in the literature and that are useful to explore the research question.

**Table 1.** Drivers of integrating sustainability into corporate strategy. T&C—textile and clothing.

Level of Analysis	Name of Driver	Drivers, General	Drivers, T&C
Institutional	Standards and regulations	Cordano, 1993 as cited in [24]; [40,87–93]	[90,94,95]
	Consumer awareness		[43,46]
	Competitive advantage	[20,21,40,61]	[96,97]
	Public pressure		[3,98]
Organizational	Sustainability as a business case	[13,20,25,52,99–103]	
	Corporate reputation	[13,104]	[105,106]
Individual	Top management	[13,26,40,107,108]	[109]
	Originality		[54,110,111]

Source: Own representation.

### 2.2.1. Drivers across Industries

#### Standards and Regulations

In recent years, integrating sustainability into business and corporate strategy has become popular as an increasing amount of obligatory and voluntary standards as well as new government regulations regarding sustainability were released [87]. Developments like the introduction of certifications and waste reduction standards from external or government agencies have led to an increased awareness of sustainable action in a company [88]. Especially, governmental legislation concerning sustainable business practices is considered to have a significant impact when deciding to become sustainable [24,40]. More and more governmental laws are approved to encourage companies to develop sustainable approaches and to support stakeholders in their evaluation of the sustainability performance of large companies. For instance, large European public interest companies with over 500 employees are now obliged to disclose nonfinancial statements about their social and environmental impact in their annual reports [91]. The rising penalties, fines, and legal costs for noncompliance with such governmental laws increases companies’ focus on sustainability (Cordano, 1993, as cited in [24]). As governments increasingly support sustainability, companies may also introduce sustainable business practices proactively in response to being less exposed to changes in the regulatory environment and market pressure [40,92]. For instance, Li et al. [90] found that government initiatives were among the most critical factors for the implementation of CSR in the textile industry in China.

With the introduction of the ISO 14000 standards, additional pressure was put on companies to become more sustainable and certified accordingly [93]. The ISO 14000 family supplies companies with tools to manage environmental responsibility; ISO 14001, which focuses on introducing environmental

management systems, is an especially key influence on companies [112]. Many companies accomplish regulatory compliance by voluntarily certifying their management systems under this guideline [13]. Recent research validates the claim that ISO 14001 adoption and certification support sustainability [89]. SA8000, a standard that addresses social sustainability, has also been considered across industries, including T&C (e.g., [95]). Other standards that cannot be certified but provide guidance toward a sustainable approach are also starting to emerge. ISO 26000, for example, is aimed at supporting companies in translating socially responsible principles into effective actions and provides best practice examples to ultimately reach sustainable development [113].

### Competitive Advantage

As mentioned above, it is commonly claimed that a company's fully integrated sustainable approach can lead to competitive advantage (e.g., [20,61]). The resource-based view (RBV) is one approach that can be used to determine the development of competitive advantage through the integration of sustainability into corporate strategy [21]. The RBV first identifies a company's valuable, rare, inimitable, and nonsubstitutable resources, which then create certain capabilities. In the last step, competitive advantage is generated [114]. Figure 1 illustrates the flow from key sustainability-related resources over capabilities to competitive advantages when integrating sustainability into corporate strategy.



**Figure 1.** Creating competitive advantage by integrating sustainability. Source: Own representation based on [21].

Murthy [21] considers continuous improvement, stakeholder integration, reconfiguration for disruptive changes, embedded innovation, and shared vision as sustainability-related resources. Capabilities like preventing pollution, minimizing waste, practicing product stewardship, using clean technology, engaging the base of the pyramid, anticipating and advocating regulations, managing green know-how, and cooperating with technology then arise from these resources. Ultimately, the author identifies that competitive advantages are generated by lower cost, differentiation, high-performance routines, pre-emption, future competitive position in the market, reputation, and legitimacy as well as long-term growth [21].

It is important to highlight that those who move first toward sustainability are likely to gain a commanding lead in the market, which can serve as a sustainable competitive advantage. It is believed that over time, it is increasingly difficult to catch up with competitors and exploit the opportunities that integrated sustainability provides [40].

### Sustainability as a Business Case

Regarding sustainability, the so-called business case describes economic and financial benefits for companies derived from sustainable practices and initiatives. Recognizing that there may be different

levels of analysis by which to explore such relationships [115], our focus is on facts at the organizational level that can make sustainability a business case. In correlation to that stands “better management of intangible assets, long-term vision, stronger relationships with all corporate stakeholders and greater attention to risk management” [20]. Some authors, like Carroll and Shabana [99] and Eccles et al. [25], suggest that a successful sustainable approach also positively affects stock performance and returns on capital and investments, and even claim that integrating sustainability is crucial for market competitiveness. Moreover, it is suggested that companies with optimized sustainability processes and initiatives are less exposed and volatile to fluctuations in the prices of food, water, energy, and other resources that are increasingly observed nowadays [20]. Indeed, Margolis and Walsh [100] found that the majority of studies they analyzed suggested a positive relationship between corporate social performance and corporate financial performance. Similarly, in a meta-analysis exploring the relationship between corporate social and financial performance, Orlitzky, Schmidt, and Rynes [101] found evidence that corporate social performance is likely to pay off. One such example is a study on more than 2200 Portuguese small and medium enterprises over a period of 10 years where corporate social performance paid off [102].

The presented aspects are especially significant as reducing operating costs is highly important for companies and considered a common key driver of integrating sustainability into corporate strategy [13]. The results of the study by Cici and D’Isanto [20] underline this: 47.2% of the companies they interviewed assessed that the benefits from integrating sustainability outweighed the costs, and 32.5% matched benefits and costs equally. It has been further observed that companies that proactively integrate sustainability have lower costs than those that only react to social or environmental issues when they emerge [99]. A useful approach is to calculate internal carbon pricing. A company voluntarily sets a value to internalize the economic cost of its greenhouse gas emissions, or an internal carbon price [116]. In order to be effective, the internal carbon price should be incorporated into all business decisions, emissions across the value chain, and operational and capital spending [117]. Accordingly, an internal carbon price can then be used to test and assess the profitability of projects under various scenarios to ultimately make better long-term business decisions and develop innovations for how to allocate capital to achieve higher returns in a low-carbon economy [118]. Moreover, a company can benefit from the internal carbon price as a risk-management tool, as it can protect against potentially evolving carbon pricing systems, political decisions, and regulations regarding decarbonization. Being prepared for them beforehand can lead to competitive advantage in case the political decisions and regulations influence operating conditions, such as costs and changes in the value chain (Institute for Climate Economics, 2016). Although integrating sustainability initiatives like internal carbon pricing can be cost enhancing at first and even cause negative competitiveness in the industry in the short term, innovations can be triggered in the long term that ultimately lower the total cost of a product or improve its total value [13]. Additionally, sustainability initiatives can positively influence a company’s brand awareness and reputation and lead to increased purchasing by customers, which in turn boosts the financial performance of the company and may attract investors and reduce financial risks [20,52]. Trudel and colleagues [103] are among those who found that it pays to be good, because consumers are willing to pay more for ethically produced goods.

### Corporate Reputation

Companies have detected that protecting and enhancing one’s corporate reputation and image is essential in today’s global market. Behaving irresponsibly toward society and the environment could lead to a damaged reputation or even the collapse of a whole company. The sole perception that a company’s profit is gained at the expense of stakeholders can lead to a so-called bottom-line backlash, which can have a negative effect on the company’s reputation [13]. Primark Stores Limited, an Irish clothing retailer, which features fashionable clothes and low pricing, experienced this first-hand (Fashion United). Despite its successful retail performance, Primark suffered from serious accusations regarding illegal child labor and unethical partners in its supply chain [119], resulting in its selection



as the most unethical retailer in the UK [120]. Although Primark reacted to the accusations in the past, it still has not overcome the bad corporate reputation and consumers' perception that it is an unethical company [121]. The Primark case shows that especially coercive and normative isomorphisms pressure companies to build and maintain a strong corporate reputation. Therefore, companies are increasingly addressing environmental and social concerns, and particularly the ones that build their competitive advantage on creativity, innovation, intellectual capital, and service consider integrating sustainability to be critical for their corporate reputation [13].

### Top Management

The top management is considered to be especially influential in encouraging a company to integrate sustainability and is responsible for leadership toward sustainable business practices [107]. An interviewee from a study by Renukappa et al. [13] stated that "sustainability initiatives are driven 80% by head office and 20% by individuals within the company." This shows that top management, such as the chief executive officer (CEO), chairman of the board, or senior management teams, have a strong internal political force that can foster sustainable behavior inside a company [108]. Top management personnel who have expert knowledge in sustainability tend to consider it as an integral part of the company's value creation and set sustainability targets accordingly. In order to achieve these targets, it is believed that sustainability has to be fully integrated into a strategy, which considers the TBL: environmental, social, and economic concerns [13]. Furthermore, top management personnel including the company's founder(s) are considered to be particularly committed to drive sustainability initiatives, as they are personally and emotionally attached to the company and aim to promote a positive corporate reputation (Eddleston and Kellermanns, 2007, as cited in [122]). Similarly, Marcus, MacDonald, and Sulsky [123] (p. 470) found that "the stronger an individual's social or environmental values, the greater their likelihood of adopting beneficial (and avoiding harmful) social and environmental firm actions respectively." Additionally, a sense of responsibility seems to play a role if the company, driven by the commitment of its leaders, is to be more sustainable. As noted by Waddock and Rasche [124], in order to succeed, top management must believe in and be involved in establishing a responsibility vision. In this respect, using an ethical lens, Maak and Pless [125] developed a role model for responsible leadership that stresses the relational view of the way companies relate to their stakeholders. Finally, Fonseca [26] concluded that the more the respondent managers are oriented toward stakeholders, the stronger the company's sustainability or social responsibility program will be.

### 2.2.2. Drivers Specific to the T&C Industry

Among the drivers that were found across industries and are presented above, the following were also relevant to specific examples of the T&C industry: (i) standards and regulations, (ii) competitive advantage, (iii) corporate reputation, and (iv) top management. To avoid repetition, only the drivers that were not included in the general drivers across industries but were found specifically in the T&C industry literature are presented: (v) consumer awareness, (vi) public pressure, and (vii) originality. One exception is competitive advantage, which includes a different context and will therefore be presented again.

### Consumer Awareness

The T&C industry is strongly driven by consumer behavior, awareness, knowledge, values, and perceptions [43]. Accordingly, the demand for products and services is immensely influenced by consumers [43]. As awareness of and interest in sustainable T&C products particularly increased in younger generations, such as the so-called Generation Y, a larger demand for sustainability inside the industry was created [46], thereby driving T&C companies to integrate sustainability initiatives into their corporate strategy to meet the demand and satisfy their consumers' needs [46].

## Competitive Advantage

Due to globalization, T&C companies frequently shift their value chains to various low-cost manufacturing countries. By now, sustainability is commonly considered an additional expense as well as a competitive factor. It has also been recognized by low-cost countries, which make use of it to succeed amid the global competition to be attractive manufacturing locations for Western T&C companies. Certain countries like Turkey have identified that a sustainable shift of their T&C industry created a competitive country advantage compared to other low-cost countries like China, because more international T&C companies decided to shift their manufacturing units there [96]. This in turn puts pressure on local and international T&C companies that want to produce in the respective country to integrate sustainable practices in their daily business as well [96].

## Public Pressure

Major accidents like the collapse of the Rana Plaza building in Bangladesh put a special focus on the T&C industry by media, journalists, and social movements in the last years [126]. Rana Plaza collapsed as result of a fire, and 1138 workers at five clothing factories in the building were killed. As at least 27 global T&C brands produced in those factories, the international media scope of the tragedy was immense. Consequently, it helped to raise awareness of social and environmental issues in the industry and put public pressure on brands to take responsibility for their actions [127]. Nowadays, sweatshop and unsustainable production conditions of the T&C industry are commonly reported and brands are targeted as the ones with the main responsibility to counteract such conditions. Such media coverage can threaten a company's reputation, which creates a powerful driver for companies to integrate sustainable approaches into their corporate strategy and achieve more sustainable value chain management [3].

## Originality

Cline [110] argues that the common fast fashion approach of the T&C industry makes clothing meaningless and pointless. Trends and designs seen on fashion runways are constantly repeated, which results in a homogenization of fashion, brands replicating each other, and a loss of originality. Particularly today, though, it is considered important and desirable to stand out in society and present oneself as an individual. A key tool to do so is fashion [111]. The deeply-rooted desire to be unique can act as a driver for T&C companies to produce sustainable slow fashion alternatives and resolve the current homogenization of fashion [54].

### 2.3. Barriers to the Integration of Sustainability into Corporate Strategy

The transformation of any industry relating to a specific concept like sustainability is complex and challenging. Especially in the T&C industry, it can be difficult, as fashion and sustainability are still frequently considered as contradictory. This in turn presents certain barriers to integrating sustainability into corporate strategy. Both general cross-industry barriers and specific barriers in the T&C industry are presented in Table 2 and further explained in the next two subsections. Again, the intention is not to be exhaustive, but rather to take stock of barriers identified in the literature that will be useful to explore the research question.

#### 2.3.1. Barriers across Industries

While there are, on the one hand, drivers for integrating sustainability into corporate strategy, on the other hand, there are barriers to successful integration, which are discussed in the upcoming paragraphs.

**Table 2.** Barriers to the integration of sustainability into corporate strategy.

Level of Analysis	Name of Barrier	Barriers, General	Barriers, T&C
<b>Institutional</b>	Standards and regulations	[27,128–130]	[23,53,131]
	Consumer behavior	[28,108,128,129,132]	[29,44,50,53,109,133–140]
	Economic growth		[49,139]
	Reluctance from well-established brands		[23,141]
<b>Organizational</b>	Sustainability as a business case	[13,20,24,28,40,128,129,132,142]	[23,53,143,144]
	Value chain management		[23,39,55,145,146]
<b>Individual</b>	Top management	[13,20,24,40,147,148]	

Source: Own representation.

## Standards and Regulations

Although more and more standards and regulations have been enacted globally, compliance is still perceived as difficult and considered a key barrier to the integration of sustainability. Companies are demotivated by the lack of government support and feel that regulations to achieve sustainability are not industry-friendly and do not give special benefits for implementing sustainability initiatives [130].

As value chains often cross the borders of continents and countries, standards and regulations might vary by country, state, region, or city [128]. Due to globalization, working with suppliers from different countries in the value chain is common. These suppliers often depend on a multilevel supply chain themselves, which makes it difficult for companies to have an overview of the whole supplier network and presents huge purchasing complexity. Cooperation with suppliers in other countries concerning sustainability standards and regulations can therefore be difficult, and not all of them will agree to a company's code of conduct, a formal document consisting of moral standards that explicitly specifies the company's commitment to sustainability [149,150]. Thus, companies are concerned that integrating sustainability into their corporate strategy may limit the number of potential suppliers [129]. Additionally, the existence of competing and overlapping sustainability standards addressing the same issues creates uncertainties for companies. Due to diverse foreign customers requiring different certifications on the same topic, as well as frequent changes in requirements and unpredictability about the future evolution of standards, companies are less likely to obtain any standard certification and integrate sustainability into corporate strategy [27].

## Consumer Behavior

According to Mathiyazhagan et al. [28], consumer demands are critical for any kind of company. A common barrier to the integration of sustainability initiatives is therefore currently observed consumer behavior, which includes a lack of awareness of sustainable products and their benefits [132]. This topic will be further discussed in the section “Barriers to the Integration of Sustainability into Corporate Strategy for T&C Companies,” as the T&C industry is characterized as consumer-driven and therefore a particular useful representation.

## Sustainability as a Business Case

In a yearlong survey conducted by Hopkins et al. [40], almost 70% of the respondents stated that their company did not have a strong business case for sustainability. Of those, 22% claimed that the lack of a business case was a fundamental barrier to integrating sustainability into their corporate strategy. It is a common perception by companies that the process of becoming sustainable will deteriorate their competitiveness by creating high costs and no immediate financial advantages [128]. Companies confirm that integrating sustainability can be expensive and even cause negative competitiveness in the industry in the short term [13]. Initial investments that are required to, e.g., adopt the latest technology, train employees in sustainability, implement green design, develop an IT infrastructure, and recycle inside the company, as well as direct and transaction costs for managing and maintaining sustainability issues are the main financial pressures hindering a company from integrating sustainability [28,132,142].

In addition, sustainable materials are often more expensive than conventional ones and can increase the total cost of products [129], which in turn can increase the buyers' and suppliers' costs as well [24].

Moreover, the study by Hopkins et al. [40] further observed three main challenges to building a business case for sustainability. First, companies have difficulties forecasting and planning beyond the typical investment time frame of one to five years. Sustainability is a long-term investment, in which the cost and benefit calculations can stretch over generations. Traditional economic business models make it challenging for companies to take it on. The second challenge is assessing the company-wide effects of sustainability investments. Companies already have difficulties identifying, measuring, and controlling the tangible aspects of their business. Often, they still do not attempt to model aspects like an internal carbon price in their current business activities [40]. Under the supposition that real costs like a carbon price will evolve in the future, the current approach of only predicting where the market is going and then designing and executing strategies based on that may lead to a prospective unprofitable business case. Only if sustainability drivers are considered can a realistic image of a company's business case be drawn, and it can avoid becoming locked in to unprofitable investments and stranded assets [151]. Third, decisions with regard to sustainability have to be made under high uncertainty. Factors like government legislation, customer and employee demands, and geopolitical events have unknown impacts and could change at any time. This makes it especially challenging to manage and address sustainability effectively [40].

### Top Management

A key barrier to the integration of sustainability into corporate strategy is the lack of competence to manage the alleged paradox of improving environmental, social, and economic goals at the same time, which consequently blocks the translation of sustainability into corporate strategy and executive operations [13,20]. The lack of competence is often rooted in a lack of clarity regarding sustainability at the top management level of companies. No common definition to discuss sustainability exists; some define it narrowly, some broadly, and others do not know a definition at all [40]. More than half of the managers taking part in a survey by Hopkins et al. [40] stated that they were in urgent need of better frameworks to understand sustainability and discuss it accordingly. Moreover, outdated mental models and perspectives, which shape a certain skepticism toward sustainability, can often still be found. This lack of clarity leads to an incoherent institutionalization of sustainability and a loose definition of sustainability goals. Hence, in a lot of companies, there is still no common understanding of sustainability. Ultimately, this leads to poor measuring, tracking, and reporting of sustainability efforts, which can then often be perceived as unsuccessful [40].

Moreover, maintaining a balance between sustainable and conventional development can be a big challenge [147]. Especially in hypercompetitive markets, characterized by aggressive competitors and shareholders demanding rapid financial returns, a conflict of aims can arise between sustainability and profitability [148]. Management personnel often still react to this conflict by prioritizing business operations, which strengthens the economic rather than the social or ecological value [24]. Especially in a recession, companies are pressured by market competition and stakeholders to prioritize short-term results like reducing costs instead of long-term strategic goals [20,24].

Finally, a lack of commitment to sustainability by top leaders may relate to values and willingness. As noted by Waddock and Rasche [124] (p. 83), "Values are the basis of any organization's ability to operate with integrity and responsibility." Marcus and colleagues [123] found that when economic values are relatively stronger within an individual's overall value profile, including environmental and social values, it can then be problematic in terms of engaging in sustainability actions.

### 2.3.2. Barriers for the T&C Industry

#### Consumer Behavior

Desore and Narula [29] consider consumer-centric elements as a key barrier to the integration of sustainability in a T&C company. Regularly, consumers perceive the infrastructure, availability, accessibility, and affordability of sustainable alternatives to conventional T&C products as challenging and inconvenient [136]. If they believe that they have to invest more time and effort to purchase a sustainable product, they may choose the more comfortable option, even if it has a significant environmental or social impact [137–139]. Moreover, it is still a common opinion by consumers that sustainable clothing is old-fashioned, and therefore, they do not actively look for sustainable alternatives [53]. Although Eder-Hansen et al. [44] suggest that many consumers lack awareness of and knowledge about the impact of fast fashion consumption, even sustainability-conscious consumers who are aware of environmental and social issues prefer low to reasonably priced fashionable clothing over more expensive sustainable alternatives [133,140]. The high degree of globalization in the T&C industry creates a distance between individual consumers and a greater consumption impact, which consequently can hinder their adoption of sustainable consumption behavior [50]. It has also been observed that sustainability-conscious consumers do not have the knowledge to make effective comparisons based on the ecological footprint of certain kinds of product, which would enable them to choose more sustainable options [134].

Additionally, the information made available by T&C companies about their sustainability initiatives is perceived as unreliable by many consumers. Current sustainability initiatives of big companies are, in many cases, seen as only “less bad” and insufficient to address fundamental social and environmental issues [53]. Along with the fast development of sustainable approaches in recent years, the number of greenwashing cases in the T&C industry, in which corporate disclosure with regard to environmental aspects is structured so as to maximize the perception of legitimacy, has increased rapidly [152,153]. H&M, for instance, likes to advertise its position as the second-highest ranked global user of organic cotton. Taking a more detailed look at its sustainability report, it can be observed that in 2018 only 14.6% of the company’s total cotton use was organic [154], leading the consumer to have a false perception of making a completely sustainable purchase. Insufficient transparent information, as in the H&M case, leads to skepticism and a lack of trust by consumers in the sustainability labeling of T&C companies, and consequently, they may tend to not choose sustainable products [109,135]. As long as the perception of a product’s sustainability is inconvenient and skepticism and lack of awareness prevail, T&C companies may see it as invaluable to integrate sustainable approaches into their corporate strategy.

#### Economic Growth

The T&C industry, especially its fast fashion component, provides many job opportunities and enhances economic growth and earnings for the countries in which it operates. Some actors who work in the industry fear that sustainable development can lead to a deceleration in economic growth and therefore to job losses and rising national unemployment rates [49,139]. Inasmuch as this fear endures and main actors in the industry actively work against sustainable approaches, barriers to successful integration of sustainability in T&C companies exist.

#### Reluctance by Well-Established Brands

Chesbrough [141] states that well-established brands that base their business on fast production may also be reluctant toward new business models. This highlights the difficulties in changing existing business models that have been successful in the past and have become institutionalized in the organizational infrastructure, to sustainable ones [141]. As sustainable T&C products are often still considered niche products, current successful companies may be afraid to risk their well-being and change to a sustainable approach [23].



## Value Chain Management

A lack of transparency with regard to sustainability causes uncertainty not only for consumers, but also for the company itself. The highly global approach of the T&C industry makes its value chains complex, fragmented, and less transparent [145]. For a T&C company, it is difficult to trace whether its code of conduct is also applied in the whole system of international suppliers, manufacturing facilities, transportation, retail, and aftercare [39]. Misaligned values and technical difficulties due to geographic and cultural distances as well as lack of knowledge at any process step can cause inconsistencies with regard to sustainability approaches throughout the industry's value chains [23,55]. Additionally, Oelze [23], who observed T&C companies experienced in implementing sustainability standards, stated that often a lack of intrinsic motivation and an unwillingness to integrate sustainability standards exists on the supply side, which in turn creates a major barrier for companies to fully integrate sustainability into their business practices [23,55]. These findings are in line with the literature review carried out by Köksal et al. [146] on socially sustainable supply chain management in the T&C industry.

## 3. Methodology

### 3.1. Research Design

Primary research was undertaken to fulfil the requirements of the aims and objectives of this paper. Given the limited insights provided by the literature into drivers of and barriers to the integration of sustainability into T&C companies, exploratory research was conducted. According to Robson [155] (p. 59), exploratory research aims to find out “what is happening; to seek new insights; to ask questions and to assess phenomena in a new light.” As it evolves and is based on small samples that provide understanding of certain topics, exploratory research allows us to further enhance theoretical observations about drivers of and barriers to integrating sustainability into corporate strategy [156]. The purpose of this paper is to gain detailed insights, motivations, beliefs, and experiences on why a company should or should not integrate sustainability into its corporate strategy. Hence, we chose a qualitative research method, since it gives us the opportunity to capture the substantial meaning of a subject by its richness and fullness and enables us to find profound explanations of motives for or deterrents to the integration of sustainability [155].

In order to gain an in-depth understanding of the research topic, the research was designed to be interpretive in nature. An interpretive research philosophy is typical for an exploratory qualitative research design and holds that reality can only be understood by putting subjective meanings to it, which in turn motivates certain actions [157]. It is especially useful for this paper in order to explore in detail the drivers of and barriers to sustainability for T&C companies. We assert that a case study will be especially useful to provide a level of detail and gain an enriched understanding of what drives companies to successfully integrate sustainability into their corporate strategy, and what hinders them from doing so. Therefore, we decided to use a case study design. This choice reflects other research that privileged the case study as a method to study sustainability in the supply chain [158], as well as drivers of and barriers to implementing sustainability in the T&C industry (e.g., [23]). Yin [159] (p. 4) argues that the case method seeks to understand complex social phenomena, allowing for the retention of “the holistic and meaningful characteristics of real-life events.” In particular, we chose to make use of an exemplary case design, meaning that the case study reflects a strong, positive example of our topic of interest [160]. Following Yin [160], we were looking for an exemplary company to be a representative case, standing as an example of a wider group of European T&C companies that have embarked or are going to embark on the journey of incorporating sustainability into their strategy, facing both drivers and barriers in the process. Other studies have used exemplary case studies of T&C companies [158]. It is important to note that the purpose of this research is to generate a theory that is not necessarily generalizable to all populations, but only applies within the boundaries of the research setting [157]. Instead, this study aims to explore and add to the evidence in the existing literature

on the integration of sustainability into strategic management, considering the scarcity of empirical studies [60].

In order to answer the research question, certain criteria for the case selection were identified: it had to (1) be in the T&C industry; (2) be based in Europe; (3) have sustainability integrated into its corporate strategy; (4) be considered as an exemplary case (prizes and awards related to sustainability); (5) be located in a certain region as a convenience factor for the researchers; and (6) be willing to share the experience of its integration process, including drivers and problems encountered, from more than one department. The convenience factor has been found in the literature as a criterion for the choice of exemplary case studies related to sustainability [161]. Based on desk research, a sample case study that complied with the criteria was chosen. The outdoor outfitter company VAUDE was then contacted, as it met all of the criteria and was interested in participating in this research.

Our choice of an exemplary case [159] resulted in the belief that a single case study analysis can provide an accurate, empirically rich, and comprehensive account of a specific phenomenon [162]. Therefore, we decided to use a case study by selecting one European T&C company and taking a detailed look at different departments as multiple units of analysis [159]. Still, this approach is not free of criticism. Hence, we took additional measures. The validity of the key constructs used in the study was promoted by taking and clearly defining the concepts considered critical in the literature, despite the variety of concepts and interpretations. The decision was to define, at the outset, the key concepts that were to be adopted in the case study and the analysis of findings and maintain these definitions throughout the research. The validity of the constructs in the case study was ensured by the use of multiple sources and the opportunity given to the informants from VAUDE to revise the draft of the case study report. Unlike hypothesis testing studies, where statistical generalization is a major concern, the type of research reported here seeks analytical generalization [159]. This demands a clear definition of the domain in which the findings can be generalized, so that there is a logic that will allow the study to be replicated at some time in the future. Given the exploratory nature of the case study, internal validity was not a concern [159].

### 3.2. Data Collection and Analysis

The first contact was made with the case company via a phone call to the senior manager, corporate social responsibility, sustainability, and environment, health, and safety (EHS). On the same day, a follow-up email was sent with all details about the aim of the study and a request for interviews with members of the departments that dealt with relevant areas found in the literature review (i.e., departments that, irrespective of their names, were responsible for product development, buying, strategy, marketing, branding, communication, and CSR). Out of a list of eight relevant people suggested by the senior manager who had detailed knowledge about the integration of sustainability, five potential interviewees replied for personal meetings. The whole process took about two weeks. Considering that the main departments were covered and the richness of the collected data [162], no further contacts were made.

Having the agreement of the case company, both secondary and primary sources of data were collected [159]. Secondary data collection occurred between July and August 2019, when data concerning the company's sustainability approach were extracted from the sustainability report posted on the official website (Consultation of VAUDE sustainability report: <https://csr-report.vaude.com/gri-en/index.php>, accessed between 3 July 2020–15 September 2020, approximately 60 times). Primary data were the main source after conducting interviews. These two main data sources were complementary and allowed for methodological triangulation [163] aimed at validating facts rather than perceptions. Information gained from the on-site interviews was mainly used to answer the research question. Interviews are considered as a key tool to access the perceptions of informants in the real world [164]. Therefore, in-depth semi-structured interviews with five key personnel from different departments with in-depth knowledge about the case company's sustainability approach were conducted (Table 3).

**Table 3.** Interview details.

Interviewee Job Title/Department	Date Time of Interview	Location of Interview	Type of Interview	Duration of Interview
CEO	11 July 2019, 16:00	VAUDE Headquarters	Face-to-face	24:02 min
Chief Product Officer (CPO)	11 July 2019, 11:30	VAUDE Headquarters	Face-to-face	33:34 min
Logistics Manager	11 July 2019, 13:00	VAUDE Headquarters	Face-to-face	49:22 min
Head of Quality and Chemical Management (QCM)	11 July 2019, 17:00	VAUDE Headquarters	Face-to-face	57:05 min
Vendor Manager	11 July 2019, 12:15	VAUDE Headquarters	Face-to-face	22:48 min

Source: Own representation.

The semi-structured typology was chosen to allow a flexible interaction between the interviewer and the respondent, but also to have a consistent set of categories to define the boundaries of what to explore [157]. Furthermore, semi-structured interviews are especially useful if an interpretive research philosophy is chosen for the research. As the aim of this paper is to understand what kind of meaning respondents attribute to certain phenomena, a semi-structured interview allows them to explain or build on their responses. It is assumed that it provides the ability to reach a detailed set of data with significance and depth especially focusing on the “why” of a phenomenon [157].

The interviews were based on individual scripts grounded in the literature (available upon request) with a set of open and probing questions that encourage extensive answers. The interview scripts were shared with the respondents via email before the actual interview took place. The first few questions of the script were identical for all respondents, with the aim of detecting different perspectives on the integration of sustainability in the case company. The remaining questions were designed to find out sustainability-related topics in the respective department of each respondent. In total, the questions were designed to achieve the stated research objective and included inquiries on the definition of sustainability in the context of corporate strategy, drivers of becoming a sustainable company, and encountered and potential challenges. All interviews were conducted face-to-face on-site at the company and lasted between 25 and 60 min. In order to ensure validity, the interviews were audiotaped with the interviewees’ permission and later transcribed verbatim. Afterward, the transcribed data were coded with Nvivo 12.5.0., qualitative data analysis software, in order to evaluate the answers and identify the most relevant factors in the analysis. During the data analysis, six main categories were identified: (1) barriers, with 12 subcategories; (2) drivers, with 6 subcategories; (3) success factors, with 12 subcategories; (4) differences between T&C industry and others; (5) info on the case company; and (6) integration of sustainability into corporate strategy. The categories were chosen to answer the research question and to find and document additional information about the T&C industry and case company and the general integration of sustainability into corporate strategy. The categories chosen in Nvivo are strongly connected to the themes of questions in the interview guidelines created before conducting the interviews, based on the literature review. Therefore, relevant additional information that went beyond the existing literature was used to create categories for a more coherent view of the T&C industry and case company, and the integration of sustainability into corporate strategy.

## 4. Findings and Discussion

### 4.1. Presentation of Case Company and Its Integrated Sustainability Approach

VAUDE was founded in 1974 by Albrecht von Dewitz and is now managed by the second generation with Antje von Dewitz as CEO. There are 542 employees working for the brand, of whom 444 are employed at the headquarters in Obereisenbach, Southern Germany. VAUDE has sales branches in the Netherlands and Spain, and factory outlets and various leased order rooms nationwide in Germany, as well as teams in Vietnam and China that are organized as subsidiaries that regularly visit and partly conduct quality control in the local production facilities [57] (interview, vendor

manager). The complete product development, administration, management, finances, accounting, human resources, marketing, information technology (IT), CSR, product services including a repair service, and central logistics are located at the headquarters.

In 2017, VAUDE's sales performance grew by 6.3% compared to the year before, making it a basis for turnover of over €100 million in terms of absolute economic performance, which is above the average in the European outdoor market (interview, CEO) [57]. In the same year, VAUDE produced 3,185,229 products, selling over 60% of them in Germany and around 30% in the rest of Europe. The highest sales in Europe after Germany are in Switzerland, Austria, Belgium, Netherlands, France, Italy, Spain, Great Britain, and Sweden. Outside of Europe, VAUDE concentrates on a few major markets in Asia and North America. Moreover, all products for the European market are delivered, tested, warehoused, commissioned, and shipped to retailers from the headquarters. For the North American and Asian markets, VAUDE relies on third-party deliveries from producers to distributors within the respective country.

In order to provide a context for VAUDE's sustainability approach, it is necessary to understand what the company and those interviewed understand by integrating sustainability into their corporate strategy. In VAUDE's understanding, engaging in business comes with a responsibility to contribute to the public good. Therefore, VAUDE aligns itself in the long term with future-oriented ecological, social, and economic goals, which echoes the TBL concept [12,13]. The brand continuously aims for the most innovative and sustainable solutions to keep its ecological footprint as small as possible. The guiding principles "The Mountain," "We," and "Forward" form the brand's corporate vision and put its values into concrete terms. "The Mountain" indicates the high, clearly-defined standards of VAUDE's products and the experience of nature. "We" stands for a partnership with nature and people, in the company as part of the team, in the mountains, in partnerships, and in society. It symbolizes fun, common strength, and the spirit of the times that requires people in society to work collectively to solve the threats to the planet. "Forward" implies a forward-looking, future-oriented view of sustainability. VAUDE aims to extract the essence of its products to contribute sustainable, innovative solutions for future generations. This idea resonates the concept of sustainable development, i.e., meeting "the needs of the present without compromising the ability of future generations to meet their own needs" [11] (p. 5). In order to implement its vision at all levels of the company, VAUDE has fully integrated sustainability into its corporate strategy and approaches it strategically on multiple levels. To the CEO, the integration of sustainability into corporate strategy means "that a company is positioning itself with the knowledge of the impacts its economic actions have on people and nature, and that I take responsibility for these actions" (interview, CEO). She goes on, "Sustainability is actually nothing else to me than corporate responsibility in a more holistic approach than it is understood conventionally" (interview, CEO).

The head of Quality and Chemical Management (QCM) at VAUDE shared a similar view: "Today it is inevitable to build a sustainable corporate strategy, because the global challenges approaching us are so complex that if you do not have your own strategy, you will go down" (interview, head of QCM). This is aligned with the work of Cici and D'Isanto [20], who see sustainability as a company's capability to exist in the long term, sufficiently adapt to changes in the industry, and predict trends to exploit them to a maximum. A company can only be fully sustainable when its economic and sustainability strategies are integrated; hence, sustainability is integrated into corporate strategy (interview, CEO). This is in line with the literature stressing the role of this integration (e.g., [21,61,64,65]). As the chief product officer (CPO) commented, "Sustainability has to be strongly anchored in the organizational structure" (interview, CPO). VAUDE's sustainable corporate strategy is designed and managed at the executive level of the brand and integrated into all daily business tasks and departments (interview, CPO). "It is like a puzzle, everything complements each other. In the center stands the sustainability topic" (interview, CPO).

On a yearly basis, VAUDE's corporate strategy is reviewed by the executive board from the top down and bottom up, and is continuously developed and improved. VAUDE's sustainability approach

is based on the United Nations Sustainable Development Goals (SDGs). Further, its sustainability goals derive from the requirements of external standards and certifications such as the Global Reporting Initiative (GRI), Eco Management and Audit Scheme (EMAS), Fair Wear Foundation (FWF), ISO 14001, leader status by the Fair Wear Foundation, founding member status by the Partnership for Sustainable Textiles, Economy for the Common Good (ECG), the German Sustainability Code, the VAUDE Greenpeace Detox Commitment, and the Higg Index [57]. These sustainability goals are regularly analyzed for potential difficulties, and are directed and measured at the respective sustainability standard by the CSR Team, an interdisciplinary team including key personnel from different departments that coordinates all sustainability activities in the company. Additionally, VAUDE developed its own sustainability label, Green Shape, including a collection with certified environmentally-friendly products, components, production facilities, and printing processes. The Green Shape label brings together a variety of sustainability standards and certifications, such as the ones mentioned above as well as others like bluesign, Global Organic Textile Standard (GOTS), Ökotex 100, and Blauer Engel [57].

The examples provided above show different levels of commitment by VAUDE. Not only do we see the company engaging in sustainability practices at the organizational level, but we also find great involvement at the institutional level. This is line with the work of Dyllick and Muff [10] (p. 166), who posit that businesses, by engaging at the sector or even cross-sector level, “can change the common approaches and practices shared by all members in an industry and along supply chains. They can do this by creating transparency, sharing best practices, defining common rules, and setting standards.” Ultimately, as the authors continue, “[t]hese collaborative partnerships will increase the impact and outreach of their sustainability strategies” [10] (p. 166).

The green approach continues in the brand’s value chain. VAUDE differentiates between producers, which are tier 1 manufacturers of ready-made clothing, and tier 2 material suppliers. The brand only has direct contractual business relationships with the producers, but specifies the conditions for the selection of suppliers to a large extent. Table 4 presents VAUDE’s production countries, the number of production facilities that VAUDE works with in that country, the share of goods produced there, and whether it is a high-risk or non-risk production country.

**Table 4.** VAUDE’s production facilities.

Production Country	Number of Producers	Share of Produced Goods (%)	High-Risk/Non-Risk
Germany	4	5.2	Non-risk
Austria	1	0.1	Non-risk
Portugal	2	0.4	Non-risk
Lithuania	2	3.7	Non-risk
Bulgaria	1	1.7	High-risk
Croatia	1	1.0	Non-risk
Turkey	1	1.3	Non-risk
Myanmar	1	8.9	High-risk
China	10	9.2	High-risk
Cambodia	1	0.8	High-risk
Vietnam	14	67.7	High-risk

Source: Own representation based on [57].

In a high-risk production country compared to a non-risk country, it is more likely that labor standards and laws are violated and institutions like trade unions, employee organizations, labor legislation, and supervision systems either do not exist or do not function well [57]. All the production facilities VAUDE works with in high-risk production countries are audited by the FWF or, if the FWF is not active in the respective country, audited by an FWF-acknowledged company (interview, vendor manager). Producers in non-risk countries are not audited as the risks are much lower, but are regularly visited by VAUDE employees.



VAUDE has received multiple awards and prizes in the last years, often for its excellent sustainability efforts. Some are presented here. In 2015, it was named “Germany’s Most Sustainable Brand”; in 2017, it was awarded the European Business Award in Environmental and Corporate Sustainability and voted as one of the 11 best European companies; in 2018, it received the GreenTec Award, one of the world’s most important environmental awards, as well as the Environment Prize for Companies for exceptional achievement in environmental protection activities and environment-oriented business management; in 2019, the company ranked first in the German-wide ranking of sustainability reports for best transparency in the small- and medium-sized enterprises category [57].

The case company data revealed numerous insights regarding what drives T&C companies to integrate sustainability into corporate strategy and how to do it successfully, and what hinders them from doing so. The following presents the drivers and barriers identified from interviews at the case company. All factors are sorted on the same three levels of analysis as in the literature review: institutional, organizational, and individual. Table 5 visualizes the results, showing whether each driver or barrier was already determined in the existing literature and the determined level of analysis. All of them are illustrated and discussed in the next sections.

**Table 5.** Drivers of and barriers to the integration of sustainability into corporate strategy identified from interviews with the case company.

Category	Existing	New	Level of Analysis
Drivers			
Consumer awareness	x		Institutional
Competitive advantage	x		Institutional
Sustainability as a business case	x		Organizational
Corporate reputation	x		Organizational
Top management	x		Individual
Originality	x		Individual
Barriers			
Standards and regulations	x		Institutional
Consumer behavior	x		Institutional
Limited options and comparisons		x	Institutional
Uncertainties		x	Institutional
Infrastructure		x	Institutional
Situation in production countries		x	Institutional
Sustainability as a business case	x		Organizational
Value chain management	x		Organizational
Data handling		x	Organizational
Trade-off between quality and durability		x	Organizational

Source: Own representation based on the interviews.

#### 4.2. Drivers of the Integration of Sustainability into Corporate Strategy of a T&C Company

From the case company data, we determined the prevailing drivers of the integration of sustainability into corporate strategy of a T&C company. The determined drivers fit with the ones already identified in the existing literature. However, the drivers’ standards and regulations and public pressure, which were highlighted before, were not made a subject of discussion from the interviewees’ side. Still, from what is presented above, standardization and regulations are present in the process of integrating sustainability into corporate strategy.

The following paragraphs discuss the drivers that were determined from interviews with the case company in more detail.

**Consumer Awareness:** In terms of sustainability, the CPO of the case company suggested that “a significantly larger awareness of these topics is developing” (interview, CPO). We further observed that sustainability-aware consumers consciously decide on sustainable alternatives to conventional

products: “The people are then also willing to make a conscious decision for a brand or a product, because they know that it conforms to other criteria or requirements” (interview, CPO). Our results stand in line with those of Hill and Lee [46], who observed a greater awareness of and interest in sustainability topics, especially by younger generations, resulting in an enlarged demand for sustainable products in the T&C industry. Ultimately, rising consumer awareness drives T&C companies to integrate sustainability into their corporate strategy in order to satisfy the market’s needs and wants.

**Competitive Advantage:** The resulting competitive advantage was identified to be another driver when it comes to integrating sustainability into the corporate strategy of a T&C company, supporting authors like Cici and D’Isanto [20] and Porter and Kramer [61]. We detected that a fully integrated sustainable corporate strategy can lead to competitive advantages like a positive corporate reputation and legitimacy and therefore attract new customers. As the CEO stated: “It is for sure that we have won or are still winning new target audiences with that alignment, because we are a brand of trust and these people get aware of us” (interview, CEO). Moreover, integrating sustainability into corporate strategy not only may lead to competitive advantage, but might even be considered a competitive disadvantage if the company does not address sustainability accordingly, as the CEO stated: “Everyone is concerned about that topic. It became a thing of survival” (interview, CEO). The Head of QCM offered a similar view: “And I think that the future competitiveness will be strongly dependent on how sustainable a company is” (interview, head of QCM). Both views agree with Murthy’s [21] resource-based approach to sustainability, in which the author determined the development of competitive advantage through the integration of sustainability into corporate strategy.

**Sustainability as a Business Case:** Our interview results show that a T&C company can benefit as a positive business case evolving from sustainability approaches that can be driving the decision to fully integrate them into corporate strategy. The CEO highlighted: “You can see just in our total revenue that we are growing more and more than the European average” (interview, CEO). She continued: “As a pioneer, we profit from a broad reach in media, a high image, and trust. There are studies where you can see that people who know VAUDE also like it and buy it. The correlation is very high” (interview, CEO). Our findings thereby fit the view of Ganesan et al. [52] and Cici and D’Isanto’s [20] that sustainability initiatives can positively influence a T&C brand’s image, lead to more purchases by customers, and eventually increase the financial performance of the company. Although our literature research identified various arguments for the cost-saving aspect of sustainability approaches as a driver for integrating sustainability into corporate strategy, e.g., because of less exposure to fluctuations of resource prices [13,20], it did not come up during the interviews with the case company.

**Corporate Reputation:** We found that a positive corporate reputation in terms of sustainability can drive other companies and partners to cooperate and be willing to work on sustainability initiatives with a T&C company (interview, logistics manager). Such cooperation in turn enables the company to further pursue sustainability initiatives and develop innovations. Our results support Renukappa et al. [13], who argue that particularly companies that build their competitive advantage on innovation consider the integration of sustainability into corporate strategy as critical for their reputation.

**Top Management:** Our findings present the intrinsic motivation of top management as a key driver of integrating sustainability into corporate strategy of a T&C company. The CEO described her motivation to develop a sustainable corporate strategy:

Personally, my mother is already very visionary, like a Greenpeace activist. She stands by her opinion and is very environmental-friendly, liberal, and free. It was already laid out a little bit in my family. And I think also to grow up here, in an area which is shaped by agriculture. As children, it felt like we were the only entrepreneurs in the village and there was big distrust and skepticism. Sometimes one would say, “If your dad produces in Asia, he is probably an exploiter.” This shaped me a lot and I developed the wish to encounter this mistrust, make it all transparent, and ultimately do it in a good way (interview, CEO).

The CEO’s intrinsic motivation to integrate sustainability into the company’s corporate strategy acknowledges Schneper et al. [122] and Eddleston and Kellermans [165], who argue that top

management personnel are particularly committed to driving sustainability initiatives if they are personally and emotionally attached to the company and aim to promote a positive corporate reputation.

**Originality:** Particularly when it comes to apparel, the desire for uniqueness prevails in people [110]. During our interviews, the head of QCM suggested: “Sustainability stands in close relation to innovation, and because I am restricting or limiting something, I am creating opportunities for something new” (interview, head of QCM). Although the head of QCM focuses on the innovation aspect that comes with sustainability approaches, the statement is closely related to Ozdamar-Ertekin and Atik’s [54] argument that the desire to be unique can act as a driver for T&C companies to produce sustainable alternatives and slow fashion, and resolve the current homogenization of fashion.

#### *4.3. Barriers to the Integration of Sustainability into the Corporate Strategy of a T&C Company*

Our results reveal that there is a wide set of barriers to the integration of sustainability into corporate strategy of a T&C company. As far as we know, our findings extend the barriers identified in the literature by six new ones: limited options and comparability, uncertainties, infrastructure, situation in production countries, data handling, and trade-off between quality and durability. However, the barriers to economic growth and reluctance from well-established brands and top management, which were recognized in the recent literature, were not mentioned in our interviews. The following discusses thoroughly the determined barriers to successful integration of sustainability into corporate strategy of a T&C company identified in interviews with the case company.

**Standards and Regulations:** The current selection of sustainability standards and labels often focuses on one aspect each, e.g., using organically-certified cotton or renouncing a certain hazardous chemical. However, no sustainability label covers the whole life cycle of a product. The head of QCM explained: “A lot of labels exist, but unfortunately none in the world that really includes the whole product lifecycle” (interview, head of QCM). The lack of such a label leads to various open questions about the sustainability of a product: “But what am I doing with it in the usage phase? What am I doing with it at the end of life? Did I think about the ability to repair the product or the durability already in the design phase?” (interview, head of QCM). A T&C company that wants to provide full information on its sustainability approaches for a product eventually has to attach a variety of labels to it in order to cover the full life cycle. The head of QCM highlighted the detriment in doing so: “We deliberated if it makes sense to put five labels on one product. The end consumer will not understand it” (interview, head of QCM). We believe that our findings with regard to standards and regulations as barriers present an additional complication that has not been pinpointed in the recent literature so far: the lack of a label covering the full product life cycle. However, we broach a similar issue as Montiel et al. [27], in the sense that the current selection of sustainability standards, labels, and regulations creates uncertainties. Whereas Montiel et al. [27] focused on the uncertainties for the T&C company itself because of overlapping and competing sustainability standards, we could observe uncertainties for the end consumer. If end consumers do not understand the attached sustainability information, it might hinder them when consciously deciding on a product and ultimately act as a barrier for a T&C company to further pursue its strategical integration of sustainability.

**Consumer Behavior:** As much as certain consumer behavior can drive a T&C company to integrate sustainability into its corporate strategy, it can also be a hindrance. Countless low-priced T&C chains exist, continuously offering bargains, so consumers are educated to purchase low-priced products rather than comparably more expensive sustainable alternatives. VAUDE’s CPO stated: “On the other hand, the customer is currently being taught that everything is cheap and can be thrown away quickly” (interview, CPO). The head of QCM further explained that T&C consumers are not yet willing to pay more for sustainable products: “As long as the Primarks and H&Ms exist and everyone needs a lot of T-shirts, it will be difficult to charge higher prices for them” (interview, head of QCM). Both remarks support authors like Hobson [136], who claims that consumers perceive the affordability of sustainable T&C products as challenging and therefore do not purchase them, as well as Joergens [140] and Bhaduri and Ha-Brookshire [133], who argue that even sustainability-conscious consumers who are

aware of environmental and social issues would rather choose low-priced, fashionable options over more expensive sustainable products. Still, some generic studies, not specifically in the T&C industry, conclude that “consumers are willing to pay substantially more for ethically produced goods than for unethically produced goods” [103] (p. 67). In this regard, White and colleagues [166] present a framework with potential tactics to influence consumer behavior to be more sustainable.

**Limited Options and Comparability:** A limited selection of high-quality sustainable materials and the inability to compare available options emerged from our results as significant barriers to the integration of sustainability into the corporate strategy of T&C companies. Particularly, when it comes to adhesives to join different materials, the logistics manager reported the lack of sustainable options on the market as a great obstacle for the following reason: “All the materials we are using become hazardous waste the moment that glue is put on it, because it blends” (interview, logistics manager). This implies that even if sustainable materials are used, for example for the packaging, they become nonrecyclable as soon as conventional adhesive is applied. T&C companies with global value chains commonly have a wide network of partners ranging over various countries. Distributors and clients often have particular requirements for the packaging of products that still make it impossible to renounce plastic materials and implement more sustainable solutions (interview, logistics manager). However, the CPO reported noticing a positive development, that an increased number of sub-suppliers started to engage in sustainability approaches and could therefore offer sustainable options. Still, he confirmed the difficulties mentioned above and added that it is still challenging to detect the full available range and options of sustainable sub-suppliers, suppliers, producers, and materials on the market (interview, CPO).

**Uncertainties:** In our findings, we identified uncertainties about the future of the T&C industry. The CPO focused on the shift from physical retail to online retail and called attention to the uncertainty over where the price spiral of T&C products is going: “If the price spiral keeps on going and I am taught that there are only red prices and that the ones buying at normal prices are stupid, it will be increasingly difficult for us to position our sustainable products” (interview, CPO). These uncertainties stand in close relation to the integration of sustainability, as it could become increasingly difficult in the future to highlight the advantages of sustainable T&C products online and position them in a potentially growing low-price market. Therefore, these uncertainties act as a barrier to integrating sustainability into corporate strategy of a T&C company.

**Infrastructure:** As presented above, the case company has a global value chain and primarily produces in Asia. Current infrastructure solutions between Asia and Europe pose difficulties in transporting products from the production facilities to the headquarters in the most environmentally-friendly way: “The difficulty we have is that we produce in Asia and we somehow have to get the products here” (interview, logistics manager). The logistics manager described the transportation method that is currently the most sustainable and affordable for the case company: “The current mathematically cleanest way is by ship. On a ship they can put around 20,000 to 24,000 containers and plenty of T-shirts and jackets fit inside” (interview, logistics manager). When asked if transportation via railway would be even more environmentally-friendly, he answered: “In regard to CO<sub>2</sub>, for sure. The run time is also shorter. In comparison to sea freight, we save 10 days” (interview, logistics manager). However, the current railway infrastructure is not connected to Vietnam, where 67.7% of the company’s products are produced, as the logistics manager explained: “The third alternative to aviation and sea freight is rail transportation, but the current standard departures are still from China and we produce relatively little there, only tents and shoes” (interview, logistics manager). He added another obstacle: “The train cannot carry 20,000 containers; I think maximum only 400. Therefore, it is more expensive. Normally we pay double or almost triple than for a sea freight. We only do that if the order or products permit it” (interview, logistics manager). Accordingly, the company is dependent on ships to transport their products, which includes long transportation times and certain risks: “During the import, the long transportation time is a big barrier . . . . The longer the way, the higher the risk”

(interview, logistics manager). Nevertheless, the logistics manager reported potential advancements in terms of railway transportation.

We further observed that due to the external environment during transportation, plastic packaging is still needed to protect the products: “We are forced to use synthetic materials, because on the way from Asia to here there is air humidity on-site, humidity on the way, and pollution here with very little cardboard dust” (interview, logistics manager).

Overall, the current infrastructure between Asia and Europe has poorly connected railways, comparably high costs for railway transportation, and unfavorable external conditions during transport. Although potential advancements are expected, these circumstances require T&C companies to put much effort into finding sustainable solutions, creating a key barrier to the integration of sustainability into its corporate strategy.

**Situation in Production Countries:** Closely related to the infrastructure is a set of challenges in the production countries themselves. Unstable political situations in the typical Asian T&C production countries make it risky to transport products through them (interview, logistics manager). Moreover, the high proportion of migrant workers in the industry presents new challenges for T&C companies, “like having warning signs in the language that the people understand, trainings for the use of chemicals in the national languages so that the people also know what they are doing” (interview, head of QCM). The vendor manager added the issue of working overtime, which sometimes is voluntary and needs to be carefully analyzed (interview, vendor manager). She further explained that controlling bodies of work laws rarely exist in those countries, which means the task of assuring compliance with laws falls to the producing brands (interview, vendor manager). Our findings show that in order to assure that partners in the typical Asian production countries have a sustainable approach, T&C companies have to do fundamental work such as controlling the compliance with work laws, which acts as a barrier to the full integration of sustainability into their corporate strategy.

**Sustainability as a Business Case:** We found that one of the key barriers to the integration of sustainability into the corporate strategy of a T&C company is balancing ecological and social aspects with the economic aspect, potentially even leading to the lack of a business case. The logistics manager described the current situation: “We mostly have to simply consider the cost aspect. We are a business enterprise, and if there are no outcomes, we cannot contribute to the topic sustainability for long anymore” (interview, logistics manager). He further stressed the particular division between ecological and economic aspects: “We could for sure produce everything in Germany, but then the prices would be so high that no one will buy anything anymore. And how does that help? Ecology-wise, you are gone then” (interview, logistics manager). The CPO confirmed this: “These are certainly the challenges: How can I maybe get the more sustainable fabric, the fairer working conditions, but still keep the price on a reasonable market price level?” (interview, CPO). These observations support Renukappa et al. [13], who argue that integrating sustainability into the corporate strategy can be expensive and even cause negative competitiveness in the industry in the short term. We further found that a strategic sustainable orientation and a competitive position can be difficult to maintain if product prices eventually have to rise because of higher costs and efforts toward sustainability approaches: “It is not that we are suddenly on the organic market and we can demand higher prices, but we are still in the same competition with the others.” The CEO added, “if you take this path as the only one, it entails that we have much higher costs and efforts” (interview, CEO). A similar view is shared by the CPO.

One of the sustainability goals of the case company is “that in five years we will only have recycled or bio-based products. But there will be a lot of innovation effort and high costs needed” (interview, CEO). This reveals again that sustainability initiatives and innovations often involve a lot of effort and high costs. Koplin et al. [129] support this view with the argument that compared to conventional materials, sustainable alternatives are often more expensive and can even raise a product’s total cost. Yet, as also mentioned above, it is not possible to translate the additional effort and cost to the end consumer. The CEO reported: “We have problems with the margins, because we cannot pass the price” (interview, CEO). Additionally, as the head of QCM put it: “Sustainability costs money.”



Therefore, T&C companies have to find different ways to compensate for them: “You still have a lot of conflicting goals inside the company: Here, I want a margin increase but also transparency, and there, the prices increase for raw materials, chemicals, etc. That has to be compensated somehow” (interview, head of QCM).

Overall, we could observe that the financial aspect of integrating sustainability into the corporate strategy is still difficult to manage and it is a continuous process to overcome this barrier.

**Value Chain Management:** As covered in earlier sections, due to the often manual and simple work approaches, the T&C industry is mainly settled in low-cost countries. Therefore, certain risks are likely to prevail in its value chains (interview, CEO). The head of QCM explained the difficulty in convincing partners in the value chain to comply with their sustainability requirements: “We are a medium-sized family-owned company and we often have minimum quantity surcharges at the material suppliers, but at the same time the highest requirements for environmental and social standards” (interview, head of QCM). This argument supports the observation of Todeschini et al. [55] and Oelze [23] that suppliers in the T&C industry often lack an intrinsic motivation and are unwilling to integrate sustainability standards into their business. It becomes even more difficult to convince partners to comply with certain sustainability standards if other brands working with them do not demand the same: “But then there are also other producers, and we are the only ones working with them who care about it. There we have to provide fundamental work and convince them why it is worthwhile to join” (interview, vendor manager). The same difficulties could be observed on the retail side: “Others may have 100 suppliers, and if there is one coming and starts to act crazy, they find it too much effort and are not interested” (interview, logistics manager). In addition, a lot of producers in Europe simply do not have the knowledge or capability to comply with the demands of sustainability standards (interview, logistics manager). Our results show that it is especially difficult to find partners in the value chain who are willing to comply with sustainability requirements if one is a comparably small brand and/or other brands working with the partners do not demand the same. Moreover, not all producers have the capability to adapt to certain sustainability standards. Both make it challenging for a T&C brand to ensure compliance with sustainability standards in the whole value chain.

**Data Handling:** The handling of complex data for sustainability initiatives, approaches, and practices was identified to be challenging for a T&C company that integrates sustainability into its corporate strategy. The head of QCM reported: “We have a huge amount of data. How do I get the data together that come from different systems or sources that are partly not certified?” (interview, head of QCM). We observed that there are still uncertainties as to how to efficiently make use of sustainability data and create greater value for end consumers.

**Trade-off between Quality and Durability:** Furthermore, we detected that not all sustainability measures benefit the quality of a product. Sustainable material innovations can, at times harm the quality aspect: “Sometimes it has the disadvantage that the performance is not as good as before” (interview, head of QCM). The head of QCM highlighted the importance of ensuring that the sustainability and quality of a product are in accordance: “It is a field of tension. They have to tag along with each other, and that is why I also sit in the CSR team” (interview, head of QCM). Especially when it comes to the long-term durability of certain sustainable materials, there is a lack of experience and uncertainties prevail: “Maybe I am saving water and chemicals, but the product only lasts 2 years instead of, like before, 10 years” (interview, head of QCM). Accordingly, a lot of time and resources have to be invested to ensure the balance of sustainability and quality (interview, head of QCM). This tension field creates a need for efforts to ensure that both the sustainability and quality of products accord with the highest possible standards, which presents a barrier for T&C companies to integrate sustainability into their corporate strategy. This sort of tension has been identified in the literature. As noted by Pal and Gander [167] (p. 258), “Attempting to increase the durability of apparel (and thus decrease consumption) can actually work against recycling as the use of chemical treatments and blends that it can involve makes recovering the materials more difficult.”

The barriers identified in the case study are of an institutional and organizational nature only. On the other hand, several barriers identified in the literature were not found in this case, while our findings extend the barriers by shedding light on six new ones: limited options and comparability, uncertainties, infrastructure, situation in production countries, data handling, and trade-off between quality and durability. In the next section, the conclusions are presented.

## 5. Conclusions

### 5.1. Main Conclusions and Contributions to the Literature

This paper contributes to theory and practice of integrating sustainability into the corporate strategy of a T&C company. By looking at different levels of analysis of drivers of and barriers to integrating sustainability into corporate strategy, we contribute to the literature on both sustainability and strategy, but mainly to the intersection of the two fields [8]. The focus on a T&C company is particularly relevant considering the environmental and societal impact of this sector. The extended value chains of T&C companies have become increasingly complex, so “being aware and implementing sustainable practices to their supply chains become inevitable practices” [146] (p. 6). With activities that are often dispersed, physical distance from facilities or from third parties can make it particularly challenging to control and ensure accountability, as shown in this case. The different drivers and barriers at the various levels can foster or hinder the path toward integrating sustainability into corporate strategy. From the institutional level (e.g., standards and certifications, such as ISO 14001 and SA 8000) to the organizational level (e.g., sustainability as a business case) to the individual level (e.g., top management), all factors play a role. As suggested by Dyllick and Muff [10], if truly sustainable firms are to boost their impact, they need to take part on different levels of action.

Our research is grounded in a case study analysis of VAUDE, a European outdoor outfitter that has sustainability deeply integrated into its corporate strategy and has been recognized as exemplary. Our analysis, including the conducting of interviews, examination of the sustainability report and website, and observations in the field, is in accordance with VAUDE’s excellent sustainable reputation and suggests that sustainability is deeply integrated into its corporate strategy. Therefore, our results are original and are intended to provide a better understanding of the aspects driving a European T&C company to integrate sustainability into its corporate strategy, as well as hindering factors. The case company is successful with its approach of fully integrating sustainability into all relevant processes, and the market is covering the additional effort and cost to a certain extent through higher sales prices accepted by customers. However, one of its main obstacles is still the inability or unwillingness of many customers to pay extra for sustainable products. There is perhaps a minimum standard that all customers expect from companies, e.g., to not undermine basic labor rights, but not all customer segments are alike and the situation for other companies can be different from the case company. Other groups of customers simply do not accept a price mark-up for special sustainable behavior above the minimum expectations. Even if the strategic approach of integrating sustainability is also a result of market analysis and developments, there is an ever-stronger call for companies to change the way they are running their businesses. As noted by Twomey and colleagues [168] (p. 55), incorporating values that are aligned with sustainability into corporate strategies and processes “will require systemic and paradigm-shifting change.” Hopefully, in the outset of the COVID-19 pandemic, there may be an opportunity for a paradigm change [169] by increasing awareness and consciousness throughout society [170].

Our results extend current insights into the highly global and competitive T&C industry and align with previous research focusing on drivers of and barriers to the integration of sustainability into corporate strategy of T&C companies. We identified a total of 6 drivers and 10 barriers; of those, 6 barriers had not yet been classified in the existing literature, and we also determined sustainability as a business case as a driver for the T&C industry. The existing research only identified this aspect as a cross-industry aspect, which certainly involves the T&C industry, but we believe that no specific

study of the T&C industry exists that includes this aspect. The topics that were detected in the recent literature but could not be confirmed in our analysis are standards and regulations and public pressure as drivers, and economic growth, reluctance by well-established brands, and top management as barriers. Furthermore, our findings show that drivers of the integration of sustainability depend on the collective coherence of all three levels of analysis (institutional, organizational, and individual). The determined barriers are of an institutional and organizational nature only.

Taking into consideration the above presented institutional theory and stakeholder theory as theoretical frameworks to explain why companies deal with sustainability and, more specifically, decide to integrate sustainability into their corporate strategy, our results stand in accordance [22,171,172]. Based on our case study results, we identified an institutional level of analysis for both drivers and barriers. It reveals once more that in order to earn the legitimacy to survive in the market, sustainable T&C companies are urged to conform to the institutional environment, comprising normative, regulatory, and cognitive elements. Moreover, our results align with the assumption that stakeholders can directly and indirectly influence the sustainability practices of a company [84]. We identified that consumers are especially influential in driving a T&C company to integrate sustainability into its corporate strategy or hindering it from doing so, and can largely influence the success of the integration. Furthermore, our results confirm that in order to create value by integrating sustainability, T&C companies have to address a wider set of stakeholders than conventional business models suggest. The case company has a higher growth rate than the European average in its market. This shows that addressing additional stakeholders, like those protecting the environment and local communities, is closely related to a positive brand reputation and higher consumer trust and purchases, and may ultimately lead to a positive business case.

Our findings present specific drivers of the integration of sustainability into corporate strategy of a T&C company. An increasing consumer awareness of ecological and social issues in the T&C industry leads to a higher demand for sustainable brands and products, resulting in more brands meeting the demand. A fully integrated sustainability approach can therefore create competitive advantage. We even argue that if a T&C company does not address sustainability in its corporate strategy, it may create a competitive disadvantage. On top of that, sustainability initiatives can positively influence a brand's corporate reputation, ultimately leading to a positive business case and enhancing the willingness of partners to cooperate and collectively develop new sustainable approaches. Additionally, top management's intrinsic motivation for and deep commitment to sustainability is a significant aspect that drives T&C companies to fully integrate sustainability. The close relationship between sustainability and innovation allows companies to develop sustainable and innovative alternatives that meet the human desire for uniqueness, which is especially prevalent in the T&C industry. Looking at the progress VAUDE has made toward sustainability with the change of top management to the second generation, one can relate it to the evolutionary path toward becoming closer to a true sustainability business [10] after decades of business as usual. Still, this evolutionary path toward sustainability is not free of challenges.

Apart from these drivers, we identified the following barriers: The current extensive selection of sustainability standards and regulations are confusing for end consumers, hindering them from choosing sustainable products and eventually imposing a burden on T&C companies to continue pursuing the integration of sustainability into their corporate strategy. At present, low-price T&C products represent the majority of the market, creating the perception for consumers that a cheap purchase is a good purchase and leaving the sustainability aspect out of consideration. Accordingly, T&C companies cannot yet translate the greater effort and higher cost of sustainability practices to the products, which can make it challenging to achieve a positive profit margin. Although improvements can be observed, it is still difficult to explore the whole range of sustainable material options and conduct comparative analyses. For some materials like adhesives, there are no adequate sustainable options yet, which is especially problematic, as even sustainable materials become nonrecyclable upon contact. Therefore, strong research efforts are required to recognize the full selection of innovative

sustainable material alternatives on the market. As T&C brands with global value chains have wide networks of partners, different requirements from them, e.g., specific packaging instructions, can slow down the process of establishing innovative sustainable solutions. The future of physical T&C retail stores and the development of the price spiral of products are uncertain, which is closely related to the decision to integrate sustainability, as it could become increasingly difficult to highlight one's sustainability argument efficiently online and position sustainable products in a potentially growing low-price market.

We further identified challenges connected to the T&C industry's typical production countries, which are mainly located in Asia. The infrastructure between Asia and Europe does not provide enough affordable sustainable transportation options, and external conditions like high air humidity during transport make it necessary to use unsustainable packaging like plastic for transported products. Unstable political conditions are common in typical T&C production countries and other countries on the transportation route to Europe, posing a risk when passing through. Moreover, an increasing number of migrant workers who do not speak the language of a production country are being employed in the industry. Thus, it is challenging for T&C brands to assess special cultural situations at their partners' production facilities and to assure that all workers are well-informed about safe and fair working conditions in a language they understand. The highly manual work approach in the industry comes with certain social risks for both local and migrant workers, generally demanding a complex approach by companies to guarantee fair working conditions in the value chain. Often, it is challenging to convince partners in the value chain to comply with certain sustainability requirements, especially for T&C brands that have only limited influence because of their size or other brands producing at the same facility that do not demand sustainable approaches. In addition, sustainability initiatives are deeply connected with effort and cost, which still cannot be translated to the end consumer. Thus, achieving a balance between social, ecological, and economic factors is still seen as problematic for T&C companies and can eventually even lead to negative competitiveness in the market. This is where innovative business models could play a role, such as circular business models [55,173]. As noted by Pal and Gander [167] (p. 253), a way to create and capture value throughout the process is to rethink the business model in order to "look at the flow of materials in the fashion system and shift the sector's attitude from the largely linear model of production, sale, use and disposal to a more circular model of reuse and reintegration." Despite the virtues of a circular economy [174], implementing a process toward achieving circularity faces barriers as well [89,175]. Jia et al. [176] conducted a systematic literature review on the circular economy in the T&C industry, presenting not only drivers and barriers, but also practices and indicators of performance that will certainly enlighten future work. From the data we also found that integrating sustainability into a T&C company brings a great amount of complex data. The handling is observed to be challenging and there are uncertainties as to how to efficiently make use of it to create added value for the end consumer. Finally, there is a tension field between sustainability and quality, as not all sustainable materials benefit the quality of a product. Thereby, a T&C company has to make great efforts in testing to ensure that both aspects accord with the highest possible standards.

## 5.2. Limitations and Future Research

Regardless of our case study results, limitations have to be noted. First, the limitations of generalizing from a single case study are known and documented, even if it can be considered as an exemplar [159]. Second, this research only makes use of a qualitative research method with a limited number of participants. Third, VAUDE is family-owned, meaning that it is not obligated to maximize shareholder returns and can freely pursue sustainability approaches without necessarily maximizing profit. Therefore, it is difficult to compare to public-owned companies. Finally, the research took a cross-sectional rather than longitudinal approach.

Future research could conduct multiple case study analyses and make use of mixed research methods. This study purposefully focused on European T&C companies, but it could be extended by

conducting a cross-cultural comparison of the sample or a longitudinal study of companies that have integrated sustainability into their corporate strategy. According to Harmon and Fairfield [177] (p. 221), “Corporate sustainability motives, practices, and benefits do vary significantly across geographic contexts.” Still, the authors continue, “organization size and strategy of operating as a national, multi-local, or global firm make an even bigger difference” [177] (p. 221). Hence, future research with cross-case studies could further explore different patterns for various combinations of geographies and global strategies. One such example is a study of the T&C industry comparing Brazil and China, where differences were found [178]. Finally, future studies could also include other perspectives from external stakeholders.

### 5.3. Managerial Implications

Although we are aware of the limitations of this paper, it provides clear case study results and extensive insights into the current status of drivers of and barriers to the integration of sustainability into the corporate strategy of T&C companies. VAUDE’s pioneering strategic sustainability approach in Europe and particularly in the global T&C industry offers strong support for our results. The findings present significant suggestions for other companies that seek to integrate sustainability into their corporate strategy and for the industry to create a sustainability-friendly environment to drive more companies to become sustainable. It further supports T&C companies to identify potential barriers and how to overcome them. Our results reveal that it only works if sustainability is strongly integrated into the corporate strategy and deeply anchored in all departments and daily tasks of a T&C company.

**Author Contributions:** Writing—original draft preparation and fieldwork, J.P.; writing—review and editing, and supervision throughout the whole process of research development, A.S. Main decisions in terms of theoretical background, methodology, analysis, discussion, and conclusions were taken together. All authors have read and agreed to the published version of the manuscript.

**Funding:** This work was supported by Fundação para a Ciência e a Tecnologia, grant no. UIDB/00315/2020.

**Acknowledgments:** A special thank you to VAUDE employees for their collaboration with the study. Any mistakes remain ours.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. Madhav, S.; Ahamad, A.; Singh, P.; Mishra, P.K. A review of textile industry: Wet processing, environmental impacts, and effluent treatment methods. *Environ. Qual. Manag.* **2018**, *27*, 31–41. [\[CrossRef\]](#)
2. Allwood, J.M.; Laursen, S.E.; de Rodriguez, C.M.; Bocken, N.M. Well dressed?: The present and future sustainability of clothing and textiles in the United Kingdom. *J. Home Econ. Inst. Aust.* **2015**, *22*, 42.
3. Boström, M.; Micheletti, M. Introducing the sustainability challenge of textiles and clothing. *J. Consum. Policy* **2016**, *39*, 367–375. [\[CrossRef\]](#)
4. Seara, J.; Boger, S.; Eder-Hansen, J.; Chalmer, C. *Pulse of the Fashion Industry 2017*; Global Fashion Agenda & The Boston Consulting Group: Copenhagen, Denmark, 2017.
5. Pedersen, E.R.G.; Gwozdz, W. From resistance to opportunity-seeking: Strategic responses to institutional pressures for corporate social responsibility in the Nordic fashion industry. *J. Bus. Ethics* **2014**, *119*, 245–264. [\[CrossRef\]](#)
6. Shen, B.; Li, Q.; Dong, C.; Perry, P. Sustainability issues in textile and apparel supply chains. *Sustainability* **2017**, *9*, 1592. [\[CrossRef\]](#)
7. Goworek, H. Social and environmental sustainability in the clothing industry: A case study of a fair trade retailer. *Soc. Responsib. J.* **2011**, *7*, 74–86. [\[CrossRef\]](#)
8. Bansal, P.; Song, H.-C. Similar but not the same: Differentiating corporate sustainability from corporate responsibility. *Acad. Manag. Ann.* **2017**, *11*, 105–149. [\[CrossRef\]](#)
9. Leibowitz, D. *Guide to Sustainable Strategies*; CFDA: New York, NY, USA, 2019.
10. Dyllick, T.; Muff, K. Clarifying the meaning of sustainable business: Introducing a typology from business-as-usual to true business sustainability. *Organ. Environ.* **2015**, *29*, 156–174. [\[CrossRef\]](#)



11. United Nations. *Our Common Future—Brundtland Report*; Oxford University Press: Oxford, UK, 1987.
12. Elkington, J. *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*; Capstone: Oxford, UK, 1997.
13. Renukappa, S.; Egbu, C.; Akintoye, A.; Suresh, S. Drivers for embedding sustainability initiatives within selected UK industrial sectors. *J. Int. Real Estate Constr. Stud.* **2013**, *3*, 51–72.
14. Wilson, J.P. The triple bottom line: Undertaking an economic, social, and environmental retail sustainability strategy. *Int. J. Retail Distrib. Manag.* **2015**, *43*, 432–447. [[CrossRef](#)]
15. Slaper, T.F.; Hall, T.J. The triple bottom line: What is it and how does it work? *Indiana Bus. Rev.* **2011**, *86*, 4–8.
16. Sarkar, C. “Beyond the Triple Bottom Line”—An interview with John Elkington. *The Marketing Journal*, 25 October 2018.
17. Strand, R.; Freeman, R.E.; Hockerts, K. Corporate social responsibility and sustainability in Scandinavia: An overview. *J. Bus. Ethics* **2015**, *127*, 1–15. [[CrossRef](#)]
18. Kiron, D.; Kruschwitz, N.; Haanaes, K.; Reeves, M.; Fuisz-Kehrbach, S.-K.; Kell, G. Joining forces: Collaboration and leadership for sustainability. *Mit Sloan Manag. Rev.* **2015**, *56*, 1–31.
19. Andrews, K.R. *The Concept of Corporate Strategy*; Dow-Jones-Irwin: Homewood, IL, USA, 1971.
20. Cici, C.; D’Isanto, D. Integrating sustainability into core business. *Symphonya* **2017**, *1*, 50–65. [[CrossRef](#)]
21. Murthy, V.P. Integrating corporate sustainability and strategy for business performance. *World J. Entrep. Manag. Sustain. Dev.* **2012**, *8*, 5–17. [[CrossRef](#)]
22. Rezaee, Z. Business sustainability research: A theoretical and integrated perspective. *J. Account. Lit.* **2016**, *36*, 48–64. [[CrossRef](#)]
23. Oelze, N. Sustainable supply chain management implementation—Enablers and barriers in the textile industry. *Sustainability* **2017**, *9*, 1435. [[CrossRef](#)]
24. Giunipero, L.C.; Hooker, R.E.; Denslow, D. Purchasing and supply management sustainability: Drivers and barriers. *J. Purch. Supply Manag.* **2012**, *18*, 258–269. [[CrossRef](#)]
25. Eccles, R.G.; Ioannou, I.; Serafeim, G. The impact of corporate sustainability on organizational processes and performance. *Manage. Sci.* **2014**, *60*, 2835–2857. [[CrossRef](#)]
26. Fonseca, L.M. Strategic drivers for implementing sustainability programs in portuguese organizations—Let’s listen to Aristotle: From triple to quadruple bottom line. *Sustainability* **2015**, *8*, 136–142. [[CrossRef](#)]
27. Montiel, I.; Christmann, P.; Zink, T. The effect of sustainability standard uncertainty on certification decisions of firms in emerging economies. *J. Bus. Ethics* **2019**, *154*, 667–681. [[CrossRef](#)]
28. Mathiyazhagan, K.; Govindan, K.; NoorulHaq, A.; Geng, Y. An ISM approach for the barrier analysis in implementing green supply chain management. *J. Clean. Prod.* **2013**, *47*, 283–297. [[CrossRef](#)]
29. Desore, A.; Narula, S.A. An overview on corporate response towards sustainability issues in textile industry. *Environ. Dev. Sustain.* **2018**, *20*, 1439–1459. [[CrossRef](#)]
30. Jones, P.; Hillier, D.; Comfort, D. Sustainability in the hospitality industry: Some personal reflections on corporate challenges and research agendas. *Int. J. Contemp. Hosp. Manag.* **2016**, *28*, 36–67. [[CrossRef](#)]
31. Kasim, A. Towards a wider adoption of environmental responsibility in the hotel sector. *Int. J. Hosp. Tour. Adm.* **2007**, *8*, 25–49. [[CrossRef](#)]
32. Shanti, J. A study on environmental sustainability practices of star hotels in Bangalore. *Asian J. Bus. Ethics* **2016**, *5*, 185–194. [[CrossRef](#)]
33. Wan, P.Y.K.; Chan, J.S.H.; Huang, W.H.L. Environmental awareness, initiatives and performance in the hotel industry of Macau. *Tour. Rev.* **2017**, *72*, 87–103. [[CrossRef](#)]
34. Dodds, R.; Graci, S.; Ko, S.; Walker, L. What drives environmental sustainability in the New Zealand wine industry?: An examination of driving factors and practices. *Int. J. Wine Bus. Res.* **2013**, *25*, 164–184. [[CrossRef](#)]
35. Emamisaheh, K.; Rahmani, K. Sustainable supply chain in food industries: Drivers and strategic sustainability orientation. *Cogent Bus. Manag.* **2017**, *4*, 1345296. [[CrossRef](#)]
36. Govindan, K. Sustainable consumption and production in the food supply chain: A conceptual framework. *Int. J. Prod. Econ.* **2018**, *195*, 419–431. [[CrossRef](#)]
37. Chen, F. Sustainable Innovation in the Cosmetic Industry—Obstacles, Contributing Factors, and Strategies. Master’s Thesis, University of Minnesota, Duluth, MN, USA, October 2016.
38. Connelly, B.D. The Organic Beauty Industry: A Gendered Economic Review. Master’s Thesis, University of Denver, Denver, CO, USA, June 2013.

39. Beard, N.D. The Branding of Ethical Fashion and the Consumer: A Luxury Niche or Mass-market Reality? *Fash. Theory* **2008**, *12*, 447–467. [\[CrossRef\]](#)
40. Hopkins, M.S.; Townend, A.; Khayat, Z.; Balagopal, B.; Reeves, M.; Berns, M. The business of sustainability: What it means to managers now. *MIT Sloan Manag. Rev.* **2009**, *51*, 20–26.
41. Thiry, M.C. Staying alive: Making textiles sustainable. *AATCC Rev.* **2011**, *11*, 26–32.
42. Belz, F.; Peattie, K. *Sustainability Marketing: A Global Perspective*, 3rd ed.; John Wiley & Sons: West Sussex, UK, 2011.
43. Dickson, M.A. Personal values, beliefs, knowledge, and attitudes relating to intentions to purchase apparel from socially responsible businesses. *Cloth. Text. Res. J.* **2000**, *18*, 19–30. [\[CrossRef\]](#)
44. Eder-Hansen, J.; Kryger, J.; Morris, J.; Sisco, C.; Watson, D.; Kiørboe, N.; Petersen, S.D.; Larsen, K.B.; Burchardi, I. *The NICE Consumer. Research Summary and Discussion Paper toward a Framework for Sustainable Fashion Consumption in the EU*; Danish Fashion Institute: Copenhagen, Denmark, 2012.
45. Gardetti, M.A.; Torres, A.L. *Sustainability in Fashion and Textiles. Values, Design, Production and Consumption*; Routledge: New York, NY, USA, 2017.
46. Hill, J.; Lee, H. Young Generation Y consumers' perceptions of sustainability in the apparel industry. *J. Fash. Mark. Manag. Int. J.* **2012**, *16*, 477–491. [\[CrossRef\]](#)
47. Hutter, L.; Capozucca, P.; Nayyar, S. *A Roadmap for Sustainable Consumption*; Deloitte: London, UK, 2010.
48. Hartley, M.; Gopaul, B.; Sagintayeva, A.; Apergenova, R. Learning autonomy: Higher education reform in Kazakhstan. *High. Educ.* **2016**, *72*, 277–289. [\[CrossRef\]](#)
49. Thøgersen, J. How may consumer policy empower consumers for sustainable lifestyles? *J. Consum. Policy* **2005**, *28*, 143–177. [\[CrossRef\]](#)
50. Vermeir, I.; Verbeke, W. Sustainable food consumption: Exploring the consumer “attitude–behavioral intention” gap. *J. Agric. Environ. Ethics* **2006**, *19*, 169–194. [\[CrossRef\]](#)
51. Diabat, A.; Kannan, D.; Mathiyazhagan, K. Analysis of enablers for implementation of sustainable supply chain management—A textile case. *J. Clean. Prod.* **2014**, *83*, 391–403. [\[CrossRef\]](#)
52. Ganesan, S.; George, M.; Jap, S.; Palmatier, R.W.; Weitz, B. Supply chain management and retailer performance: Emerging trends, issues, and implications for research and practice. *J. Retail.* **2009**, *85*, 84–94. [\[CrossRef\]](#)
53. Pedersen, E.R.G.; Andersen, K.R. Sustainability innovators and anchor draggers: A global expert study on sustainable fashion. *J. Fash. Mark. Manag.* **2015**, *19*, 315–327. [\[CrossRef\]](#)
54. Ozdamar-Ertekin, Z.; Atik, D. Sustainable markets: Motivating factors, barriers, and remedies for mobilization of slow fashion. *J. Macromarketing* **2015**, *35*, 53–69. [\[CrossRef\]](#)
55. Todeschini, B.V.; Cortimiglia, M.N.; Callegaro-de-Menezes, D.; Ghezzi, A. Innovative and sustainable business models in the fashion industry: Entrepreneurial drivers, opportunities, and challenges. *Bus. Horiz.* **2017**, *60*, 759–770. [\[CrossRef\]](#)
56. Aguinis, H.; Glavas, A. What we know and don't know about corporate social responsibility: A review and research agenda. *J. Manage.* **2012**, *38*, 932–968. [\[CrossRef\]](#)
57. VAUDE. *2018 Sustainability Report*; Vaude: Tettnang, Germany, 2018.
58. Petrini, M.; Pozzebon, M. Integrating sustainability into business practices: Learning from Brazilian firms. *BAR - Brazilian Adm. Rev.* **2010**, *7*, 362–378. [\[CrossRef\]](#)
59. Suriyankietkaew, S.; Petison, P. A retrospective and foresight: Bibliometric review of international research on strategic management for sustainability, 1991–2019. *Sustainability* **2020**, *12*, 91. [\[CrossRef\]](#)
60. Engert, S.; Rauter, R.; Baumgartner, R.J. Exploring the integration of corporate sustainability into strategic management: A literature review. *J. Clean. Prod.* **2016**, *112*, 2833–2850. [\[CrossRef\]](#)
61. Porter, M.E.; Kramer, M.R. The link between competitive advantage and corporate social responsibility. *Harv. Bus. Rev.* **2006**, *84*, 78–92.
62. Kiron, D.; Kruschwitz, N.; Reeves, M.; Goh, E. The benefits of sustainability-driven innovation. *MIT Sloan Manag. Rev.* **2013**, *54*, 69–73.
63. Stead, J.G.; Stead, W.E. The coevolution of sustainable strategic management in the global marketplace. *Organ. Environ.* **2013**, *26*, 162–183. [\[CrossRef\]](#)
64. Bonn, I.; Fisher, J. Sustainability: The missing ingredient in strategy. *J. Bus. Strategy* **2011**, *32*, 5–14. [\[CrossRef\]](#)
65. Folmer, H.; Tietenberg, T.H. *The International Yearbook of Environmental and Resource Economics 2005/2006: A Survey of Current Issues*; Edward Elgar Publishing: Cheltenham, UK, 2005.
66. Hosmer, L.T. Strategic planning as if ethics mattered. *Strateg. Manag. J.* **1994**, *15*, 17–34. [\[CrossRef\]](#)

67. DiMaggio, P.J.; Powell, W.W. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *Am. Sociol. Rev.* **1983**, *48*, 147–160. [\[CrossRef\]](#)
68. Connelly, B.L.; Ketchen, D.J.; Slater, S.F. Toward a “theoretical toolbox” for sustainability research in marketing. *J. Acad. Mark. Sci.* **2011**, *39*, 86–100. [\[CrossRef\]](#)
69. Muthuri, J.N.; Gilbert, V. An institutional analysis of corporate social responsibility in Kenya. *J. Bus. Ethics* **2011**, *98*, 467–483. [\[CrossRef\]](#)
70. Scott, W.R. *Institutions and Organizations: Ideas and Interests*, 3rd ed.; Sage Publications, Inc: Los Angeles, CA, USA, 2008.
71. Dawkins, C.; Ngunjiri, F.W. Corporate social responsibility reporting in South Africa: A descriptive and comparative analysis. *J. Bus. Commun.* **2008**, *45*, 286–307. [\[CrossRef\]](#)
72. Perez-Batres, L.; Miller, V.; Pisani, M. CSR, sustainability and the meaning of global reporting for Latin American corporations. *J. Bus. Ethics* **2010**, *91*, 193–209. [\[CrossRef\]](#)
73. Delmas, M.A.; Montes-Sancho, M.J. An institutional perspective on the diffusion of international management system standards: The case of the environmental management standard ISO 14001. *Bus. Ethics Q.* **2011**, *21*, 103–132. [\[CrossRef\]](#)
74. Henriques, I.; Sadosky, P. The determinants of an environmentally responsive firm: An empirical approach. *J. Environ. Econ. Manage.* **1996**, *30*, 381–395. [\[CrossRef\]](#)
75. Campbell, J.L. Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Acad. Manag. Acad. Manag. Rev.* **2007**, *32*, 946–967. [\[CrossRef\]](#)
76. Freeman, R.E. *Strategic Management: A Stakeholder Approach*; Pitman: Boston, MA, USA, 1984.
77. Spence, L.J.; Coles, A.-M.; Harris, L. The forgotten stakeholder? Ethics and social responsibility in relation to competitors. *Bus. Soc. Rev.* **2001**, *106*, 331–352. [\[CrossRef\]](#)
78. Freeman, R.E.; Wicks, A.C.; Parmar, B. Stakeholder theory and “The corporate objective revisited”. *Organ. Sci.* **2004**, *15*, 364–369. [\[CrossRef\]](#)
79. Mitchell, R.K.; Agle, B.R.; Wood, D.J. Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Acad. Manag. Rev.* **1997**, *22*, 853–886. [\[CrossRef\]](#)
80. Frooman, J. Stakeholder influence strategies. *Acad. Manag. Rev.* **1999**, *24*, 191–205. [\[CrossRef\]](#)
81. Pfeffer, J.; Salancik, G.R. *The External Control of Organizations: A Resource Dependence Perspective*; Stanford Business Books: Redwood City, CA, USA, 2003.
82. Cooper, S.; Crowther, D.; Davies, M.; Davis, E. *Shareholder or Stakeholder Value: The Development of Indicators for the Control and Measurement of Performance*; CIMA: London, UK, 2001.
83. Neville, B.; Menguc, B. Stakeholder multiplicity: Toward an understanding of the interactions between stakeholders. *J. Bus. Ethics* **2006**, *66*, 377–391. [\[CrossRef\]](#)
84. Sharma, S.; Henriques, I. Stakeholder influences on sustainability practices in the Canadian forest products industry. *Strateg. Manag. J.* **2005**, *26*, 159–180. [\[CrossRef\]](#)
85. Schaltegger, S.; Hansen, E.G.; Lüdeke-Freund, F. Business models for sustainability: Origins, present research, and future avenues. *Organ. Environ.* **2016**, *29*, 3–10. [\[CrossRef\]](#)
86. Greenpeace. *Dirty Laundry. Unravelling the Corporate Connections to Toxic Water Pollution in China*; Greenpeace: Amsterdam, The Netherlands, 2011.
87. Montabon, F.; Sroufe, R.; Narasimhan, R. An examination of corporate reporting, environmental management practices and firm performance. *J. Oper. Manag.* **2007**, *25*, 998–1014. [\[CrossRef\]](#)
88. Handfield, R.; Walton, S.V.; Sroufe, R.; Melnyk, S.A. Applying environmental criteria to supplier assessment: A study in the application of the Analytical Hierarchy Process. *Eur. J. Oper. Res.* **2002**, *141*, 70–87. [\[CrossRef\]](#)
89. Fonseca, L.; Domingues, J.; Pereira, M.; Martins, F.; Zimon, D. Assessment of circular economy within portuguese organizations. *Sustainability* **2018**, *10*, 2521. [\[CrossRef\]](#)
90. Li, Y.; Pinto, M.C.B.; Diabat, A. Analyzing the critical success factor of CSR for the Chinese textile industry. *J. Clean. Prod.* **2020**, *260*, 120878. [\[CrossRef\]](#)
91. European Commission. Non-Financial Reporting. Available online: [https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/non-financial-reporting\\_en](https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/non-financial-reporting_en) (accessed on 27 May 2019).
92. Rondinelli, D.A.; Vastag, G. International Environmental Standards and Corporate Policies: An Integrative Framework. *Calif. Manag. Rev.* **1996**, *39*, 106–122. [\[CrossRef\]](#)
93. Gordon, P. Making EMS companies “lean and green”. *Circuits Assem.* **2001**, *12*, 1.

94. Rieple, A.; Singh, R. A value chain analysis of the organic cotton industry: The case of UK retailers and Indian suppliers. *Ecol. Econ.* **2010**, *69*, 2292–2302. [CrossRef]
95. Koster, M.; Vos, B.; van der Valk, W. Drivers and barriers for adoption of a leading social management standard (SA8000) in developing economies. *Int. J. Phys. Distrib. Logist. Manag.* **2019**, *49*, 534–551. [CrossRef]
96. Ararat, M.; Göcenoglu, C. *Drivers for Sustainable Corporate Responsibility, Case of Turkey*; Turkey, 2006. Available online: [https://www.researchgate.net/profile/Melsa\\_Ararat/publication/237227331\\_Drivers\\_for\\_Sustainable\\_Corporate\\_Responsibility\\_Case\\_of\\_Turkey/links/53ede8290cf23733e80b163c.pdf](https://www.researchgate.net/profile/Melsa_Ararat/publication/237227331_Drivers_for_Sustainable_Corporate_Responsibility_Case_of_Turkey/links/53ede8290cf23733e80b163c.pdf) (accessed on 29 July 2020).
97. McAdam, R.; McClelland, J. Sources of new product ideas and creativity practices in the UK textile industry. *Technovation* **2002**, *22*, 113–121. [CrossRef]
98. European Environment Agency. *Environmental Indicator Report 2014. Environmental Impacts of Production-Consumption Systems in Europe*; European Environment Agency: Luxembourg, 2014.
99. Carroll, A.B.; Shabana, K.M. The business case for corporate social responsibility: A review of concepts, research and practice. *Int. J. Manag. Rev.* **2010**, *12*, 85–105. [CrossRef]
100. Margolis, J.D.; Walsh, J.P. Misery loves companies: Rethinking social initiatives by business. *Adm. Sci. Q.* **2003**, *48*, 268–305. [CrossRef]
101. Orlitzky, M.; Schmidt, F.L.; Rynes, S.L. Corporate social and financial performance: A meta-analysis. *Organ. Stud.* **2003**, *24*, 403–441. [CrossRef]
102. Fonseca, L.M.; Ferro, R.L. Does it pay to be social responsible? Portuguese SMEs feedback. *Intang. Cap.* **2016**, *12*, 487–516. [CrossRef]
103. Trudel, R.; Cotte, J. Does it pay to be good? *Mit Sloan Manag. Rev.* **2009**, *50*, 61–68.
104. Othman, S.; Darus, F.; Arshad, R. The influence of coercive isomorphism on corporate social responsibility reporting and reputation. *Soc. Responsib. J.* **2011**, *7*, 119–135. [CrossRef]
105. Arora, A.; Jaju, A.; Kefalas, A.G.; Perenich, T. An exploratory analysis of global managerial mindsets: A case of U.S. textile and apparel industry. *J. Int. Manag.* **2004**, *10*, 393–411. [CrossRef]
106. Ho, H.P.; Choi, T. A Five-R analysis for sustainable fashion supply chain management in Hong Kong: A case analysis. *J. Fash. Mark. Manag. Int. J.* **2012**, *16*, 161–175.
107. Andersson, L.M.; Bateman, T.S. Individual environmental initiative: Championing natural environmental issues in U.S. business organizations. *Acad. Manag. J.* **2000**, *43*, 548–570.
108. Banerjee, S.B.; Iyer, E.S.; Kashyap, R.K. Corporate environmentalism: Antecedents and influence of industry type. *J. Mark.* **2003**, *67*, 106–122. [CrossRef]
109. Niinimäki, K. Eco-clothing, consumer identity and ideology. *Sustain. Dev.* **2010**, *18*, 150–162. [CrossRef]
110. Cline, E.L. *Overdressed: The Shockingly High Cost of Cheap Fashion*; Portfolio/Penguin Group: New York, NY, USA, 2013.
111. Smelik, A. The performance of authenticity. *Address J. Fash. Writ. Crit.* **2011**, *1*, 76–82.
112. International Standard Organization. ISO 14000 family—Environmental management. Available online: <https://www.iso.org/iso-14001-environmental-management.html> (accessed on 6 May 2019).
113. International Standard Organization. ISO 26000—Social responsibility. Available online: <https://www.iso.org/iso-26000-social-responsibility.html> (accessed on 27 May 2019).
114. Barney, J.B. Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *J. Manage.* **2001**, *27*, 643–650. [CrossRef]
115. Mattingly, J.E. Corporate social performance: A review of empirical research examining the corporation–society relationship using Kinder, Lydenberg, Domini social ratings data. *Bus. Soc.* **2015**, *56*, 796–839. [CrossRef]
116. Institute for Climate Economics. *Internal Carbon Pricing: A Growing Corporate Practice*; Institute for Climate Economics: Paris, France, 2016.
117. Cuff, M. Carbon Pricing is Becoming the Norm for Big Companies. Available online: <https://www.greenbiz.com/article/carbon-pricing-becoming-norm-big-companies> (accessed on 3 June 2019).
118. Gold Standard. *Better Information for Better Decision-Making*; Gold Standard: Geneva, Switzerland, 2016.
119. Jones, B.; Temperley, J.; Lima, A. Corporate reputation in the era of Web 2.0: The case of Primark. *J. Mark. Manag.* **2009**, *25*, 927–939. [CrossRef]
120. Whitehead, J. Primark tops list of unethical clothes shops in poll that shames highstreet brands. Available online: [www.campaignlive.co.uk/article/primark-tops-list-unethical-clothes-shops-poll-shames-high-street-brands/532319](http://www.campaignlive.co.uk/article/primark-tops-list-unethical-clothes-shops-poll-shames-high-street-brands/532319) (accessed on 27 May 2019).



121. Hendriks, V. Are Primark's sustainability efforts enough to make a difference? Available online: <https://fashionunited.uk/primark-sustainability> (accessed on 27 May 2019).
122. Schnepfer, W.D.; Meyskens, M.; Soleimani, A.; Celo, S.; He, W.; Leartsurawat, W. Organizational drivers of corporate social responsibility: Disentangling substance from rhetoric. *S.A.M. Adv. Manag. J.* **2015**, *80*, 20–32.
123. Marcus, J.; MacDonald, H.A.; Sulsky, L.M. Do personal values influence the propensity for sustainability actions? A policy-capturing study. *J. Bus. Ethics* **2015**, *127*, 459–478. [[CrossRef](#)]
124. Waddock, S.; Rasche, A. *Building the Responsible Enterprise: Where Vision and Values Add Value*; Stanford University Press: Redwood City, CA, USA, 2011.
125. Maak, T.; Pless, N.M. Responsible leadership in a stakeholder society—A relational perspective. *J. Bus. Ethics* **2006**, *66*, 99–115. [[CrossRef](#)]
126. Auke, E.; Simaens, A. Corporate responsibility in the fast fashion industry: How media pressure affected corporate disclosure following the collapse of Rana Plaza. *Int. J. Entrep. Innov. Manag.* **2019**, *23*, 356–382. [[CrossRef](#)]
127. Šajn, N. *Environmental Impact of the Textile and Clothing Industry. What Consumers Need to Know*; EPRS: Brussels, Belgium, 2019.
128. Nidumolu, R.; Prahalad, C.K.; Rangaswami, M.R. Why sustainability is now the key driver of innovation. *Harv. Bus. Rev.* **2009**, *87*, 56–64.
129. Koplin, J.; Seuring, S.; Mesterharm, M. Incorporating sustainability into supply management in the automotive industry—the case of the Volkswagen AG. *J. Clean. Prod.* **2007**, *15*, 1053–1062. [[CrossRef](#)]
130. Balasubramanian, S. A hierarchical framework of barriers to green supply chain management in the construction sector. *J. Sustain. Dev.* **2012**, *5*, 15–27. [[CrossRef](#)]
131. Goworek, H.; Fisher, T.; Cooper, T.; Woodward, S.; Hiller, A. The sustainable clothing market: An evaluation of potential strategies for UK retailers. *Int. J. Retail Distrib. Manag.* **2012**, *40*, 935–955.
132. Luthra, S.; Kumar, V.; Kumar, S.; Haleem, A. Barriers to implement green supply chain management in automobile industry using interpretive structural modeling technique: An Indian perspective. *J. Ind. Eng. Manag.* **2011**, *4*, 231–257. [[CrossRef](#)]
133. Bhaduri, G.; Ha-Brookshire, J.E. Do transparent business practices pay? Exploration of transparency and consumer purchase intention. *Cloth. Text. Res. J.* **2011**, *29*, 135–149. [[CrossRef](#)]
134. Karaalp, H.S.; Yilmaz, N.D. Comparative advantage of textiles and clothing: Evidence for Bangladesh, China, Germany and Turkey. *Fibres Text. East. Eur.* **2013**, *21*, 14–17.
135. Luchs, M.G.; Naylor, R.W.; Irwin, J.R.; Raghunathan, R. The sustainability liability: Potential negative effects of ethicality on product preference. *J. Mark.* **2010**, *74*, 18–31. [[CrossRef](#)]
136. Hobson, K. Sustainable consumption in the United Kingdom: The “responsible” consumer and government at “arm’s length”. *J. Environ. Dev.* **2004**, *13*, 121–139. [[CrossRef](#)]
137. Scaraboto, D.; Fischer, E. Frustrated fashionistas: An institutional theory perspective on consumer quests for greater choice in mainstream markets. *J. Consum. Res.* **2012**, *39*, 1234–1257. [[CrossRef](#)]
138. Eckhardt, G.M.; Belk, R.; Devinney, T.M. Why don’t consumers consume ethically? *J. Consum. Behav.* **2010**, *9*, 426–436. [[CrossRef](#)]
139. Dolan, P.; Peasgood, T.; Dixon, A.M.; Knight, M.; Phillips, D.; Tsuchiya, A.; White, M. *Research on the Relationship Between Well-Being and Sustainable Development*; DEFRA: London, UK, 2006.
140. Joergens, C. Ethical fashion: Myth or future trend? *J. Fash. Mark. Manag. An Int. J.* **2006**, *10*, 360–371. [[CrossRef](#)]
141. Chesbrough, H. Business model innovation: Opportunities and barriers. *Long Range Plann.* **2010**, *43*, 354–363. [[CrossRef](#)]
142. Al Khidir, T.; Zailani, S. Going green in supply chain towards environmental sustainability. *Glob. J. Environ. Res.* **2009**, *3*, 246–251.
143. Lo, C.K.Y.; Yeung, A.C.L.; Cheng, T.C.E. The impact of environmental management systems on financial performance in fashion and textiles industries. *Int. J. Prod. Econ.* **2012**, *135*, 561–567. [[CrossRef](#)]
144. Youngjoo, N.; Kyu, N.D. Investigating the sustainability of the Korean textile and fashion industry. *Int. J. Cloth. Sci. Technol.* **2015**, *27*, 23–33.
145. Mihm, B. Fast fashion in a flat world: Global sourcing strategies. *Int. Bus. Econ. Res. J.* **2010**, *9*, 55–64. [[CrossRef](#)]



146. Köksal, D.; Strähle, J.; Müller, M.; Freise, M. Social sustainable supply chain management in the textile and apparel industry—A literature review. *Sustainability* **2017**, *9*, 100. [\[CrossRef\]](#)
147. Du, W.; Pan, S.L.; Zuo, M. How to balance sustainability and profitability in technology organizations: An ambidextrous perspective. *IEEE Trans. Eng. Manag.* **2013**, *60*, 366–385. [\[CrossRef\]](#)
148. Volberda, H.W. Toward the flexible form: How to remain vital in hypercompetitive environments. *Organ. Sci.* **1996**, *7*, 359–374. [\[CrossRef\]](#)
149. Collins, D. Five levees for improving ethical performance. *Strateg. Financ.* **2006**, *88*, 19–21.
150. Stevens, B. An analysis of corporate ethical code studies: “Where do we go from here?”. *J. Bus. Ethics* **1994**, *13*, 63–69. [\[CrossRef\]](#)
151. Gillingham, K.; Carattini, S.; Esty, D. Lessons from first campus carbon-pricing scheme. *Nature* **2017**, *551*, 27–29. [\[CrossRef\]](#)
152. Delmas, M.A.; Burbano, V.C. The drivers of greenwashing. *Calif. Manage. Rev.* **2011**, *54*, 64–87. [\[CrossRef\]](#)
153. Laufer, W.S. Social accountability and corporate greenwashing. *J. Bus. Ethics* **2003**, *43*, 253–261. [\[CrossRef\]](#)
154. H&M. *H&M Group Sustainability Report 2018*; H&M: Stockholm, Sweden, 2019.
155. Robson, C. *Real World Research: A Resource for Social Scientists and Practitioner-Researchers*, 2nd ed.; Blackwell: Oxford, UK, 2002.
156. Malhotra, N.; Nunan, D.; Birks, D. *Marketing Research: An Applied Approach*, 5th ed.; Pearson: Harlow, 2017.
157. Saunders, M.N.K.; Lewis, P.; Thornhill, A. *Research Methods for Business Students*, 5th ed.; Pearson Education: London, UK, 2009.
158. Seuring, S. Case study research in supply chains—An outline and three examples. In *Research Methodologies in Supply Chain Management*; Kotzab, H., Seuring, S., Müller, M., Reiner, G., Eds.; Physica-Verlag HD: Heidelberg, Germany, 2005; pp. 235–250.
159. Yin, R.K. *Case Study Research: Design and Methods*, Applied Social Research Methods Series; 4th ed.; SAGE: Thousand Oaks, CA, USA, 2009; Volume 5.
160. Yin, R.K. *Applications of Case Study Research*; Sage Publications Ltd.: London, UK, 2011.
161. Stoughton, A.M.; Ludema, J. The driving forces of sustainability. *J. Organ. Chang. Manag.* **2012**, *25*, 501–517. [\[CrossRef\]](#)
162. Saunders, B.; Sim, J.; Kingstone, T.; Shula, B.; Waterfield, J.; Bartlam, B.; Burroughs, H.; Jinks, C. Saturation in qualitative research: Exploring its conceptualization and operationalization. *Qual Quant* **2018**, *52*, 1893–1907. [\[CrossRef\]](#) [\[PubMed\]](#)
163. Fusch, P.; Fusch, G.E.; Ness, L.R. Denzin’s paradigm shift: Revisiting triangulation in qualitative research. *J. Soc. Chang.* **2018**, *10*, 19–32. [\[CrossRef\]](#)
164. Walsham, G. Doing interpretive research. *Eur. J. Inf. Syst.* **2006**, *15*, 320–330. [\[CrossRef\]](#)
165. Eddleston, K.A.; Kellermanns, F.W. Destructive and productive family relationships: A stewardship theory perspective. *J. Bus. Ventur.* **2007**, *22*, 545–565. [\[CrossRef\]](#)
166. White, K.; Habib, R.; Hardisty, D.J. How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. *J. Mark.* **2019**, *83*, 22–49. [\[CrossRef\]](#)
167. Pal, R.; Jonathan, G. Modelling environmental value: An examination of sustainable business models within the fashion industry. *J. Clean. Prod.* **2018**, *184*, 251–263. [\[CrossRef\]](#)
168. Twomey, D.F.; Twomey, R.F.; Farias, G.; Ozgur, M. Human values and sustainability: Can green swim upstream. *People Strateg.* **2010**, *30*, 52–59.
169. He, H.; Harris, L. The impact of Covid-19 pandemic on corporate social responsibility and marketing philosophy. *J. Bus. Res.* **2020**, *116*, 176–182. [\[CrossRef\]](#)
170. Galvani, A.; Lew, A.A.; Perez, M.S. COVID-19 is expanding global consciousness and the sustainability of travel and tourism. *Tour. Geogr.* **2020**, 1–10. [\[CrossRef\]](#)
171. Matten, D.; Moon, J. “Implicit” and “Explicit” CSR: A conceptual framework for a comparative understanding of corporate social responsibility. *Acad. Manag. Rev.* **2008**, *33*, 404–424. [\[CrossRef\]](#)
172. Perrini, F.; Tencati, A. Sustainability and stakeholder management: The need for new corporate performance evaluation and reporting systems. *Bus. Strateg. Environ.* **2006**, *15*, 296–308. [\[CrossRef\]](#)
173. Geissdoerfer, M.; Morioka, S.N.; de Carvalho, M.M.; Evans, S. Business models and supply chains for the circular economy. *J. Clean. Prod.* **2018**, *190*, 712–721. [\[CrossRef\]](#)
174. *Ellen McArthur Foundation Towards the Circular Economy*; Ellen McArthur Foundation: Cowes, UK, 2013.

175. Pal, R.; Shen, B.; Sandberg, E. Circular fashion supply chain management: Exploring impediments and prescribing future research agenda. *J. Fash. Mark. Manag. Int. J.* **2019**, *23*, 298–307. [[CrossRef](#)]
176. Jia, F.; Yin, S.; Chen, L.; Chen, X. The circular economy in the textile and apparel industry: A systematic literature review. *J. Clean. Prod.* **2020**, *259*, 120728. [[CrossRef](#)]
177. Harmon, J.; Fairfield, K.D. Relative effect of geographic context and international strategic approach on sustainability management. *Int. J. Sustain. Strateg. Manag.* **2014**, *4*, 221. [[CrossRef](#)]
178. De Abreu, M.C.S.; de Castro, F.; de Assis Soares, F.; da Silva Filho, J.C.L. A comparative understanding of corporate social responsibility of textile firms in Brazil and China. *J. Clean. Prod.* **2012**, *20*, 119–126. [[CrossRef](#)]



© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).